

Stormwater Pollution Prevention Plan  
During Construction Activities  
for  
Shangri-La  
Greenhouses and Farmstand  
Town of Moreau  
Saratoga County, New York

**Prepared for:**

Shangri-La Real Estate Holdings, LLC

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## **CERTIFICATION**

Prior to starting construction, the operator must certify in the site log book that this SWPPP was prepared in accordance with the requirements in the permit and that it meets all federal, state and local stormwater management, pollution prevention, and erosion and sediment control requirements.

In addition, any person signing any document pertaining to the project, (i.e., Notice of Intent (NOI), Notice to Terminate (NOT), reports, certifications, etc.) must sign the Certification Statement in this report. The owner, all contractors and subcontractors or authorized representatives of the owner, contractors and subcontractors will be required to sign and date the Certification Statement after reading and understanding this Stormwater Pollution Prevention Plan as stated in Part VII, H of the General Permit.

The SWPPP Preparer Certification and Owner/Operator Certification are provided on the following pages. The Contractor / Subcontractor SPDES Permit Certification is provided as Appendix B. It must be signed by all contractors and subcontractors, listing their responsibilities, before any construction activity may begin on site. In addition, the contractor or subcontractor responsible for soil disturbance shall identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be a trained contractor and shall be on site when soil disturbance activities are being performed.

All signed forms must be kept with this SWPPP.

## Plan Certification

This SWPPP has been prepared in accordance with good engineering practices to meet requirements set forth by the United States Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (NYSDEC). As required under the terms of NYSDEC's General Permit GP-0-20-001, this plan is hereby certified as follows:

"I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

**NAME:** Peter Loyola, RLA  
Principal  
CLA SITE Landscape Architecture, Engineering, and Planning, P.C.

**SIGNATURE:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Owner/Contractor Certification

As required under the terms of the NYSDEC's General Permit GP-0-20-001, this certification statement must be signed by the owner or operator. The owner/operator will be responsible to ensure that this SWPPP is being followed in its entirety.

"I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted."

**NAME:** Orson Klender

**COMPANY:** Shangri-La Real Estate Holdings, LLC

**TITLE:** Owner

**ADDRESS:** 10 Licardo Lane, Saratoga Springs, NY 12866

**PHONE NUMBER:** (518) 588-2319

**SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

## I. INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the Shangri-La Greenhouses and Farmstand Project located in Moreau, New York. This SWPPP has been prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-20-001). See Appendix I for the General Permit.

Two NOI's have previously been submitted for this site.

The first NOI was submitted June 28, 2022, for the Route 9 Highway Construction Staging Area project. The permit identification number associated with this project is NYR11J890. The Project involved the temporary use of a portion of the property for a staging area during construction of the I-87/Exit 17 Interchange improvements. The areas associated with the Highway Construction Staging Area have been fully stabilized and vegetated.

The second NOI was submitted Sept. 13, 2024, for the Spiers Falls Commercial Crop Field Area. The permit submission number associated with this project is HQ6-K524-4N4Z8. The Spier Falls Commercial Crop Field Area Project involved the temporary use of a portion of the property for commercial crop fields and a dirt access road and staging area, constructed in June 2024 for the 2024 growing season. This area is not associated with the staging area used for the interchange improvements.

The previous permits did not propose the creation of new impervious areas. The previous SWPPP reports only included the required Erosion and Sediment Control components. This SWPPP will replace the previous Erosion and Sediment Control SWPPPs associated with this site. This SWPPP will include Post Construction Stormwater Practices as new impervious cover is now being proposed.

This SWPPP outlines methods that owners and those under contract to the owner are to use to retain surface stormwater and to prevent sediment-laden runoff from entering waterways, bodies of water, wetlands and other sensitive environments. This plan outlines the methods for stormwater and runoff management during the construction phase, specifies post-construction stormwater management practices, and identifies the responsibilities of the Pollution Prevention Team throughout the entire project duration.

The primary objectives with regard to the stormwater management and pollution prevention are as follows:

1. Utilize and maintain natural drainage areas and existing hydrology throughout the project area.
2. Maintain existing soil properties and maximize the potential for stormwater infiltration and groundwater recharge.
3. Maintain or reduce the pre-development peak runoff discharge rates for the appropriate storm events at discharge points through proposed stormwater mitigation.
4. Provide the required WQv and RRv treatment volumes through the use of standard and green infrastructure practices.
5. Stabilize disturbed areas and provide erosion control measures to minimize soil erosion during and after construction.
6. Inspect and maintain the temporary and permanent stormwater control devices in accordance with local, state, and federal requirements.

### **Pollution Prevention Team**

The Pollution Prevention Team consists of a qualified professional representative of the owner, and an authorized agent of the General Contractor. The General Contractor will be responsible for ensuring that all his employees and all the subcontractors understand the provisions set forth in this Stormwater Pollution Prevention Plan and SPDES General Permit for Construction Activities. The owner shall oversee the construction activities of the General Contractor and ensure the Pollution Prevention Plan is being followed in its entirety. The Owner, General Contractor, and authorized agents for each subcontractor must sign the Contractor Certification Statement of this plan prior to commencing construction activities. See Appendix B of this report.

The Pollution Prevention Team will be responsible for ensuring that the construction of this project is in accordance with the SPDES General Permit by implementing the mitigation measures defined in the Stormwater Pollution Prevention Plan and as specified in the contract documents. The Pollution Prevention Team will also be responsible for keeping the Stormwater Pollution Prevention Plan current and notifying the appropriate agencies should changes to the plan become necessary.



**II. APPLICANT DATA**

**Project Owner:**

Shangri-La Real Estate Holdings, LLC  
Contact: Orson Klender  
10 Licardo Lane  
Saratoga Springs, New York 12866

**Landscape Architect and Civil Engineer:**

CLA SITE Landscape Architecture, Engineering & Planning, P.C.  
59 Church Street, Suite 200  
Saratoga Springs, New York 12866

Representative: Peter Loyola, RLA  
Scott Miller, RLA  
(518) 584-8661

**Site Contractor:**

**NAME:** \_\_\_\_\_

**COMPANY:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

### **III. PROJECT DESCRIPTION**

The proposed project consists of the development of 12 greenhouses, barn, septic system, staging area, access roads, parking, and associated stormwater structures with ingress and egress from Spier Falls Road. A commercial farmstand is also proposed with ingress and egress from Old Saratoga Road.

The project will result in soil disturbance and the creation of impervious surfaces (building roofs and asphalt tailing access drives). In accordance with the NYSDEC Stormwater Design Manual, 100% of the Water Quality Volume for the proposed impervious surfaces shall be provided for this project. No permanent treatment measures are required for areas that remain undisturbed or where new vegetation is specified.

Runoff Reduction Volume (RRv) Techniques are being proposed to treat the minimum required RRv volume and will consist of vegetated swales and an infiltration basin.

WQV and RRv will be provided for Subcatchments 2a, 2c, 2e, 4a, 5a, 5b and 6 as these areas encompass all proposed impervious surfaces.

WQv and RRv are not being proposed for Subcatchments 1, 2b, 2d, 3, 4b, and 7 as there are no new impervious areas proposed within this subcatchment area.

The project is planned to be completed in five (5) phases. See Phasing Plan and Site Plan Drawings in Appendix C.

### **IV. SITE DESCRIPTION**

A description of the project site and the physical conditions that comprise the overall site are as follows:

#### **A. Location and Size**

The Project is located in Saratoga County, Town of Moreau, north of Old Saratoga Road and west of the Route 9 & I-87 interchange. The property consists of a total area of 76.37 acres with a proposed disturbed area of 13.9 acres.

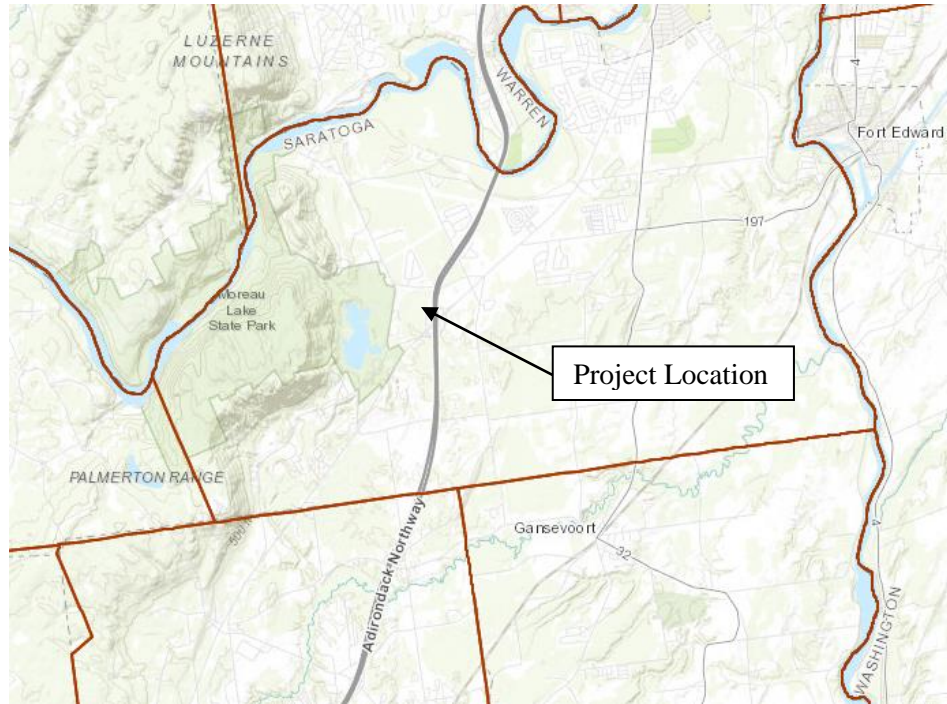


Figure 1 – Site Location Map

## **B. Existing Conditions, Topography, Land Cover**

The property, identified as tax parcels 76.-3-83.111 and 76.-3-89.2, has been largely undeveloped. The site has been logged several times throughout the years, most recently in 2023. In 2020, logging of the site was approved by the Town of Moreau and oversight/inspections of logging activities were conducted by the Town and the New York State Department of Environmental Conservation (NYSDEC). In 2023, additional land was cleared for the purposes of temporary agriculture.

Current land cover in the vicinity of the proposed greenhouses consists of recently logged and/or grubbed areas, primarily consisting of exposed soil surfaces and agriculture area. Existing site access is located off Spier Falls Road. An existing access road (former logging road) is also located on the site and will continue to be used for site circulation. Gravel has been used for a small stretch at the site's entry to create temporary, stabilized construction access for erosion and sediment control.

Current land cover in the vicinity of the proposed farmstand consists of recently logged and/or grubbed areas, primarily consisting of exposed soil surfaces and crop fields. Existing site access is located off Spier Falls Road. An existing access road

(former logging road) is also located on the site and will continue to be used for site circulation. Gravel has been used for a small stretch at the site's entry to create temporary, stabilized construction access for erosion and sediment control.

Sediment basins are located throughout the site and were originally installed to control sedimentation during logging and when the site was being used as a staging area for the I-87/Exit 17 improvements.

The site contains a number of jurisdictional and non-jurisdictional Federal and State wetlands. The proposed crop fields will not encroach on previously delineated wetland boundaries or associated wetland buffers. See Erosion & Sediment Control Plan in Appendix C for reference.

Existing slopes generally range between approximately <1% and 9%.

### C. Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the soils within the greenhouse and farmstand areas are primarily well drained to poorly drained.

The soil types and associated Hydrological Soil Group (HSG) classification within the project limits are presented in Table 1 below:

| Soil ID | Soil Description                              | HSG |
|---------|---|-----|
| DeA     | Deerfield loamy fine sand, 0 to 3% slopes     | A   |
| DeB     | Deerfield loamy fine sand, 3 to 8% slopes     | A   |
| EiB     | Elmbridge vey fine sandy loam, 3 to 8% slopes | C/D |
| WnB     | Windsor loamy sand, 3 to 8% slopes            | A   |
| Wa      | Wareham loamy sand                            | A/D |

A copy of the soil survey for the parcel is provided in Appendix G of this SWPPP and is provided for reference as Figure 2, below.

Soil testing in the form of test pits and infiltration testing has been performed at the project site. Locations of test pits are located on the project maps. Results can be found in Appendix G.

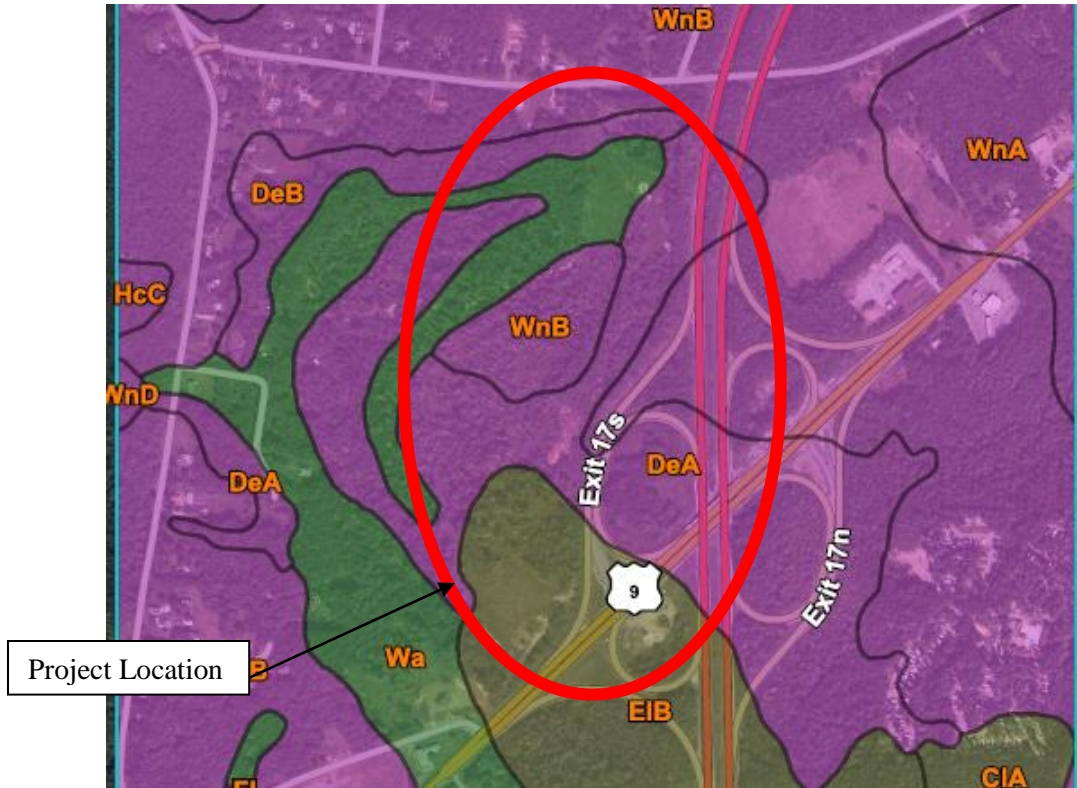


Figure 2 - Soil Map

See WQv and RRv calculations for a description on soil designations used for this project.

#### D. Receiving Waters

The nearest surface water bodies to which construction site runoff will discharge are on-site State and Federal wetlands. Based on New York State USGS Quadrangle Mapping, water will then discharge into the North Branch of the Snook Kill. The Creek is classified as a Class C stream on the NYSDEC Environmental Resource Mapper. This waterbody has not been identified as a 303(d) segment, and there are no direct discharges from the site to this stream.

## **E. Archeological Assessment**

According to the New York State Cultural Resource Information System (CRIS), the proposed staging areas are not located within an archaeologically sensitive area. In addition, the site has been previously disturbed by logging activities.

## **F. Listed, Endangered or Threatened Species or Critical Habitat Assessment**

Based on the NYSDEC Environmental Resource Mapper, a small portion of the site is located within an area with the potential for Rare Plants or Animals. The portion of the project site located within this area has been previously disturbed by logging activities. As a result, there will be no disturbance of rare plant species or animals.

The Environmental Mapper also shows the site within the vicinity of freshwater wetlands. The NYS Department of Environmental Conservation and Army Corps of Engineers issued Freshwater Wetlands/Jurisdictional letters dated 10/23/2015 and 8/13/2015, respectively. NYSDEC and Federal wetlands are shown on the project maps. As outlined in Section IV.B, the project will not encroach on previously delineated wetlands or associated wetland buffers.

## **V. MANAGEMENT OF RUNOFF**

A number of planning strategies were implemented to preserve natural resources and reduce impervious cover at the site. Upon commencing design work on the project the original concept plan was reviewed. Changes were made to reduce the overall impact of the proposed improvements. Below is the list of strategies outlined by the NYSDEC and a brief description of how those strategies were implemented.

### **A. Preservation of Natural Resources**

**Preservation of undisturbed areas** - The entire property is 76.37+/- acres. The current plan proposes development that will disturb approximately 13.9 acres of the property, of which much has been previously disturbed.

**Preservation of buffers** – During design, every attempt was made to reduce impact to existing vegetation. The wetland and 100' wetland buffer is not impacted. Grading was designed to protect vegetated and sensitive areas. The proposed storage buildings were situated to maintain vegetated buffers in the vicinity of the Interstate 87 right-of-way.

**Reduction of clearing and grading** – The site was previously logged, the removal of additional mature vegetation is not necessary, the project preserves trees that serve as a buffer in the vicinity of the adjacent residential properties and the Interstate 87 right-of-way. Grading is limited to the footprint of the greenhouse, farmstand and immediate surroundings, including the swales and detention ponds.

**Locating development in less sensitive areas** - The development does not disturb wetlands, wetland buffers, or critical habitats, and is not within the floodplain.

**Open Space Design** – The project limits impervious surfaces to the greenhouses, farmstand and access roads. The majority of the site will remain vegetated.

**Soil restoration** – All areas disturbed by grading and/or compaction shall be “restored” in order to recover the original properties and porosity of the soils. The method to be used is outlined in Section VI-C.

#### **B. Reduction of Impervious Cover**

Impervious cover was reduced to the greatest extent practical. The gravel drive areas were minimized to the greatest extent possible. The majority of the facility will consist of crop fields, vegetated and grassed areas.

The proposed maintenance access to the stormwater ponds will be vegetated. An impervious surface is not proposed.

#### **C. Runoff Reduction Techniques / Green Infrastructure Management Practices**

Several Runoff Reduction Volume techniques were utilized in the design of this project. The following runoff reduction techniques are utilized in this project:

1. Vegetated swales are used to achieve a WQv reduction for the project.
2. A cistern is used to provide WQv reduction for the project.
3. An infiltration basin is used to provide the remaining RRv volume after the reduction (vegetated swales and cistern) is applied to the required WQv calculations.

See Water Quality and RRv Calculations and summary in Appendix F.

#### **D. Standard Stormwater Management Practices**

The permanent standard treatment features of the Stormwater Management System for the proposed project consists of Micropool Extended Detention Ponds. Grassed drainage swales, cistern, and infiltration basin provide the required minimum RRv treatment. In all instances, the structures associated with the stormwater management system have been sized to accommodate peak flows and volumes from the appropriate storm events as required by the NYSDEC. The design storm is the twenty-five-year, 24-hour storm, with provisions made for the one-, ten-, and one-hundred-year storm events.

##### **1. Stormwater Ponds with Forebay and Micropool**

A Stormwater Pond to temporarily store surface water runoff, provide water quality treatment, and mitigate adverse downstream effects is designed based on the following criteria:

- The pond is designed to detain various storm events as mitigation for increases in impervious area; pre-construction flow rates will be maintained or reduced;
- The pond is sized to accommodate the peak flow from the twenty-five-year, 24-hour storm, with provisions made for the one-, ten-, and one-hundred-year storm events;
- The pond is designed to maintain a permanent water elevation;
- Pond is designed for adequate freeboard;
- The maximum side slope of the ponds will not exceed a slope of 4H:1V;
- The pond will have an aquatic bench. Safety benches are not required; as all side slopes are 4:1 or greater.
- The pond is accessible for maintenance.



## **2. Infiltration Basin**

Infiltration Basins to allow surface water runoff to infiltrate into the surrounding soils are designed based on the following criteria:

- The infiltration basins are designed to allow the entire water quality volume (WQv) to infiltrate into the surrounding soils;
- The infiltration basins are designed utilizing a safety factor of two (2) applied to the infiltration rates measured in the field. Field measured rates were determined to be around 200 in/hr, while the rates utilized in design are 100 in/hr.
- The infiltration basins are sized conservatively (assuming infiltration only through the floor of the practice);
- The infiltration basins are designed to de-water within 48 hrs of a storm event (see Appendix F);
- Infiltration basins have been designed with emergency spillways, designed in the event of system failure to allow for stable, controlled discharge downstream.
- The maximum side slope of the basins will not exceed a slope of 3H:1V, and;
- The basin will be accessible for maintenance.

## **4. Drainage Swales**

Drainage swales to provide RRV treatment and convey surface water runoff shall be designed based on the following criteria:

- All drainage swales are sized to accommodate the peak flow from the twenty-five-year, 24-hour storm, with provisions made for the one-, ten-, and one-hundred-year storm events;
- Drainage swales are designed with adequate freeboard;
- Drainage swales will be grass-lined, unless otherwise noted on plans.
- All permanent swales will be accessible for maintenance; and
- Check dams will be installed in swales, as deemed necessary, to reduce sedimentation.

#### **4. Conveyance Piping**

Storm runoff from developed areas will be conveyed through stormwater piping to the nearest stormwater management system. In general, stormwater piping is designed such that:

- All conveyance piping is sized to accommodate the peak flow from the twenty-five-year, 24-hour storm, with provisions made for the one-, ten-, and one-hundred-year storm events;
- Flow capacity is sufficient to convey runoff to the receiving catch basin, pond, or ditch without overflowing the catch basin, pond, or ditch at the entrance of the culvert; and
- The strength of the piping is sufficient to withstand the soil and vehicle loading when installed according to the design plans.

See Sheets C-201-201 for proposed stormwater layouts and Sheets C-702, 705-707 for details.

#### **6. Thermal Pollution**

Stormwater that comes in contact with buildings, roadways, or other impermeable surfaces may increase in temperature during warm weather. If stormwater is discharged into surface water bodies, the temperature of the water body may also increase, potentially threatening plant and animal species sensitive to temperature changes, as well as providing an environment that may cause nuisance species to flourish.

The stormwater that comes in contact with the proposed surfaces will be retained in the drainage courses and proposed structures for a significant amount of time prior to reaching any sensitive areas. This retention will allow treatment of the stormwater by allowing suspended solids to settle as well as allow water that has come in contact with impermeable surfaces to cool.

## **VI. CONSTRUCTION ACTIVITIES**

### **A. Install Silt Fencing**

Initial disturbance will be limited to that necessary to install silt fencing as shown on Sheet C-200-201, "Grading & Erosion Sediment Control Plan." Once silt fencing is installed, additional clearing may continue as necessary for stormwater improvements and preparation of access roadway improvements. All waste will be removed from the site promptly and sent to an appropriate waste or construction and demolition management facility. Prompt removal of soils and wastes will reduce the risk of sediment entering runoff and thus being discharged into surface waters.

### **B. Temporary Stockpiles**

Construction materials prone to erosion (topsoil, sands, sub-base, etc.) shall be stored in the locations/staging areas delineated on Sheet C-200-201. Silt fence shall be installed around the stockpile area prior to the commencement of construction.

### **C. Grading / Site Disturbance / Soil Restoration**

Site demolition of existing conditions and site preparation/grading of proposed improvements will include stripping, stockpiling, excavation, earth removal, and rough grading of the stormwater management areas, building foundations, access drives, and pathways. Excavation will also include trenching for the installation of utilities and footings. Finished grading is shown on Sheet C-200-201.

Surfaces that will be grass-covered shall be seeded immediately upon final grading to minimize both the quantity of runoff and the potential for erosion. Soils on steep slopes (>1:3, rise:run) or any slope which drains directly off site or to a surface water body must be covered with an approved 100% bio-degradable, non-synthetic erosion control product (straw mulch, jute mesh, etc.) to achieve healthy vegetation as soon as possible.

Stormwater may be diverted around seeded areas through temporary ditches or piping. Temporary ditches may be lined with stone riprap, erosion control fabric, or grass as appropriate to reduce the sedimentation of stormwater runoff.

All areas disturbed by grading and/or compaction shall be “restored” in order to recover the original properties and porosity of the soils. The following method will be used on all disturbed areas to be vegetated:

- Till compost into subsoil to a depth of at least 12” using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.
- Rock-pick until uplifted stone/rock material of four inches and larger in size are cleaned off the site.
- Apply topsoil to a depth of 6 inches.
- Vegetate as required on approved plans.

#### **D. Construction Sequencing / Schedule**

The project will be constructed in five (5) Phases. See Phasing Plans in Appendix C.

Phase I (7.41 acres), will include the construction of the access road off of Spier Falls Road, barn, parking area, two (2) greenhouses, stormwater pond P4, infiltration basin P5, and associated vegetated swales. Phase I will be completed in two separate phases to prevent more than 5 acres of disturbance at one time.

Phase II (0.39 acres) will include the construction of an additional two (2) greenhouses.

Phase III (2.71 acres) will include 4 additional greenhouses, the remainder of the access drive, stormwater pond P6, and associated vegetated swales.

Phase IV (1.64 acres) will include the construction of the remaining four (4) greenhouses.

Phase V (1.81 acres) will include the farmstand. Improvements will include the pavilion, parking stormwater pond 3P and associated vegetated swales.

The sequence of construction tasks selected below is designed to combine development with responsible land management as well as protection of sensitive environments. Temporary and permanent stabilization methods will be implemented before

construction begins and will be continuously modified and maintained throughout the project to provide the best methods for stormwater management and pollution prevention. The following construction tasks, if applicable, will be followed for each phase of construction.

The progression of construction phases is subject to change due to unexpected weather events, contractor and equipment availability, etc. Construction of Phase I is expected to begin upon project approval. Subsequent phases will be constructed based on market demand.

Within these phases, multiple tasks of development will occur simultaneously and stabilization methods, both temporary and permanent, will be utilized upon completion of each task. Temporary stabilization methods shall be phased into permanent stabilization methods to minimize exposed or unstable soils for an extended period of time.

### **Task I - Staging Area and Perimeter Erosion Control**

Task I will include the establishment of stabilized construction staging areas and installation of perimeter erosion control devices. The anticipated staging areas are shown on Sheet C-200-201.

Construction entrances shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way or streets. Silt fences and all other temporary silt and pollution control devices will be installed as shown on the Grading Plans and around all disturbed areas parallel to the slope to reduce washouts and erosion to any adjacent surface water bodies. Stockpile areas will be defined with perimeter silt fencing prior to stockpiling. Unpaved temporary/permanent driveways shall be covered with gravel to limit dust and improve air quality in the area of the site.

Initial clearing and earth disturbance will be limited to that necessary to install sediment control measures. Additional excavation and clearing will only take place after sediment and erosion controls are in place.

## **Task II – Demolition, Clearing, Grubbing, Rough Excavation, Hauling**

Task II will include site demolition, clearing, grubbing brush areas, stripping/stockpiling topsoil, and removal of excess earth off site in order to “rough grade” the permanent storm structures, access drives, pathways, and/or buildings.

## **Task III – Permanent Storm Structures, Building and/or Utilities**

Task III will include the construction of the permanent stormwater structures, permanent drainage swales, and installation of the remaining secondary stormwater structures. Stormwater drainage structures (i.e., stormwater pond, bioretention area, trench drains, swales and culverts) will be protected from silt during construction via means that include the placement of silt fencing around the structures’ inlet points.

Proposed grades for storm utilities will be established.

Task III also includes the installation of the buildings and utilities that require trench and pit excavation. All utilities shall be extended to a close proximity of the proposed connection point or structure. Work shall be coordinated as necessary with local building officials having jurisdiction.

Throughout the construction of Task III, the procedures outlined in this SWPPP will be followed. Silt fencing will be installed, added to, and maintained as shown on the plans and around all disturbed areas parallel to the slope to minimize washouts and siltation of any adjacent surface water bodies.

## **Task IV – Final Grading, Stabilization, Utility Hook-ups**

Task IV includes final grading, connection of all utilities, and all remaining construction items. Once construction has been completed, final site stabilization will take place.

Upon final grading, all disturbed areas will be seeded immediately. Grass seeding is to be relative to the availability of water required for establishing healthy growth. Temporary rye grass seeding will be provided when required to prevent erosion via wind and/or runoff while other areas of permanent grass stands become established.

Throughout the construction of Task IV, the procedures outlined in this SWPPP will be followed. Silt fences will be installed, added to, and maintained as shown on the plans and around all disturbed areas parallel to the slope to minimize washouts and erosion of any adjacent surface water bodies.

Upon completion of Task IV, the Site Contractor will perform a final walkthrough of the site prior to demobilization. The Site Contractor will inspect all slopes disturbed and created during construction to assess the risk of washouts and erosion of nearby surface water bodies.

All steep slopes are to be seeded and stabilized by means of silt fence, check dams, and/or mulching blankets until a healthy stand of grass is established. When permanent stabilization is achieved, by grass or other plantings, temporary measures such as silt fences, etc. may be removed, provided these measures are no longer needed to prevent erosion. Stabilization must be undertaken no later than 14 days after construction activity has ceased.

#### **E. Stabilization Methods**

Certain components of construction have a higher risk for stormwater runoff resulting in soil erosion and sedimentation than others. The primary goal of those involved in the construction of this project is to identify these items and recognize the areas susceptible to erosion. It is the responsibility of those involved in the construction of this project to implement all stabilization measures necessary to mitigate the identified problems.

The contractor must initiate stabilization measures as soon as practical on portions of the site where construction activities have temporarily or permanently ceased. All sediment control measures shall be installed and maintained in accordance with the

### **Temporary Stabilization**

Temporary stabilization methods will be used to prevent erosion and sedimentation during construction. These methods must be used, as needed, on areas identified by the Pollution Prevention Team to be at risk for erosion and where such erosion may adversely affect downstream water quality.

The New York State Standards and Specifications for Erosion and Sediment Control, November 2016 defines some measures that may be used as temporary stabilization.

Silt fences, inlet protection and check dams will be utilized as temporary surface water management features and used during development to reduce erosion and to control sediment. They will also be used as necessary to reduce the sediment load in the receiving drainage ditches. Silt fence will be placed around the stockpile area, ten feet (10') from the toe of slope, until there is no longer a need for the stockpile area and all stored materials have been removed. Inlet protection will be placed around all catch basin and manhole inlets. Stone check dams will be placed in ditches, when deemed necessary, to control flow velocity and promote sedimentation. Temporary stabilization that will be converted to permanent stabilization features include the stone check dams. All other temporary stabilization measures can be removed once site stabilization is achieved.

See Drawing C-001 for additional SWPPP and Erosion and Sediment Control Notes.



## **Permanent Stabilization, Sediment and Erosion Control**

Permanent stabilization measures for the site include the permanent seeding of lawns and slope stabilization through the use of rolled erosion control products or riprap.

Permanent stormwater management features for the proposed development include stormwater ponds, infiltration basin, vegetated swales and conveyance systems (pipes). In all instances, the structures associated with the stormwater management system have been sized to accommodate peak flows from the appropriate storm events as required by the NYSDEC.

We are proposing rip rap protection at the outlets, as shown on Sheet C-703.

## **VII. NON-STORMWATER DISCHARGES**

Pursuant to Part I.E of the General Permit, some non-stormwater discharges are permitted; provided hazardous or toxic material spills have not occurred or have been adequately cleaned prior to discharge and detergents have not been used. All necessary pavement, building and vehicle wash waters will be discharged under the stipulations of this permit. High-pressure washes may be used to clean vehicles, buildings, and pavement. Detergents will not be used in waters that are not discharged into an acceptable sanitary sewer system.

During the dry season, dust control may be necessary to reduce respiratory discomfort associated with dust for workers and neighboring residents. Mature vegetative cover is the best means of controlling dust; however, water may be used on dry soils to reduce dust problems. The soils will be damp, but not saturated, to prevent dust control related runoff.

Dust may also be controlled by stone paving driveways and all access points to the construction-site frequented by construction vehicles. Mulch, including gravel mulch, may also be an effective means of controlling dust. Spray adhesives shall not be used for dust control on this site.

Vehicles may be periodically washed to reduce off-site tracking of sediments accumulated on construction vehicles. Wash waters must not contain any detergents.

## **VIII. BEST MANAGEMENT PRACTICES**

Throughout construction, care will be taken to ensure sediment does not enter surface water bodies and chemicals do not enter stormwater, potentially contaminating surface and groundwater supplies. The following Best Management Practices (BMP) will be observed to maintain responsible environmental practices on the construction site.

### **A. Good Housekeeping**

Good Housekeeping is essential to reducing the risk of contaminating runoff waters during every stage of construction. The General Contractor will ensure supervisors train each employee in good housekeeping practices as they pertain to the implementation of this Stormwater Pollution Prevention Plan.

Immediately following mobilization, the General Contractor will take an inventory of all equipment and containers containing hazardous or toxic materials and submit this inventory to the Owner to keep on site with this Stormwater Pollution Prevention Plan. This inventory will be updated regularly to reflect changes in the quantity or type of hazardous and toxic materials stored on site. In the event of a spill, the Spill Response Team can refer to the inventory if the contents of the spill are unknown.

All equipment will be operational while it is stored on site. Inspections will be conducted regularly to ensure all equipment is free of leaks and that oil and grease are not in contact with soils or stormwater. Portable equipment such as chain saws, drills, and hand tools must be placed within a trailer or under cover at the end of each workday.

A storage area shall be designated on site where all hazardous or toxic materials are stored. Each employee shall return the materials to the designated storage area following use. Chemicals, including gasoline, oil, grease, solvents and detergents will be stored on site in approved containers only. Used chemicals will be disposed of in refuse

containers and removed periodically. Containers will be regularly inspected to ensure the integrity of the container and seals to prevent leaks.

A scheduled clean-up will occur at the end of each work week. During this clean up, empty containers of solvents, oils, grease, paints and detergents will be disposed of, containers of gasoline will be placed in trailers where they are not in contact with stormwater, and the inventory will be updated. Empty containers will not be permitted on the ground.

#### **B. Preventative Maintenance**

All on-site vehicles must be inspected regularly for oil and grease leaks. All leaks will be repaired immediately upon obtaining the appropriate equipment. If the leak cannot be fixed immediately, it will be temporarily mitigated to prevent the flow of contaminants onto the soil and potentially into the stormwater. Drip pans shall be used when performing any maintenance or cleaning on construction vehicles.

#### **C. Spill Prevention and Response**

The safety of employees and neighbors shall be of utmost concern when hazardous or toxic chemicals are stored or utilized on site. Material Safety Data Sheets (MSDS) will be obtained for all toxic or hazardous substances that are stored on site to provide employees with a valuable database in assessing risk in the event of a spill.

Any temporary aboveground storage tanks on site shall have installed leak detection systems, secondary containment, corrosion protection, and undergo periodic monitoring. Tanks constructed of wood, concrete, aluminum, fiberglass reinforced plastic, as well as riveted or bolted steel tanks, are not permitted.

Most spills are minor spills. These spills are unintentional and, in most cases, can be cleaned with equipment such as mops or sponges. Should a spill occur, trained individuals shall be on-call at all times to mitigate the potential negative effects of a spill. The General Contractor will have trained employees knowledgeable in the location of absorbents, brooms, rags, and mops in the event of a small-scale spill. An inventory of equipment and its location will be posted in a visible location, as well as kept in close

proximity to this Pollution Prevention Plan. If the General Contractor does not have Hazardous Material trained employees on site, a firm that specializes in handling spills, soil and water contamination will be called.

After a spill occurs, all personnel not trained in hazardous materials spill response will be asked to evacuate the immediate area. The NYSDEC Spill Response Team will be called to investigate the spill and determine if additional actions should be taken to ensure the safety of personnel and nearby residents. Should any employee have a suspected injury, a local emergency squad must be contacted immediately.

**New York State Department of Environmental Conservation Spills Hotline  
1-800-457-7362**

**D. Sediment and Erosion Control**

Areas of the site where soil disturbance/construction activity will occur and where the disturbed area has the potential to discharge to surface waters of the State are required to implement the erosion and sediment control practices described herein.

**1. Silt Fencing**

Silt fencing or filter socks will be used on site to minimize sediment-laden stormwater from flowing to adjacent areas during construction. Silt fencing should be installed downslope of all disturbed areas. Initial site disturbance/clearing, if any, should be limited to that necessary to properly install silt fencing as shown on the Project Plans. Upon installation of silt fencing, clearing and grubbing operations may continue as necessary for demolition, utility and stormwater improvements, or initial site grading.

**2. Soil Stabilization**

Areas which have been graded to their final elevations shall be stabilized within fourteen (14) calendar days. For areas which will be paved, "stabilization" means the installation of acceptable sub-base. For lawn areas, "stabilization" refers to

an adequate layer of topsoil, seeding, and mulching. Silt fence shall remain in place and be maintained until a healthy lawn (80% cover) has been established.

### **3. Temporary Sediment Trap**

Temporary sediment traps are already established at the locations of the proposed ponds and infiltration basin. All runoff from disturbed areas will be directed to the temporary sediment trap during construction. When soils in the surrounding area have been stabilized, the sediment trap will be re-configured to the specifications for the proposed stormwater structures.

### **4. Temporary Stockpiles**

Construction materials prone to erosion (topsoil, sands, sub-base, etc.) shall be stored in the locations/staging areas delineated and/or described on the Project Plans. Silt fencing shall be installed as needed around stockpile areas prior to the commencement of construction.

### **5. Check Dams**

Temporary or permanent swales which have been graded to their final elevation may experience erosion prior to permanent stabilization. Check dams may be used to reduce erosive velocities in swales to prevent suspension and migration of sediment. Check dams will be installed after any geo-textile channel protection measures.

### **6. Adjunct Erosion Controls**

Straw bales and wattles may be used as check dams in any locations where runoff is channelized during construction to reduce flow velocity and erosion. These measures will be field located as necessary as construction progresses and will be removed once finished grades and permanent stormwater features have been established.

### **7. Slope Stabilization**

Geo-textile fabrics or jute mesh may be used to stabilize slopes with grades in excess of 3H:1V (33%). Geo-textile fabric will be installed only on slopes which

have received final grading, top soil, and seed. Proprietary products will be installed in accordance with all manufacturers' specifications.

#### **8. Channel Protection**

Geo-textile fabrics or jute mesh may be used to stabilize swales with grades in excess of 12H:1V (8.3%). Geo-textile fabric will be installed only on temporary or permanent swales which have received final grading, top soil, and seed. Proprietary products will be installed in accordance with all manufacturers' specifications.

#### **9. Concrete Washout Basins**

Temporary concrete washout basins shall be constructed to prevent migration and tracking of sediments off site as a result of concrete truck cleanout. This measure will be inspected daily and sediment buildup removed and disposed of properly.

Additional Erosion & Sediment control practices not listed above may be implemented for this project as deemed necessary. All sediment control measures shall be installed and maintained in accordance with the Project Plans, Appendix C, and/or the New York State Standards and Specifications for Erosion and Sediment Control, November 2016.

See Sediment Erosion Control Details and Notes in Appendix C for erosion control practices to be used for this project, including installation instructions. Erosion control practice feasibility and locations will be determined in the field as construction progresses.

### **IX. STORMWATER ANALYSIS**

#### **A. Water Quantity Methodology**

Stormwater calculations were conducted using the United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) TR-20 method. A software program, HydroCAD 10.20-5c Stormwater Modeling System produced by HydroCAD Software Solutions LLC of Chocorua, New Hampshire, was used to perform the TR-20 calculations. The design storm is calculated as a 24-hour, 25-year, Type II

event having a rainfall intensity of 4.56” in Saratoga County, NY. The system is also evaluated under the 1-, 10- and 100-year storm events, having rainfall intensities of 2.24”, 3.72”, and 6.24”, respectively. Rainfall intensities are obtained from the Northeast Regional Climate Center (NRCC) and the Natural Resource Conservation Service (NRCS). These organizations collect and analyze modern rainfall data and provide downloadable rainfall data by county. Composite runoff coefficients and composite curve numbers were calculated based on standard SCS curve number tables for urban areas.

## **B. Existing Watershed Conditions**

The project’s existing watershed conditions are primarily comprised of two (2) distinct land uses: previously logged/disturbed area that was used for a staging area by New York State during the I-87 Exit 17 improvements and undeveloped areas include woodlands and grassed areas. Runoff generally flows from the site towards the existing low areas (wetlands) located throughout the site. Analysis of the existing conditions watershed resulted in identifying nine (9) distinct subcatchments, with common points of confluence, referred to herein as “Analysis Points.” These Analysis Points serve as the locations for which all existing and proposed peak discharge rates are based upon. Six (6) Analysis Points were identified. The total watershed analyzed is approximately 28.6 acres.

Composite curve numbers (CN) were developed for the Existing Conditions Watershed modeling by directly measuring the various surface coverages throughout the subcatchments, and assigning appropriate standard NRCS CN values based upon published tables. A summary of the existing peak discharge rates associated with each Analysis Point is provided in Table 1 at the end of this section.

## **Farmstand Area**

### **Subcatchment (1)**

### **Analysis Point-1**

Subcatchment-1 is located in the eastern portion of the Farmstand project site and drains to Analysis Point-1. Subcat-1 consists of mostly forested, grassed, with some residence and roadway areas consisting of HSG A and D soils. Runoff generally flows

in an easterly direction towards existing sediment trap 1ST. Runoff is then directed to sediment trap 2ST via swale 1R.

### **Subcatchment (2a)**

### **Analysis Point-1**

Subcatchment-2a is located east of Subcatchment-1 and drains to Analysis Point-1. Subcat-2a consists of mostly grassed areas consisting of HSG C & D soils. Runoff generally flows in a northeasterly direction towards sediment trap 2ST via swale 1R.

### **Subcatchment (2b)**

### **Analysis Point-1**

Subcatchment-2b is located east of Subcatchment-2a and drains to Analysis Point-1. Subcat-2b consists of mostly grassed and gravel areas consisting of HSG C & D soils. Runoff generally flows in a northeasterly direction towards sediment trap 2ST.

### **Subcatchment (3)**

### **Analysis Point-2**

Subcatchment-3 is located south of Subcatchment-2b and drains to Analysis Point-2. Subcat-3 consists of mostly grassed and gravel areas consisting of HSG D soils. Runoff generally flows in an easterly direction towards Analysis Point-2.

## **Greenhouse Area**

### **Subcatchment (4a)**

### **Analysis Point-3**

Subcatchment-4a is located in the north portion of the Greenhouse project site and drains to Analysis Point-3. Subcat-4a consists of forested, grassed, bare soil, paved, and gravel areas consisting of HSG A & D soils. Runoff generally flows in a southeasterly direction towards sediment trap 3ST and eventually into sediment trap 4ST.



**Subcatchment (4b)****Analysis Point-3**

Subcatchment-4b is located south of subcatchment 4a and drains to Analysis Point-3. Subcat-4b consists of forested and grassed areas consisting of HSG D soils. Runoff generally flows in a southeasterly direction towards sediment trap 4ST.

**Subcatchment (5)****Analysis Point-4**

Subcatchment-5 is located southeast of subcatchment 4b and drains to Analysis Point-4. Subcat-5 consists of forested, grassed, and bare soil areas consisting of HSG A & D soils. Runoff generally flows in a southeasterly direction towards sediment trap 5ST.

**Subcatchment (6)****Analysis Point-5**

Subcatchment-6 is located west of subcatchment 7 and drains to Analysis Point-5. Subcat-6 consists of grassed areas consisting of HSG D soils. Runoff generally flows in a southeasterly direction towards Analysis Point-5.

**Subcatchment (7)****Analysis Point-6**

Subcatchment-7 is located east of subcatchment 6 and drains to Analysis Point-6. Subcat-7 consists of wood, grassed, and bare soil areas consisting of HSG A & D soils. Runoff generally flows in a southeasterly direction towards Analysis Point-6.

Calculated existing peak discharge rates are summarized below in Table 1.

**Table 1**  
Existing Peak Runoff Rates

| Analysis Point | 24-Hour Storm Event |            |            |             |
|----------------|---------------------|------------|------------|-------------|
|                | 1-Yr Rate           | 10-Yr Rate | 25-Yr Rate | 100-Yr Rate |
| AP-1           | 0.00                | 0.62       | 3.25       | 9.61        |
| AP-2           | 0.10                | 0.27       | 0.37       | 0.58        |
| AP-3           | 1.77                | 5.52       | 9.22       | 12.22       |
| AP-4           | 0.00                | 0.00       | 0.00       | 0.00        |
| AP-5           | 0.33                | 0.99       | 1.41       | 2.30        |
| AP-6           | 1.01                | 5.13       | 8.15       | 14.93       |

\*Rates are reported in cubic feet per second (ft<sup>3</sup>/s).

### C. Proposed Conditions

The project's proposed watershed conditions are primarily comprised of three (3) distinct land uses: greenhouse development area, farmstand development area and undeveloped areas including woodlands and grassed areas. Runoff generally flows south from the site towards the proposed stormwater treatment practices. Analysis of the proposed conditions watershed resulted in identifying thirteen (13) distinct subcatchments, with common points of confluence, referred to herein as "Analysis Points." These Analysis Points serve as the locations for which all existing and proposed peak discharge rates are based upon. Six (6) Analysis Points were identified. The total watershed analyzed is approximately 28.6 acres.

Composite curve numbers (CN) were developed for the Proposed Conditions Watershed modeling by directly measuring the various surface coverages throughout the subcatchments, and assigning appropriate standard NRCS CN values based upon published tables. A summary of the proposed peak discharge rates associated with each Analysis Point is provided in Table 2 at the end of this section.

### Farmstand Area

#### Subcatchment (1)

#### Analysis Point-1

Subcatchment-1 is located in the eastern portion of the Farmstand project site and drains to Analysis Point-1. Subcat-1 consists of mostly forested, grassed, with some

residence and roadway areas consisting of HSG A and D soils. Runoff generally flows in an easterly direction towards existing sediment trap 1ST. Runoff is then directed to sediment trap 2ST via swale 1R.

**Subcatchment (2a)** **Analysis Point-1**

Subcatchment-2a is located east of Subcatchment-1 and drains to Analysis Point-1. Subcat-2a consists of grassed and paved areas of HSG C & D soils. Runoff generally flows in a northeasterly direction towards RRv swale 2R and into stormwater pond 3P. Discharge from stormwater pond 3P then enters sediment trap 2P.

**Subcatchment (2b)** **Analysis Point-1**

Subcatchment-2b is located east of Subcatchment-1 and drains to Analysis Point-1. Subcat-2b consists of mostly grassed and gravel areas consisting of HSG C & D soils. Runoff generally flows in an easterly direction towards sediment trap 2ST via swale 1R.

**Subcatchment (2c)** **Analysis Point-1**

Subcatchment-2c is located south of Subcatchment-2b and drains to Analysis Point-1. Subcat-2c consists of mostly grassed and paved areas consisting of HSG C & D soils. Runoff generally flows in a northeasterly direction towards RRv swale 3R and into stormwater pond 3P. Discharge from stormwater pond 3P then enters sediment trap 2P.

**Subcatchment (2d)** **Analysis Point-1**

Subcatchment-2d is located southeast of Subcatchment-2c and drains to Analysis Point-1. Subcat-2d consists of mostly grassed and gravel areas consisting of HSG C & D soils. Runoff generally flows in a northeasterly direction towards sediment trap 2ST.

**Subcatchment (2e)** **Analysis Point-1**

Subcatchment-2e is located south of Subcatchment-2c and drains to Analysis Point-1. Subcat-2e consists of mostly grassed and paved areas consisting of HSG D soils.

Runoff generally flows in a easterly direction towards RRv swale 5R and eventually into stormwater pond 3P via swale 3R. Discharge from stormwater pond 3P then enters sediment trap 2P.

**Subcatchment (3)** **Analysis Point-2**

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Subcatchment-3 is located south of Subcatchment-2e and drains to Analysis Point-2. Subcat-3 consists of mostly grassed and gravel areas consisting of HSG D soils. Runoff generally flows in an easterly direction towards Analysis Point-2.

**Greenhouse Area**

**Subcatchment (4a)** **Analysis Point-3**

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Subcatchment-4a is located in the north portion of the Greenhouse project site and drains to Analysis Point-3. Subcat-4a consists of forested, grassed, bare soil, and paved areas consisting of HSG A & D soils. Runoff generally flows in a southeasterly direction towards RRv swale R11 and into stormwater pond 4P.

**Subcatchment (4b)** **Analysis Point-3**

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Subcatchment-4b is located south of subcatchment 4a and drains to Analysis Point-3. Subcat-4b consists of wooded and grassed areas consisting of HSG D soils. Runoff generally flows in a southeasterly direction towards Analysis Point-3.

**Subcatchment (5a & 5b)** **Analysis Point-5**

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Subcatchments-5a & 5b are located southeast of subcatchment 4a and drain to Analysis Point-4. Subcat-5a & 5b consist of wooded, grassed, paved and bare soil areas consisting of HSG A & D soils. Runoff generally flows in a southeasterly direction towards RRv swales R7 and R8 and into infiltration basin 5P.

**Subcatchment (6)****Analysis Point-5**

Subcatchment-6 is located west of subcatchment 7 and drains to Analysis Point-5. Subcat-6 consists of grassed, paved and bare soil areas consisting primarily of HSG D soils. Runoff generally flows in a southeasterly direction towards RRv swale R9 and into stormwater pond 6P.

**Subcatchment (7)****Analysis Point-6**

Subcatchment-7 is located east of subcatchment 6 and drains to Analysis Point-6. Subcat-7 consists of grassed areas consisting of HSG A & D soils. Runoff generally flows in a southeasterly direction towards Analysis Piont-6.

Calculated proposed peak discharge rates are summarized below in Table 2.

**Table 2**  
Proposed Peak Runoff Rates

| Analysis Point | 24-Hour Storm Event |            |            |             |
|----------------|---------------------|------------|------------|-------------|
|                | 1-Yr Rate           | 10-Yr Rate | 25-Yr Rate | 100-Yr Rate |
| AP-1           | 0.01                | 0.54       | 2.26       | 9.04        |
| AP-2           | 0.04                | 0.10       | 0.14       | 0.21        |
| AP-3           | 0.18                | 0.52       | 2.00       | 7.72        |
| AP-4           | 0.00                | 0.00       | 0.00       | 0.00        |
| AP-5           | 0.09                | 0.64       | 0.88       | 2.30        |
| AP-6           | 0.00                | 0.34       | 1.28       | 4.49        |

\*Rates are reported in cubic feet per second (ft<sup>3</sup>/s).

**D. Proposed Water Quality and Detention Measures**

The water quality and detention practices have been sized adequately to receive flows from the one-, ten-, twenty-five, and one-hundred-year storms. Detailed calculations are included in Appendix E. See Sheets C-200-201, C-702, and C-705-707 for pond grading and stormwater details.

The peak elevations and storage volumes for the proposed structures are summarized in Table 3 below.

**Table 3  
Proposed Stormwater Structures**

| <b>Proposed Stormwater Structures</b>                 |           |         |           |         |           |         |           |         |
|---|-----------|---------|-----------|---------|-----------|---------|-----------|---------|
| Structure   | 1-yr      |         | 10-yr     |         | 25-yr     |         | 100-yr    |         |
|   | Elevation | Storage | Elevation | Storage | Elevation | Storage | Elevation | Storage |
| WQv Pond 3P<br>Top of Storage<br>(312.95)             | 311.02    | 4,468   | 311.47    | 6,183   | 311.73    | 7,269   | 311.95    | 8,256   |
| WQv Pond 4P<br>Top of Storage<br>(339.75)             | 337.20    | 1,753   | 338.25    | 4,548   | 338.58    | 5,697   | 338.72    | 6,223   |
| Bioretention Area<br>5P<br>Top of Storage<br>(331.75) | 326.44    | 1,444   | 328.31    | 6,516   | 329.16    | 9,999   | 330.53    | 17,528  |
| WQv Pond 6P<br>Top of Storage<br>(332.75)             | 330.28    | 4,143   | 330.79    | 6,053   | 331.17    | 7,639   | 331.73    | 10,479  |

\*All elevations reported are in feet (ft), all storage volumes reported are in cubic-feet (cu ft)

**E. Pre/Post-Condition Analysis**

Table 4, below, is a summary of the existing and proposed peak rates of discharge from the project site.

**Table 4**  
**Pre/Post Comparison**  
**Peak Runoff Rates**

| Analysis Point |          | 24-Hour Storm Event |            |            |             |
|----------------|----------|---------------------|------------|------------|-------------|
|                |          | 1-Yr Rate           | 10-Yr Rate | 25-Yr Rate | 100-Yr Rate |
| AP-1           | Existing | 0.00                | 0.62       | 3.25       | 9.61        |
|                | Proposed | 0.01                | 0.54       | 2.26       | 9.04        |
| AP-2           | Existing | 0.10                | 0.27       | 0.37       | 0.58        |
|                | Proposed | 0.04                | 0.10       | 0.14       | 0.21        |
| AP-3           | Existing | 1.77                | 5.52       | 9.22       | 12.22       |
|                | Proposed | 0.18                | 0.52       | 2.00       | 7.72        |
| AP-4           | Existing | 0.00                | 0.00       | 0.00       | 0.00        |
|                | Proposed | 0.00                | 0.00       | 0.00       | 0.00        |
| AP-5           | Existing | 0.33                | 0.99       | 1.41       | 2.30        |
|                | Proposed | 0.09                | 0.64       | 0.88       | 2.30        |
| AP-6           | Existing | 1.01                | 5.13       | 8.15       | 14.93       |
|                | Proposed | 0.00                | 0.34       | 1.28       | 4.49        |

\*Rates are reported in cubic feet per second (ft<sup>3</sup>/s).

Calculations indicate the peak runoff rate will be reduced or maintained from all discharge points for the one, ten, twenty-five, and one hundred-year storm events.

Analysis Point AP-1 shows a 0.01 cfs increase in discharge. This is due to the need for a low flow orifice to maintain permanent pool elevation. There will need to be a discharge from this pond for a 1-yr event. A 0.00 cfs discharge cannot be avoided and the increase will have no detrimental impact to adjacent properties..

## **X. STORMWATER ANALYSIS CONCLUSION**

The following New York Stormwater sizing criteria have been met.

#### **A. Water Quality Requirement**

The required water quality volume for the project is provided in Standard Stormwater Practices. See Appendix F for proposed Water Quality Control Calculations and C-702 and C-705-707 for stormwater structure details.

#### **B. Runoff Reduction Volume (RRv) Requirement**

The minimum required Runoff Reduction Volume is provided in the proposed Vegetated Swales, cistern and infiltration basin. See Appendix F for proposed RRv Calculations and summary. See C-702 and C-705-707 for stormwater structure details.

#### **C. Channel Protection Requirement**

Ponds 3P and 6P provide over 24 hours of detention time for channel protection by the plug flow measure during the 1-year storm event.

Channel protection is not required for Pond 4P as the 1-year storm event runoff is less than 2.0 cfs.

Infiltration basin 5P meets Channel Protection requirements as the 1-yr storm event is infiltrated into the surrounding soils, there is no surface discharge from the infiltration basin.

#### **D. Overbank Flood Requirement**

The peak discharge rates for the 10-year storm event will be reduced or maintained from its predevelopment rates for all analysis points as illustrated in Table 4, Pre/Post Comparison Peak Runoff Rates.



## **E. Extreme Storm Requirement**

The peak discharge rates for the 100-year storm event will be reduced or maintained from its predevelopment rates for all analysis points as illustrated in Table 4, Pre/Post Comparison Peak Runoff Rates.

As a result of the proposed improvements, downstream storm facilities and properties will not be adversely impacted.

# **XI. POLLUTION PREVENTION PLAN IMPLEMENTATION**

## **A. Employee Training**

All employees on site will be aware of the stipulations of this stormwater pollution prevention report as it pertains to their everyday activities. All employees are required to be able to recognize potential problems and have the ability to provide either temporary or permanent stabilization measures, as appropriate, to mitigate stormwater runoff before problems occur.

## **B. Materials Inventory**

During construction, temporary structures, such as construction trailers, may be moved on site to store items such as paints, solvents, and gasoline pertinent to the continuation of construction activities. The intention of these structures is to shelter potential contaminants from stormwater and reduce the potential of toxic chemicals from entering the stormwater runoff due to construction activities.

Fuel for construction equipment shall either be obtained from a licensed distributor of petroleum products or from an approved aboveground storage tank on site. A distributor may be contracted to arrive on site periodically and fill all equipment as necessary. All distributors of petroleum products must have adequate liability insurance to mitigate and clean up any spills that occur on site as well as obtain appropriate permits and licenses from the NYSDEC.

Oil and other petroleum products may be stored on site in limited quantities to ensure the continued operation of construction equipment in the event a scheduled delivery is unavailable. Items will be stored in their original containers, within temporary structures, and will not be exposed to stormwater. Used oil and petroleum products will be stored in approved containers until recycled or disposed of at an approved disposal facility.

Fuel from construction vehicles may come into contact with stormwater when vehicles are stored outside. Good housekeeping and preventative maintenance procedures will be implemented to ensure fuel spills and leaks are minimized during refueling and storage. Any small-scale fuel or oil spills must be remedied immediately and contaminated soils will be disposed of appropriately. The designated spill prevention and response team shall handle large-scale fuel spills.

Paints may be stored on site to mark the location of utilities. All paints will be stored in original containers and disposed of when empty.

Construction waste and other trash will be removed from the site weekly.

Solvents and detergents may be stored on site that will be used for regular cleaning and maintenance of construction vehicles or temporary structures. After use, solvents will be disposed of in approved containers and removed from the site at scheduled intervals. Vehicle wash water that contains detergents will not be permitted on this site.

Temporary sanitary facilities may be located on site for construction workers. This facility shall be located in an accessible and visible location. Such a facility shall be leak and tip proof. A waste management company may be contracted to arrive on site and provide the routine pumping and sanitization of the facility. Such a company shall have adequate liability insurance to mitigate and clean up any spills which occur on site, as well as appropriate permits and licenses from the NYSDEC.

### **C. Site Inspections**

All employees on site will be aware of the stipulations of this stormwater pollution prevention report as it pertains to everyday construction activities. All employees will be able to recognize potential problems and have the ability to provide either temporary or

permanent stabilization measures, as appropriate, to mitigate any potential problems related to stormwater runoff before they occur.

The operator must have a qualified professional conduct an assessment of the site prior to the commencement of construction, and certify in an inspection report that the appropriate erosion and sediment controls described in this SWPPP and in the Contract Documents have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction. A qualified professional is defined as a Professional Engineer or Landscape Architect licensed to practice in New York State, or is a Certified Professional in Erosion and Sediment Control (CPESC).

**Once construction begins, regular inspection of construction activities by a qualified professional is required at least once every 7 days to ensure problems regarding chemical exposure, erosion and sedimentation are found before sedimentation occurs.**

It is the responsibility of the Pollution Prevention Team to continuously monitor construction activities to ensure the measures outlined in the report are being implemented. Additional inspections are necessary when construction in an area is complete, when construction in an area commences, or when there is a change of staff.

Areas which have not been fully stabilized, areas used for materials storage and all structural stormwater control measures, must be inspected once every seven calendar days to monitor erosion and assess the risk of sedimentation. Areas where construction vehicles frequently enter and exit the site will be inspected to ensure sediments are not being tracked off site, and that the roadways remain in good condition.

An example of the weekly SWPPP Inspection Form can be found in Appendix D of this report. Maintenance Inspection Checklists pertaining to stormwater structures may also be used during weekly construction activities inspections to assist in the site inspection process. These checklists can be found in Appendix D of this report.

Each month, a thorough site evaluation shall be performed to determine the continued applicability of the permit and assess the need to make any changes that have not

already been reflected in this Stormwater Pollution Prevention Plan. The Stormwater Pollution Prevention Plan will be reviewed to evaluate its overall effectiveness in preventing sediment-laden stormwater runoff. Temporary and permanent stabilization methods will be assessed and new methods will be established should any method be determined to be inadequate. A consultant may be retained to review this plan and the implementation of this plan on site as well as make any revisions or suggestions necessary to ensure the Stormwater Pollution Prevention Plan is performing optimally. A SWPPP Revision Form is to be used to document SWPPP changes. See Appendix D..

The operator must maintain a record of all inspection reports in a site log book. The site log book must be maintained on site and be made available to the permitting authority upon request.

#### **D. Pre- and Post-Construction Maintenance Requirements**

Maintenance will be necessary to ensure the structural stabilization measures and other components of the stormwater system remain optimally functional and continue to reduce the risk of sediment loading of surface water bodies.

During construction, maintenance of the stabilization measures shall be the responsibility of the General Contractor or appropriate subcontractors.

Silt fences/silt socks must be inspected regularly to ensure that they are still effective and their capability to reduce stormwater runoff has not been reduced due to prolonged sun exposure.

Stormwater conveyance structures shall be cleaned out periodically to prevent the collection of sediment that will reduce the maximum flow. Silt fencing, or other approved measures, will be used to prevent sediment entering swales, pipes, grates or the inlets of stormwater structures. Sediment must be removed from structures or traps. Sediments removed from erosion control practices and stormwater structures may be used as fill on site during maintenance activities. The remaining sediment may be removed from the site.

When construction is complete, Shangri-La Real Estate Holdings shall assume responsibility for maintaining all proposed stormwater structures. The contact regarding maintenance of the stormwater systems is:

**Shangri-La Real Estate Holdings, LLC  
Contact: Orson Klender  
10 Licardo Lane  
Saratoga Springs, New York 12866**

Maintenance Inspection Checklists pertaining to stormwater structures can be found in Appendix D of this report.

**Maintenance intervals are outlined on the checklists.**

**In general, inspections should be conducted yearly to ensure the stormwater systems are operating optimally.**

Should staff or individuals be unavailable, both during and after construction, to inspect and maintain the stabilization measures described in this report, a firm shall be contracted to perform this maintenance.

In addition to maintenance inspections, the owner must post signs for all post-construction stormwater practices in the immediate vicinity of the practice. The sign must be conspicuous, legible, and not less than 18 inches by 24 inches bearing the following information:

**STORMWATER MANAGEMENT PRACTICE – *(name of practice)***

**Project Identification – *(SPDES Construction Permit #)***

**Must be Maintained in Accordance with Operation and Maintenance Plan**

**DO NOT REMOVE OR ALTER**

## **E. Progress Reports**

Progress reports will be completed by the General Contractor and all subcontractors weekly to document any conditions which may affect adherence to the construction schedule and may ultimately result in changes to the Stormwater Pollution Prevention Plan.

Each progress report must contain the project, date, weather conditions and a brief description of progress made throughout the week, including the use of temporary and permanent stabilization measures on all exposed soils.

The progress reports will be filed with this Stormwater Pollution Prevention Plan on site until final stabilization is complete. The progress reports will be retained for a minimum period of three years following final stabilization. A sample SWPPP Weekly Progress Report is included in Appendix D of this report.

## **F. Permit Coverage Termination**

Upon achieving final stabilization, the General Contractor must perform a final walkthrough of the site prior to demobilization. The General Contractor will verify that all disturbed surfaces have been stabilized and all soil restoration practices have been completed in accordance with this SWPPP and the SPDES General Permit.

After completing the final walkthrough, a Notice of Termination (NOT) form must be submitted by the Owner to the NYSDEC Division of Water in order to terminate the permit coverage.

This SWPPP and all associated forms prepared in conjunction with this SWPPP must be retained for a period of five (5) years from the date that the New York State Department of Environmental Conservation receives a complete Notice of Termination.

## **APPENDIX A**

### **NOTICE OF INTENT**

Printed Copy of the e-Filed NOI to be inserted once NOI is submitted.  
NOI will be submitted upon project approval.

**APPENDIX B**

**CONTRACTOR / SUBCONTRACTOR PERMIT CERTIFICATION**



# Contractor / Subcontractor SPDES Permit Certification

Project: \_\_\_\_\_

Town, Village, City: \_\_\_\_\_

County: \_\_\_\_\_

Check Applicable Box:            Prime Contractor             Subcontractor

Name of Contractor: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Mandatory Certification:** The SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-20-001) requires the Prime Contractor (and subcontractors) to certify they understand the Stormwater Pollution Prevention Plan (SWPPP), the General Permit conditions, and their responsibilities for compliance. The certification must be signed prior to performing any contract work. The certification shall be signed by an Owner, Principal, President, Secretary or Treasurer of the firm.

*"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"*

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_

The SPDES General Permit also requires the Prime Contractor to identify at least one trained individual who will be responsible for implementing the SWPPP and who shall be on-site on a daily basis when soil disturbance activities are being performed. (Prior training is not required if the trained individual is a licensed Professional Engineer, licensed Landscape Architect, or CPESC.) Provide the name and title of the trained individual who will be on-site and responsible for SWPPP implementation on this Contract:

Name/Title of Trained Individual: \_\_\_\_\_

Name of Training Course: \_\_\_\_\_

Training Provider: \_\_\_\_\_

Date of Training: \_\_\_\_\_

**APPENDIX C**

**DRAWINGS**

# Shangri-La Greenhouses and Farmstand

Town of Moreau  
Saratoga County, New York

10-07-2024  
Revised: 12-16-2024

PREPARED FOR:

Contact: Orson Klender  
Shangri-La Real Estate Holdings  
10 Licardo Lane  
Saratoga Spring, New York 12831  
Phone: 518.588-2319

PROGRESS PRINT  
NOT FOR CONSTRUCTION

LEAD CONSULTANT:



LANDSCAPE ARCHITECTURE ENGINEERING PLANNING, PC

*Designs that Build*

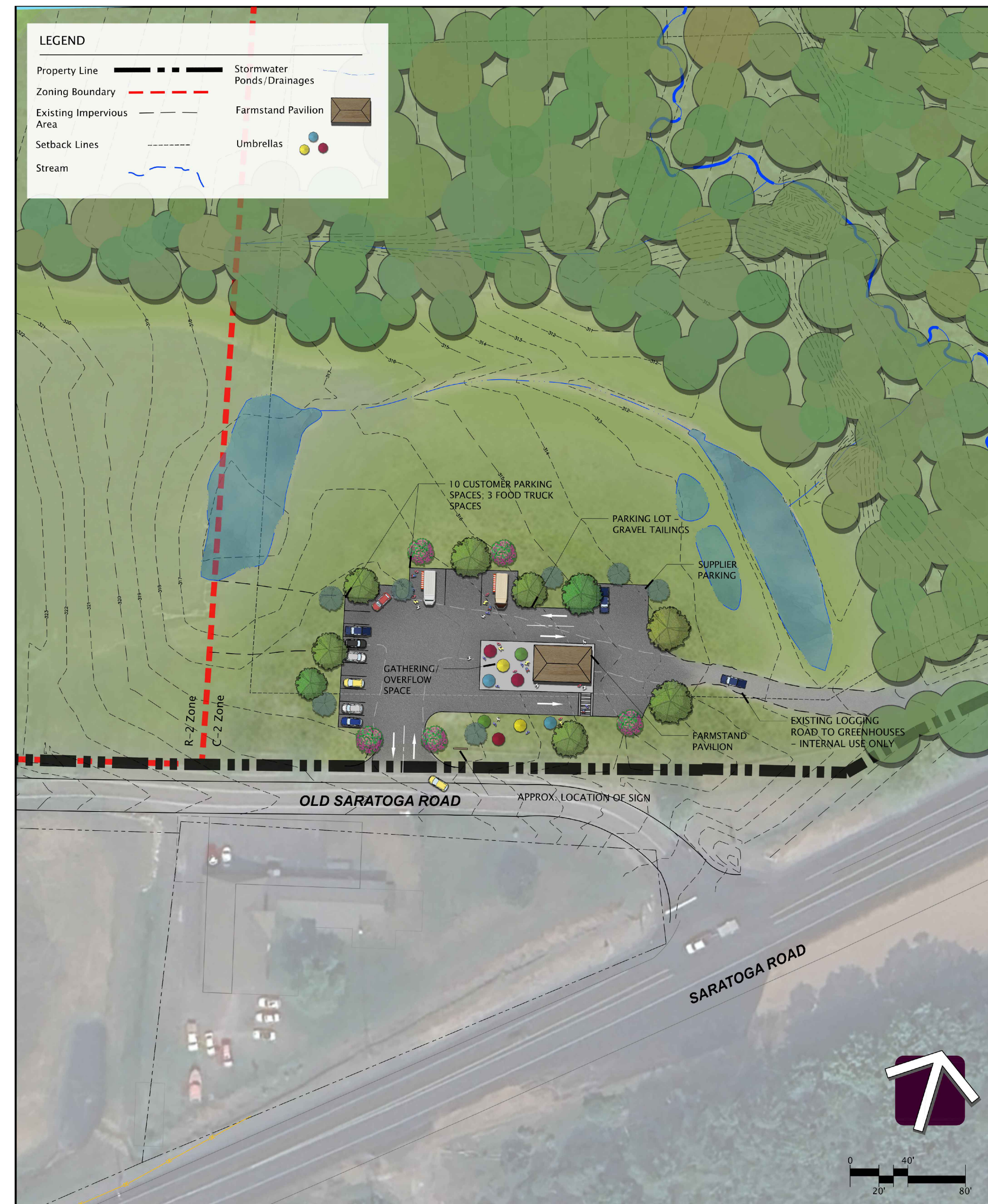
58 Church Street, Suite 200  
Saratoga Springs, New York 12286  
Phone: 518.584.8661  
Fax: 518.584.8651  
Contact: Peter Loyola, RLA, ASLA

SURVEYOR:

INGALLS AND ASSOCIATES, LLP  
2603 Guilderland Avenue  
Schenectady, New York 12306  
Phone: 518.393.7725

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| 19       | ---         | Septic Plan & Details               |



LIC. NO.  
CLA SITE, PC

LIC. NO.  
CLA SITE, PC

## GENERAL & LAYOUT NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON.
- THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THESE PLANS HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES TAKING PLACE.
- THE CONTRACTOR SHALL NOTIFY DIG SAFELY NEW YORK (800-962-7962) FOR A UTILITY STAKE-OUT THREE (3) WORKING DAYS PRIOR TO ANY EXCAVATION, DRILLING, OR BLASTING.
- WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE CASE OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING, DETAIL, OR SPECIFICATION THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
- ALL DIMENSIONS TO FACE OF CURB OR BUILDING ARE AT 90° FROM FACE UNLESS OTHERWISE NOTED.
- SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS. NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITH THIS PLAN SET.
- ALL WORK SHALL CONFORM WITH THE REQUIREMENTS OF FEDERAL TITLE 29, PART 1929, "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" (OSHA).
- THE CONTRACTOR SHALL CONSULT THE DESIGN LANDSCAPE ARCHITECT BEFORE DEVIATING FROM THESE PLANS.
- IF SUSPICIOUS, CONTAMINATED OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES ALL WORK SHALL STOP AND THE TOWN OF MOREAU AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE OWNER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE MATERIAL AND THE PLANS ARE MODIFIED AS NECESSARY.
- THE CONTRACTOR SHALL TAKE PRECAUTIONS TO MAINTAIN A MINIMUM OF TWO (2) FEET OF COVER OVER ALL EXISTING UTILITIES DURING CONSTRUCTION.
- ALL AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECT'S CONSTRUCTION AND WHICH ARE OUTSIDE OF THE PROJECT LIMITS SHALL BE RESTORED, AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE OWNER OR THE OWNER'S REPRESENTATIVE.
- ALL WORK MUST CONFORM TO ALL FEDERAL, STATE AND MUNICIPAL CODES, SPECIFICATIONS, ORDINANCES, RULES AND REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC PROTECTION AND MAINTENANCE, INCLUDING ADEQUATE USE OF SIGNS, BARRIERS, AND FLAG PERSONS DURING WORKING AND NON-WORKING HOURS UNTIL CONSTRUCTION IS COMPLETED.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK WITHIN ANY RIGHT-OF-WAY WITH THE APPROPRIATE COUNTY OR STATE AGENCIES.
- CONTRACTOR SHALL REPLACE IN KIND ALL PAVEMENT STRIPING DISTURBED AS A RESULT OF CONSTRUCTION.

## UTILITY NOTES

- RIMS, GRATES, INVERTS, CLEARANCES AND LOCATION AT CROSSINGS MUST BE VERIFIED PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES MUST BE BROUGHT TO THE ENGINEER'S ATTENTION.
- ALL CONSTRUCTION STAKE OUT SHALL BE COORDINATED WITH CLA SITE.
- THE CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE EXISTING UTILITIES. ANY DAMAGED UTILITIES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- ALL UTILITY LOCATIONS, EXISTING SEWERS, WATER, TELEPHONE, GAS, ETC. MUST BE LOCATED PRIOR TO ANY CONSTRUCTION. ELEVATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION.

## SOIL EROSION PREVENTION AND SEDIMENT CONTROL

- IF CONSTRUCTION ACTIVITIES ARE DISCONTINUED, TEMPORARY GRADING SHALL BE SEEDED AND MULCHED, A.O.B.E. THE AREAS SHALL BE SEEDED WITH AN APPROPRIATE PERENNIAL GRASS SEED MIX, A.O.B.E., AND SHALL BE MULCHED WITH STRAW WITHIN 14 DAYS OF THE TIME CONSTRUCTION ACTIVITIES WERE TEMPORARILY DISCONTINUED. MULCH SHALL BE MAINTAINED UNTIL A SUITABLE VEGETATIVE COVER IS ESTABLISHED.
- WHEN FINAL GRADING IS COMPLETE THE CONTRACTOR SHALL COMPLETE THE WORK OF SEEDING AND PLANTING WITHIN ONE WEEK OR OTHERWISE STABILIZE THE AREA IF THE SEASON IS NOT APPROPRIATE FOR SEED ESTABLISHMENT. IN THE EVENT SEED AND PLANTING ESTABLISHMENT CAN NOT BE COMPLETED THE CONTRACTOR SHALL STABILIZE THE AREA WITHIN ONE WEEK OF COMPLETING THE FINAL GRADING, WITH STRAW MULCH, OR OTHER APPROVED OR SPECIFIED MEANS UNTIL TURF ESTABLISHMENT CAN BE DONE.
- PERIODIC CLEANING OF TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES MAY BE NECESSARY.
- ALL SOIL AND EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO STARTING EARTHWORK OPERATIONS AND SHALL REMAIN IN PLACE UNTIL SLOPES ARE STABILIZED WITH SEEDING AND/OR OTHER SLOPE PROTECTION.
- SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE USED AS NECESSARY AND THEY SHALL REMAIN IN PLACE UNTIL THE NEW SLOPES HAVE BEEN STABILIZED BY EITHER SEEDING OR SLOPE PROTECTION.
- SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE USED FOR ALL INLETS. CONTROLS SHALL REMAIN IN PLACE UNTIL THE SLOPES DRAINING TO THE INLET HAVE BEEN STABILIZED BY EITHER PAVING, SEEDING, OR SLOPE PROTECTION.
- IN THE EVENT DE-WATERING OPERATIONS BECOME NECESSARY, A DE-WATERING DISCHARGE BASIN WILL BE REQUIRED UNLESS THE PUMP DISCHARGE IS CLEAR AND FREE OF SEDIMENT. LOCATION AND DESIGN TO BE APPROVED BY THE LANDSCAPE ARCHITECT.
- RING ANY TEMPORARY STOCKPILES OF ERODIBLE MATERIAL WITH STRAW BALES/SILT FENCE, AS SHOWN, TO CONTAIN ANY EROSION OF THE PILE. PILES LEFT UNDISTURBED FOR 14 DAYS OR MORE SHALL BE STABILIZED WITH A TEMPORARY SEEDING OR OTHER COVER.
- ALL ERODED SOIL SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERCOURSES.
- TEMPORARY EROSION CONTROL SHALL BE PROVIDED FOR ALL DISTURBED AREAS IN ACCORDANCE WITH THE "NEW YORK GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL." THE TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY UNTIL PERMANENT CONTROL MEASURES ARE IN SERVICE. INFILTRATION DEVICES SHALL BE PROTECTED FROM SILTATION DURING THE PERIOD OF CONSTRUCTION AND UNTIL THE SITE IS SUCCESSFULLY REVEGETATED BY USE OF SILT SCREENS, INLET PROTECTION DEVICES, SEDIMENT DETENTION PONDS OR OTHER SUITABLE EROSION CONTROL MEASURES.
- STAGING OF CONSTRUCTION TO FACILITATE EROSION CONTROL SHALL BE REQUIRED. ONLY THOSE AREAS WHERE CONSTRUCTION IS ACTIVELY OCCURRING SHALL REMAIN OPEN AND UNVEGETATED. ALL AREAS THAT ARE NOT

WITHIN AN ACTIVE CONSTRUCTION AREA SHALL BE MULCHED AND STABILIZED OR SHALL BE MULCHED AND REVEGETATED. AN ACTIVE CONSTRUCTION AREA IS DEFINED AS ONE THAT HAS BEEN SUBSTANTIAL CONSTRUCTION WITHIN THE PAST SEVEN CALENDAR DAYS. MULCHING OR REVEGETATION FOR EROSION CONTROL SHALL BE COMPLETED WITHIN 10 DAYS FOLLOWING THE LAST SUBSTANTIAL CONSTRUCTION ACTIVITY.

COMPLIANCE WITH THE FOLLOWING RESTRICTIONS SHALL BE REQUIRED.

- NO VEGETATION SHALL BE FELLED INTO ANY LAKE, POND, RIVER, STREAM OR INTERMITTENT STREAM AND IF INADVERTENTLY FELLED INTO ONE OF THESE WATER BODIES, SHALL BE REMOVED IMMEDIATELY FROM THE WATER BODY. THE REMOVAL OF DEAD OR DYING, DISEASED TREES OR TREES PRESENTING A HEALTH OR SAFETY HAZARD SHALL NOT BE EXEMPT FROM THIS REQUIREMENT.
- WITHIN 500 FEET OF THE MEAN HIGH WATER MARK OF ANY LAKE, POND, RIVER, STREAM, OR WETLAND, NO LAND AREA, INCLUDING AREAS STOCKPILED WITH EARTHEN MATERIALS, WHICH HAS BEEN CLEARED MAY BE MADE OR LEFT DEVOID OF GROWING VEGETATION FOR MORE THAN 24 HOURS WITHOUT A PROTECTIVE COVERING SECURELY PLACED OVER THE ENTIRE AREA AND/OR EROSION CONTROL MEASURES PROPERLY INSTALLED TO PREVENT SEDIMENTS FROM ENTERING THE WATER BODY. ACCEPTABLE PROTECTIVE COVERINGS INCLUDE NATURAL MULCH OF A DEPTH OF TWO INCHES, ROCK RIP-RAP, NONDEGRADABLE MATERIALS SUCH AS PLASTIC OR CANVAS COVERINGS, AND IMPERVIOUS STRUCTURES.
- ANY AREA OF LAND FROM WHICH THE NATURAL VEGETATIVE COVER HAS BEEN EITHER PARTIALLY OR WHOLLY CLEARED OR REMOVED BY DEVELOPMENT ACTIVITIES SHALL BE REVEGETATED WITHIN 10 DAYS FROM THE SUBSTANTIAL COMPLETION OF SUCH CLEARING AND CONSTRUCTION. ACCEPTABLE REVEGETATION SHALL CONSIST OF THE FOLLOWING:
  - RESEEDING WITH AN ANNUAL OR PERENNIAL COVER CROP ACCOMPANIED BY PLACEMENT OF STRAW MULCH OR ITS EQUIVALENT OF SUFFICIENT COVERAGE, BUT NOT LESS THAN 50% OF THE TOTAL DISTURBED AREA, TO CONTROL EROSION UNTIL SUCH TIME AS THE COVER CROP IS ESTABLISHED OVER 90% OF THE SEEDED AREA.
  - REPLANTING WITH NATIVE WOODY AND HERBACEOUS VEGETATION ACCOMPANIED BY PLACEMENT OF STRAW MULCH OR ITS EQUIVALENT OF SUFFICIENT COVERAGE TO CONTROL EROSION UNTIL THE PLANTINGS ARE ESTABLISHED AND ARE CAPABLE OF CONTROLLING EROSION.
  - ANY OTHER RECOGNIZED METHOD WHICH HAS BEEN REVIEWED AND APPROVED BY THE TOWN AS SATISFYING THE INTENT OF THIS REQUIREMENT.
- ANY AREA OF REVEGETATION MUST EXHIBIT SURVIVAL OF A MINIMUM OF 75% OF THE COVER CROP THROUGHOUT THE YEAR IMMEDIATELY FOLLOWING REVEGETATION. REVEGETATION MUST BE REPEATED IN SUCCESSIVE YEARS UNTIL THE MINIMUM SEVENTY-FIVE-PERCENT SURVIVAL FOR ONE YEAR IS ACHIEVED.
- GROUND CLEARING OR GRADING ACTIVITIES WHICH OCCUR DURING THE PERIOD OCTOBER 15 TO APRIL 15, DURING WHICH GERMINATION OF VEGETATION TYPICALLY WILL NOT TAKE PLACE, SHALL BE REQUIRED TO INCORPORATE EXTRA MEASURES DURING REVEGETATION IN ORDER TO REDUCE EROSION AND MAINTAIN WATER QUALITY. THESE EXTRA MEASURES INCLUDE, BUT ARE NOT LIMITED TO, THE USE OF SCREEN MESH, NETTING, EXTRA MULCH, AND SILTATION FENCES.

## DEMOLITION NOTES

- CONTRACTOR SHALL VISIT THE SITE TO OBSERVE ALL EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID DOCUMENTS.
- PRIOR TO COMMENCING WORK THE CONTRACTOR SHALL VERIFY AND STAKE THE LOCATIONS OF ALL UNDERGROUND UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO UTILIZE A LOCATING SERVICE TO VERIFY UNDERGROUND UTILITY LOCATIONS.
- CONTRACTOR SHALL VERIFY THE FOLLOWING: FIELD MEASUREMENTS, FIELD CONSTRUCTION CRITERIA, CATALOGUE NUMBERS, AND SIMILAR DATA.
- CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL NECESSARY APPROVALS, PERMITS, INSPECTIONS AND CERTIFICATIONS PRIOR TO AND DURING THE COURSE OF CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE TO REPAIR OR REPLACE ALL ITEMS DAMAGED OUTSIDE OF CONSTRUCTION LIMITS, OR ANY ITEMS DISTURBED ON THE SITE WHICH ARE NOT PART OF THE IDENTIFIED WORK OF THIS CONTRACT. CONTRACTOR SHALL PROVIDE PROPER SIGNS, BARRICADES, FENCES, TO PROTECT THE WORK, PROPERTY, EQUIPMENT AND PERSONS FROM DAMAGE DURING ALL PHASES OF CONSTRUCTION.
- PROTECT ALL VEGETATION TO REMAIN DURING ALL PHASES OF CONSTRUCTION. DO NOT DRIVE VEHICLES, STORE EQUIPMENT, SPILL LIQUIDS OR STORE CHEMICALS BELOW THE CANOPIES OF EXISTING VEGETATION TO REMAIN. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ALL VEGETATION AND ROOTS OUTSIDE THE CONSTRUCTION LIMIT LINE AND WITHIN TREE PROTECTION AREAS
- CONTRACTOR SHALL STRIP, STORE, AND REUSE ALL TOPSOIL FROM AREAS TO BE PAVED OR REGRADED. PROVIDE SEDIMENT CONTROL FENCE AROUND BASE OF TOPSOIL STOCKPILE.
- IN AREAS WHERE PLANT MATERIAL IS PROPOSED ON AREAS OF EXISTING PAVEMENT, EXCAVATE EXISTING SOIL TO A DEPTH OF 30" AND REPLACE WITH APPROVED TOPSOIL, COORDINATE WITH PLANTING PLAN.
- ALL EXISTING MATERIAL TO BE SALVAGED SHALL BE VERIFIED BY THE OWNER'S REPRESENTATIVE AND REMOVED AND STORED BY CONTRACTOR IN A LOCATION COORDINATED WITH OWNER. CONTRACTOR SHALL COMPENSATE OWNER FOR ANY DAMAGE TO SALVAGED MATERIALS THAT OCCURS DURING REMOVAL, STORAGE OR REINSTALLATION.
- ALL EXISTING UTILITIES TO REMAIN, UNLESS OTHERWISE NOTED.
- AT PRE-CONSTRUCTION MEETING, CONTRACTOR TO COORDINATE WITH OWNER ANY PLANT MATERIAL TO BE SAVED AND/OR REPLANTED.
- COORDINATE WITH OWNER FOR LOCATION OF EXCESS CUT MATERIAL PLACEMENT.

## PLANTING/LANDSCAPING NOTES

- ALL PLANTS ARE TO MEET THE MINIMUM STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMAN.
- THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO AVOID DAMAGE TO ANY VEGETATION TO REMAIN.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND FIELD VERIFYING THE LOCATION OF ALL UTILITIES AND AVOIDING ALL UTILITIES TO REMAIN DURING THE CONSTRUCTION PROCESS.
- PLANTS SHALL BE DELIVERED ONLY WHEN THEY CAN BE INSTALLED IN A REASONABLE TIMEFRAME. ALL PLANTS ARE SUBJECT TO INSPECTION AT DELIVERY BY THE LANDSCAPE ARCHITECT.

- ALL PLANTING BEDS AND AREAS OF GROUND COVER SHALL BE STONE MULCHED TO A DEPTH OF 4".
- PLANTS SHALL BE THE SIZE (HEIGHT, DIAMETER, OR CALIPER) AND TYPE NOTED ON THE PLANTING SCHEDULE.
- THE LOCATION OF ALL PLANTING TO BE VERIFIED BY LANDSCAPE ARCHITECT.
- THE CONTRACTOR SHALL GUARANTEE ALL PLANTED MATERIALS' HEALTH, AS DETERMINED BY THE LANDSCAPE ARCHITECT, FOR A MINIMUM OF ONE (1) YEAR TIME.
- THE CONTRACTOR SHALL MAINTAIN ALL WORK INCLUDING WATERING AND PROTECTION FROM TRAFFIC UNTIL FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL ITEMS DAMAGED OUTSIDE CONSTRUCTION LIMITS OR DISTURBED ON SITE WHICH ARE NOT PART OF THE IDENTIFIED WORK OF THIS CONTRACT.
- ALL PLANTS AND SEED MIXTURES SHALL BE NATIVE SPECIES. NO INVASIVE SPECIES SHALL BE PERMITTED.

## PLANT BED PREPARATION

- IN AREAS WHERE PLANTING IS PROPOSED, AREA SHALL BE EXCAVATED TO A DEPTH OF 3" AND FILLED WITH SUITABLE BACKFILL/TOPSOIL AS DESCRIBED BELOW.
- PROVIDE TOPSOIL WHICH IS FERTILE, FRIABLE, NATURAL LOAM, SURFACE SOIL, FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS AND OTHER LITTER, AND FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIMENSION, AND OTHER EXTRANEIOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. TOPSOIL SHALL NOT BE DELIVERED TO THE SITE WHILE IN A FROZEN OR MUDDY CONDITION.
- OBTAIN TOPSOIL FROM LOCAL SOURCES. OBTAIN TOPSOIL ONLY FROM NATURALLY, WELL-DRAINED SITES WHERE TOPSOIL OCCURS IN DEPTH OF NOT LESS THAN 4"; DO NOT OBTAIN FROM BOGS OR MARSHES.
- TOPSOIL SHALL HAVE AN ACIDITY RANGE OF PH 5.0 TO 7.0, AND SHALL CONTAIN NOT LESS THAN 5% OR MORE THAN 8% ORGANIC MATTER AS DETERMINED BY LOSS ON IGNITION OF MOISTURE-FREE SAMPLES DRIED AT 100 C. SUFFICIENT LIMESTONE SHALL BE ADDED TO TOPSOIL, IF REQUIRED, TO BRING IT TO A RANGE OF PH 5.0 TO PH 7.0.
- TOPSOIL SHALL MEET THE FOLLOWING MECHANICAL ANALYSIS.

| SIEVE DESIGNATION | % PASSING |
|-------------------|-----------|
| 1" SCREEN         | 100       |
| 1/2 SCREEN        | 97/100    |
| 100 MESH SIEVE    | 60-40     |
- SOIL AMENDMENTS SHALL INCLUDE PEAT HUMUS: FS Q-P-166 DECOMPOSED PEAT WITH NO IDENTIFIABLE FIBERS AND WITH PH RANGE SUITABLE FOR INTENDED USE.
- ADDITIONAL AMENDMENTS TO INCLUDE A COMPLETE FERTILIZER OF NEUTRAL CHARACTER, APPROVED FOR USE ON ORGANIC FARMS, WITH SOME ELEMENTS DERIVED FROM ORGANIC SOURCES AND CONTAINING THE FOLLOWING PERCENTAGES OF AVAILABLE PLANT NUTRIENTS:
  - FOR TREES AND SHRUBS, PROVIDE FERTILIZER WITH NOT LESS THAN 5% TOTAL NITROGEN, 10% AVAILABLE PHOSPHORIC ACID AND 5% SOLUBLE POTASH.
- ALL PLANTING BED AREAS SHALL BE MULCHED TO A DEPTH OF 4".

## SEEDING NOTES:

- DISTURBED AREAS AROUND PROJECT SITE SHALL BE SEEDED WITH THE FOLLOWING MIXTURE AND APPLIED AT A RATE OF NOT LESS THAN 5 LBS /1000 SF. SEE STORMWATER POND DETAILS AND PLANTING PLAN FOR STORMWATER POND AND STEEP SLOPE SEEDING REQUIREMENTS.

| COMMON NAME        | WEIGHT (%) | MINIMUM PURITY (%) | MINIMUM (%) GERMINATION |
|--------------------|------------|--------------------|-------------------------|
| KENTUCKY BLUEGRASS | 65         | 98                 | 85                      |
| RED FESCUE         | 25         | 98                 | 80                      |
| PERENNIAL RYEGRASS | 10         | 98                 | 90                      |

## WINTER WORK EROSION & SEDIMENT CONTROLS:

WINTER WORK EROSION AND SEDIMENT CONTROLS

IF ONGOING CONSTRUCTION ACTIVITY OCCURS BETWEEN NOVEMBER 15 AND APRIL 1, THE CONTRACTOR SHALL IMPLEMENT TEMPORARY SOIL STABILIZATION MEASURES IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS TEMPORARILY CEASED. STABILIZATION MEASURES SHALL BE INITIATED BY THE END OF THE NEXT BUSINESS DAY AND COMPLETED WITHIN THREE (3) DAYS. IF STRAW MULCH IS USED ALONE, MULCH SHALL BE APPLIED AT 4 TONS PER ACRE. OTHER MANUFACTURED MULCHES SHALL BE APPLIED AT DOUBLE THE MANUFACTURER'S RECOMMENDED RATE. ROLLED EROSION CONTROL BLANKETS MUST BE USED ON ALL SLOPES 3 HORIZONTAL TO 1 VERTICAL OR STEEPER. THE CONTRACTOR SHALL ALSO IMPLEMENT THE MEASURES INDICATED IN THE NEW YORK STATE STANDARDS AND SPECIFICATION FOR WINTER STABILIZATION, DESIGN CRITERIA 1 THROUGH 7, 10 AND 11.

EROSION AND SEDIMENT CONTROLS FOR WINTER SHUTDOWN

IF THE SITE WILL NOT HAVE EARTH DISTURBING ACTIVITIES BETWEEN NOVEMBER 15 AND APRIL 1, THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING EROSION CONTROL MEASURES IN ANY AREAS WHERE FINAL/PERMANENT STABILIZATION HAS NOT BEEN COMPLETED:

ALL BARE EXPOSED SOIL RESULTING FROM CONSTRUCTION ACTIVITIES OR A NATURAL EVENT MUST BE STABILIZED BY ESTABLISHED VEGETATION, STRAW OR OTHER ACCEPTABLE MULCH, MATTING, ROCK, OR OTHER APPROVED MATERIAL SUCH AS ROLLED EROSION CONTROL PRODUCTS. IF STRAW BLANKET IS USED IT SHALL MEET THE REQUIREMENTS OF FHWA FP-03 AS A TYPE 2C EROSION CONTROL BLANKET SHALL FOR USE ON SLOPES WITH GRADIENTS NOT EXCEEDING 3:1 (H:V) OR AN EQUIVALENT APPROVED BY THE ENGINEER. WHERE WIND EXPOSURE OR CONCENTRATED RUNOFF MAY OCCUR, MULCH SHALL BE ANCHORED WITH DEGRADABLE STRAW BLANKET MEETING THE REQUIREMENTS OF FHWA FP-03 AS A TYPE 2D EROSION CONTROL BLANKET FOR USE ON SLOPES WITH GRADIENTS NOT EXCEEDING 2:1 (H:V) OR AN EQUIVALENT APPROVED BY THE ENGINEER.

WINTER STABILIZATION INSPECTION/MAINTENANCE

INSPECTIONS SHALL BE CONDUCTED IN ACCORDANCE WITH AND AT THE FREQUENCY SPECIFIED IN THE GENERAL PERMIT FOR CONSTRUCTION, PART IV C.2(C) & (D) TO ENSURE THAT THE EROSION AND SEDIMENT CONTROL PLAN IS PERFORMING ITS WINTER STABILIZATION FUNCTION.



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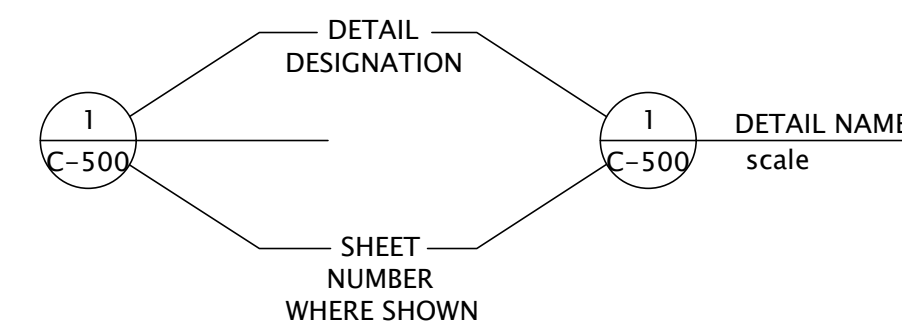
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## DETAIL DESIGNATION

ON DRAWING WITH  
DETAIL CALL-OUT:

ON DRAWING WHERE  
DETAIL IS SHOWN:



# Shangri-La Greenhouses and Farmstand Town of Moreau, Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
|      |          |       |
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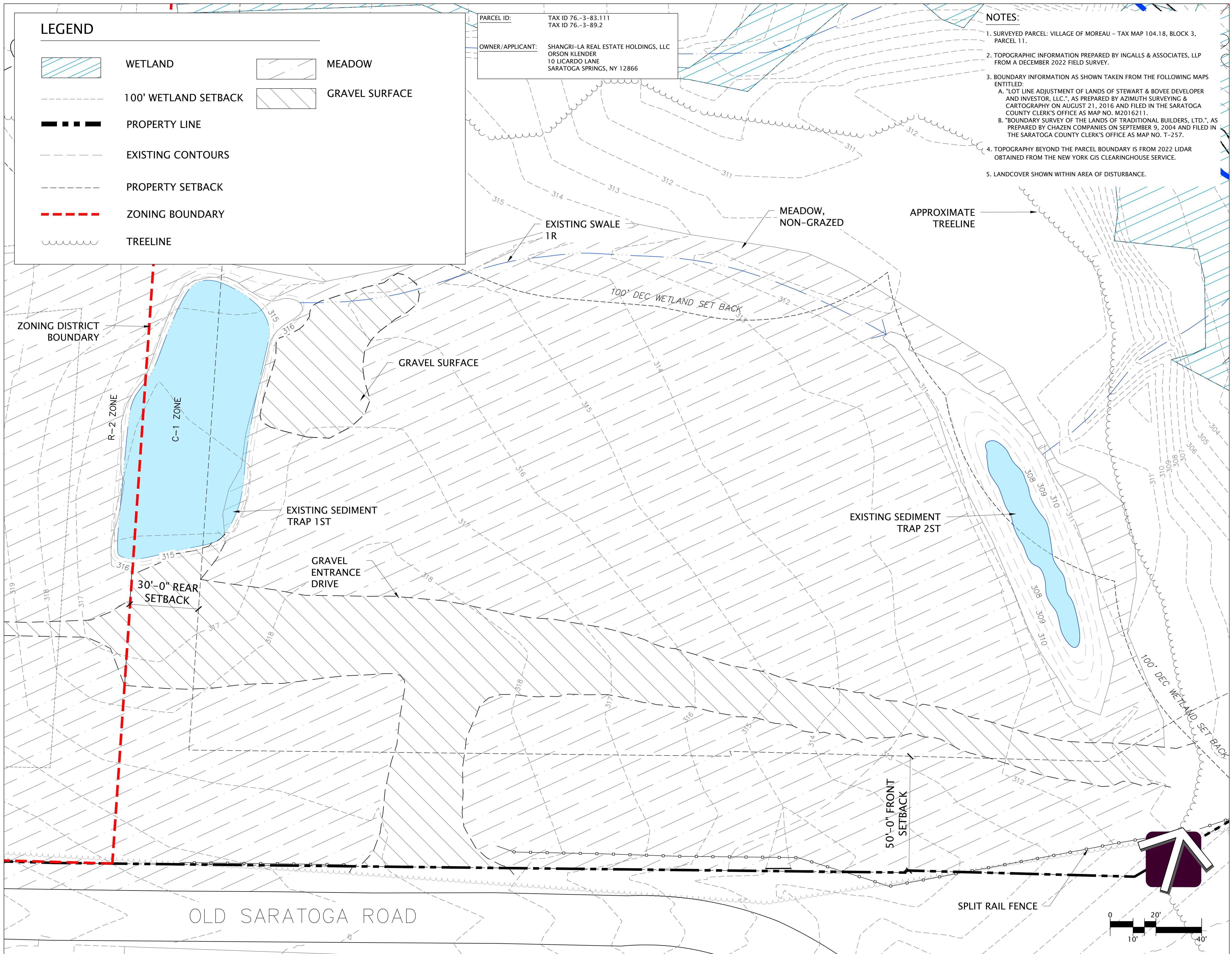
Drawn By: WD Checked By: PL

Project No. 420-1096

Date: 2024-12-16

Notes

C-001



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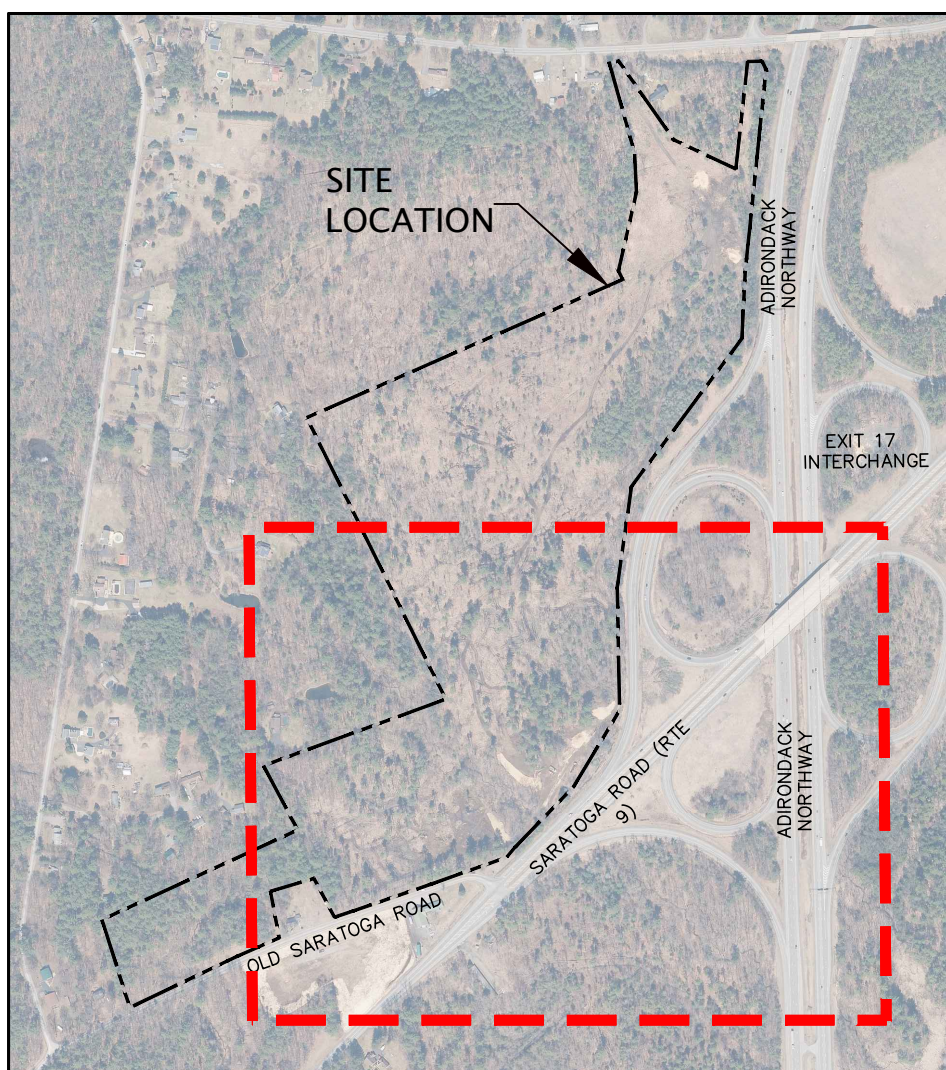
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**SITE LOCATION MAP**

SCALE: NOT TO SCALE



**Shangri-La  
Greenhouses and  
Farmstand**  
Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
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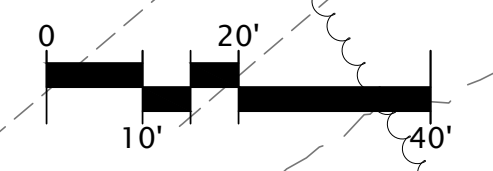
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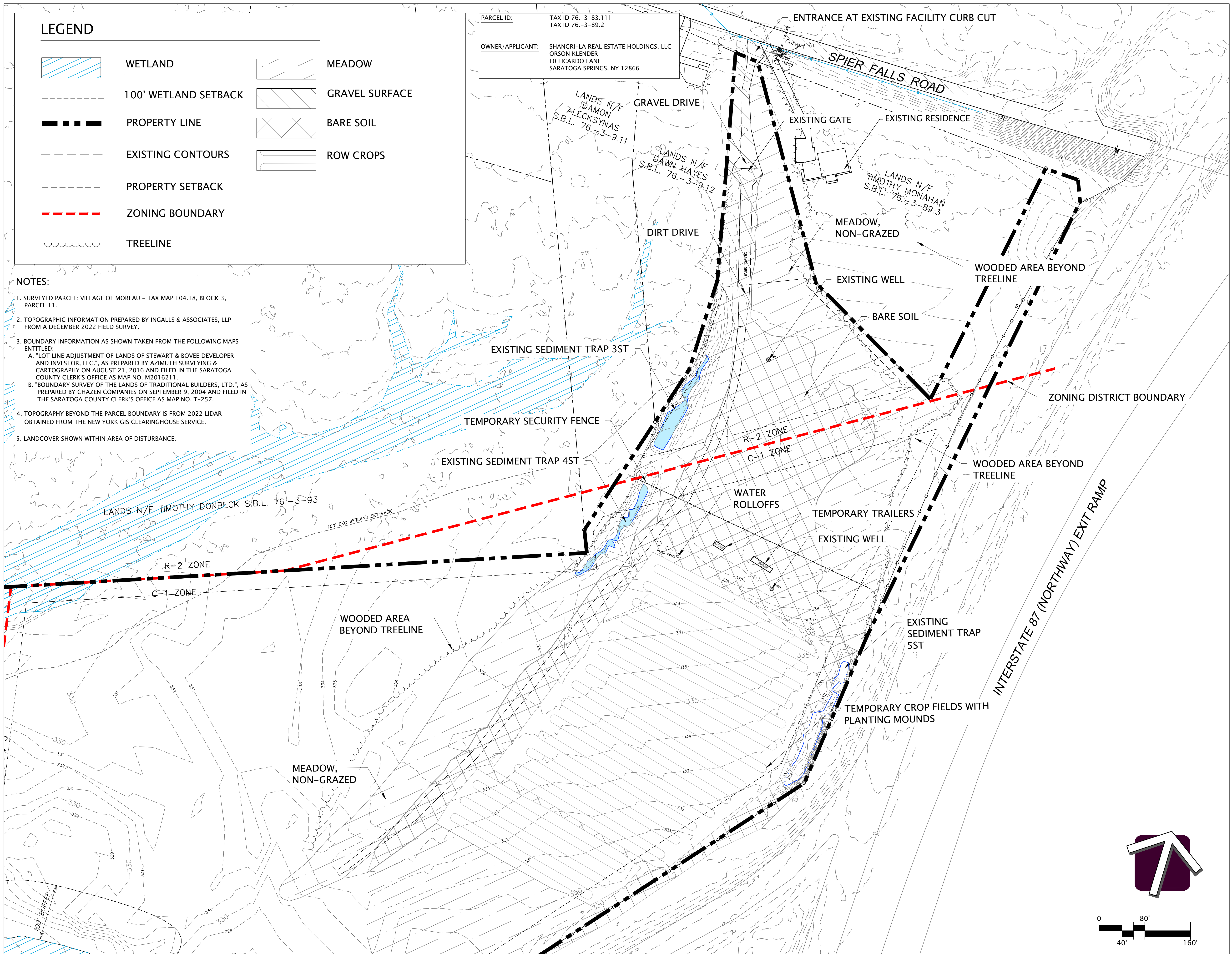
Drawn By: SRZ/SEM Checked By: PL

Project No. 420-1096

Date: 2024-12-16

**Existing Condition Map  
Farmstand  
C-010**





**LEGEND**

- WETLAND
- 100' WETLAND SETBACK
- PROPERTY LINE
- EXISTING CONTOURS
- PROPERTY SETBACK
- ZONING BOUNDARY
- TREELINE
- MEADOW
- GRAVEL SURFACE
- BARE SOIL
- ROW CROPS

PARCEL ID: TAX ID 76--3-83.111  
TAX ID 76--3-89.2

OWNER/APPLICANT: SHANGRI-LA REAL ESTATE HOLDINGS, LLC  
ORSON KLENDER  
10 LICARDO LANE  
SARATOGA SPRINGS, NY 12866

- NOTES:**
1. SURVEYED PARCEL: VILLAGE OF MOREAU - TAX MAP 104.18, BLOCK 3, PARCEL 11.
  2. TOPOGRAPHIC INFORMATION PREPARED BY INGALLS & ASSOCIATES, LLP FROM A DECEMBER 2022 FIELD SURVEY.
  3. BOUNDARY INFORMATION AS SHOWN TAKEN FROM THE FOLLOWING MAPS ENTITLED:
    - A. "LOT LINE ADJUSTMENT OF LANDS OF STEWART & BOVEE DEVELOPER AND INVESTOR, LLC.", AS PREPARED BY AZIMUTH SURVEYING & CARTOGRAPHY ON AUGUST 21, 2016 AND FILED IN THE SARATOGA COUNTY CLERK'S OFFICE AS MAP NO. M2016211.
    - B. "BOUNDARY SURVEY OF THE LANDS OF TRADITIONAL BUILDERS, LTD.", AS PREPARED BY CHAZEN COMPANIES ON SEPTEMBER 9, 2004 AND FILED IN THE SARATOGA COUNTY CLERK'S OFFICE AS MAP NO. T-257.
  4. TOPOGRAPHY BEYOND THE PARCEL BOUNDARY IS FROM 2022 LIDAR OBTAINED FROM THE NEW YORK GIS CLEARINGHOUSE SERVICE.
  5. LANDCOVER SHOWN WITHIN AREA OF DISTURBANCE.



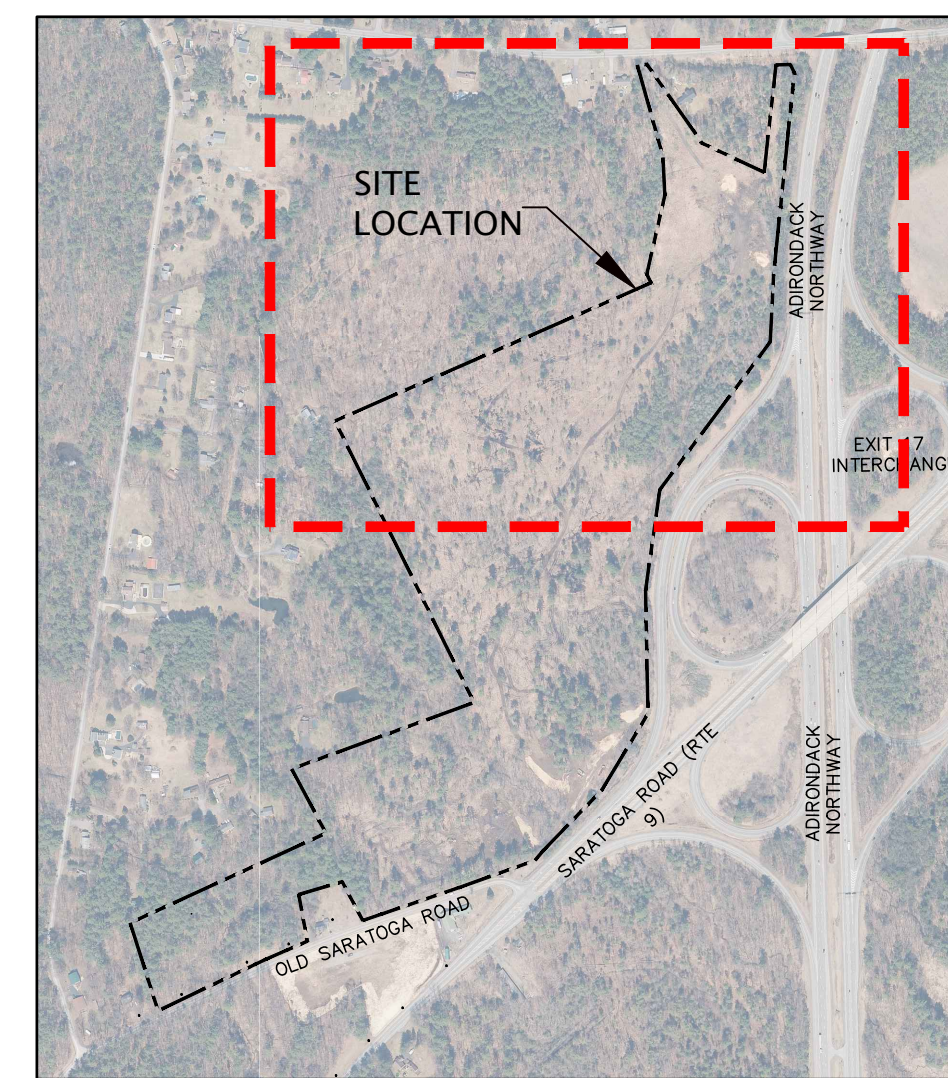
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SITE LOCATION MAP  
SCALE: NOT TO SCALE



# Shangri-La Greenhouses and Farmstand

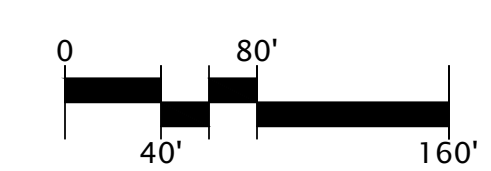
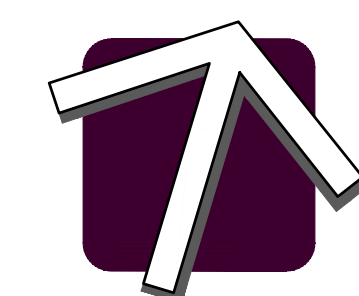
Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
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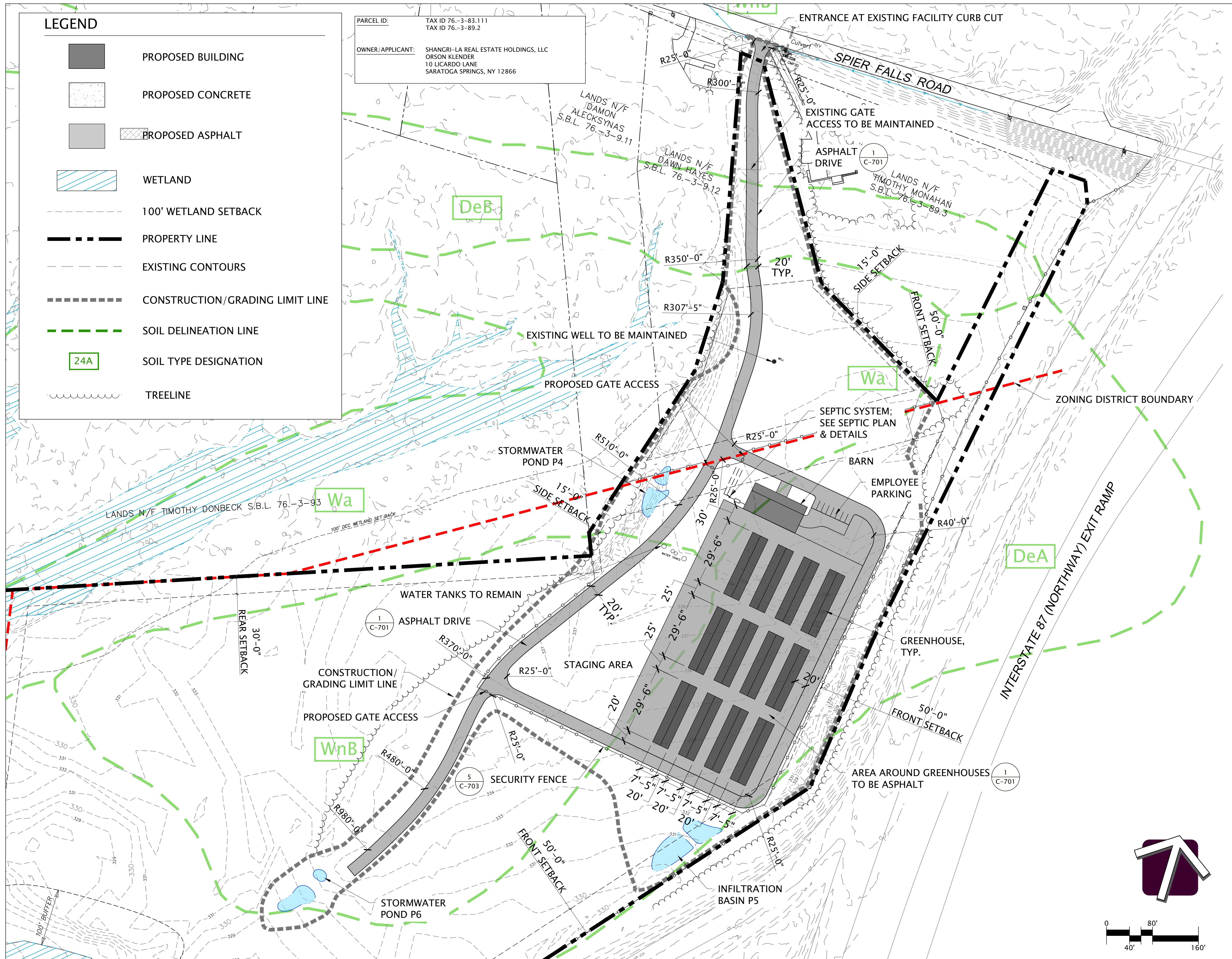
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## Existing Condition Map Greenhouses C-011







PARCEL ID: TAX ID 76.-3-83.111  
TAX ID 76.-3-89.2

OWNER/APPLICANT: SHANGRI-LA REAL ESTATE HOLDINGS, LLC  
ORSON KLEIDER  
10 LICARDO LANE  
SARATOGA SPRINGS, NY 12866

**LEGEND**

- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- WETLAND
- 100' WETLAND SETBACK
- PROPERTY LINE
- EXISTING CONTOURS
- CONSTRUCTION/GRADING LIMIT LINE
- SOIL DELINEATION LINE
- SOIL TYPE DESIGNATION
- TREELINE



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**ZONING COMPLIANCE:**

DISTRICT: GENERAL COMMERCIAL DISTRICT (C-1)

| COMPLIANCE ITEM       | REQUIRED | PROVIDED    |
|-----------------------|----------|-------------|
| MIN. LOT AREA         | 1 ACRE   | 48.95 ACRES |
| TOTAL IMP. COVERAGE   | NA       | 4.65 ACRES  |
| MIN. LOT WIDTH        | 200'     | VARIES      |
| MIN. LOT DEPTH        | 175'     | 525' MIN.   |
| MAX. LOT COVERAGE     | 40%      | 9.5%        |
| MIN. FLOOR AREA       | NA       | 47,848 SF   |
| MAX. STRUCTURE HEIGHT | 30'      | 30'         |

DISTRICT: RESIDENTIAL DISTRICT (R-2)

| COMPLIANCE ITEM          | REQUIRED  | PROVIDED    |
|--------------------------|-----------|-------------|
| MIN. LOT AREA            | 0.75 ACRE | 27.42 ACRES |
| MIN. TOTAL IMP. COVERAGE | N/A       | 0.35 ACRES  |
| MI/LOT WIDTH             | 175'      | VARIES      |
| MI/LOT DEPTH             | 175'      | 371' MIN.   |
| MIN. LOT COVERAGE        | 25%       | 1.3%        |
| MIN. FLOOR AREA          | 800 SF    | NA          |
| MAX. STRUCTURE HEIGHT    | 38'       | NA          |

**PARKING SUMMARY:**

FARMSTAND: 14 STANDARD (INCLUDING ONE (1) ACCESSIBLE)  
3 OVERSIZED

GREENHOUSES: 8 STANDARD EMPLOYEE

# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
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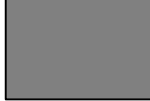

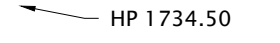
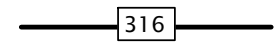
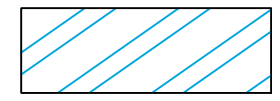
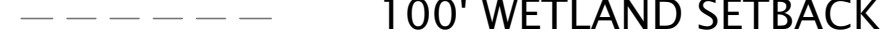







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## Layout Plan Greenhouses C-101



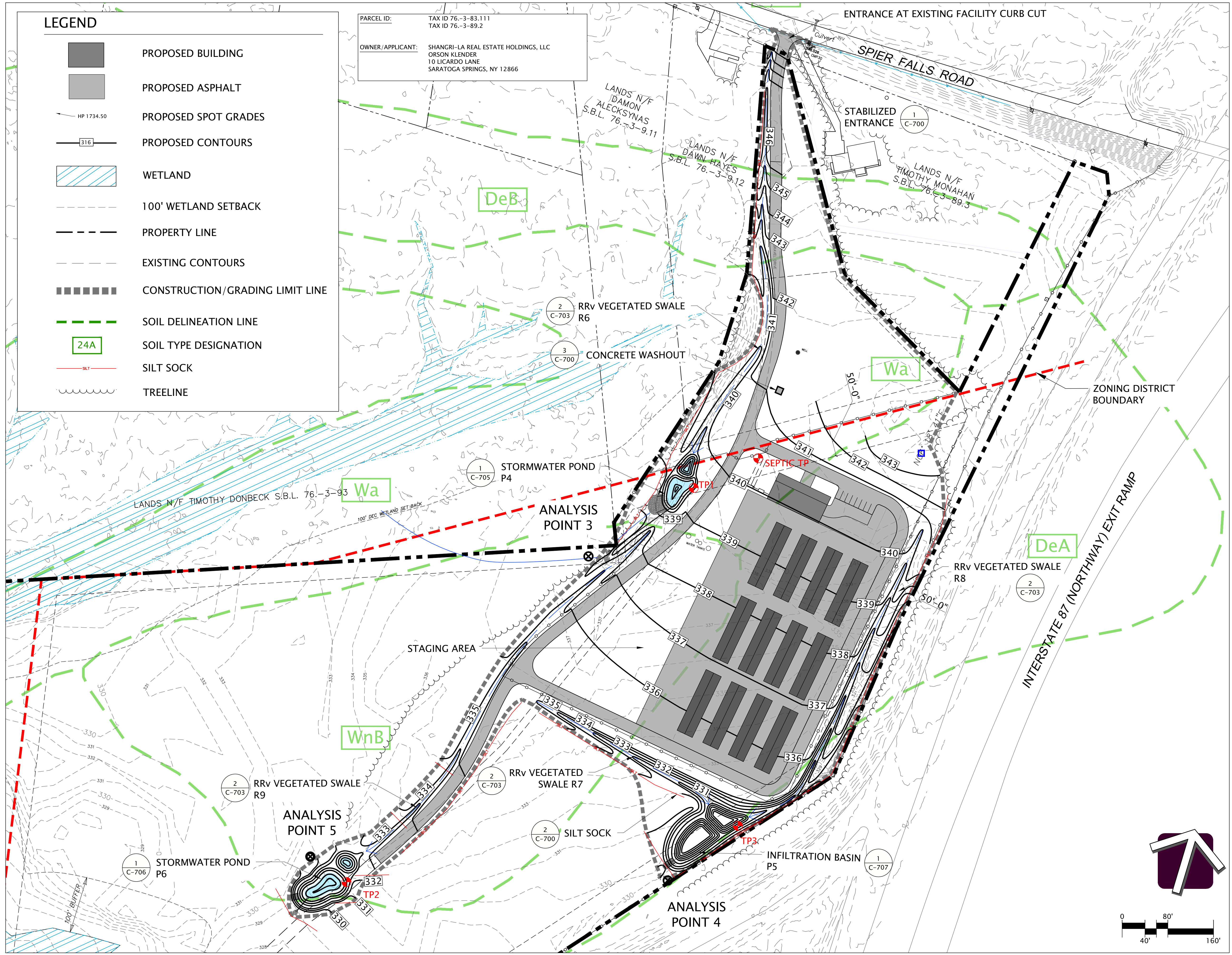


**LEGEND**

-  PROPOSED BUILDING
-  PROPOSED ASPHALT
-  PROPOSED SPOT GRADES
-  PROPOSED CONTOURS
-  WETLAND
-  100' WETLAND SETBACK
-  PROPERTY LINE
-  EXISTING CONTOURS
-  CONSTRUCTION/GRADING LIMIT LINE
-  SOIL DELINEATION LINE
-  SOIL TYPE DESIGNATION
-  SILT SOCK
-  TREELINE

PARCEL ID: TAX ID 76.-3-83.111  
TAX ID 76.-3-89.2

OWNER/APPLICANT: SHANGRI-LA REAL ESTATE HOLDINGS, LLC  
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10 LICARDO LANE  
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# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
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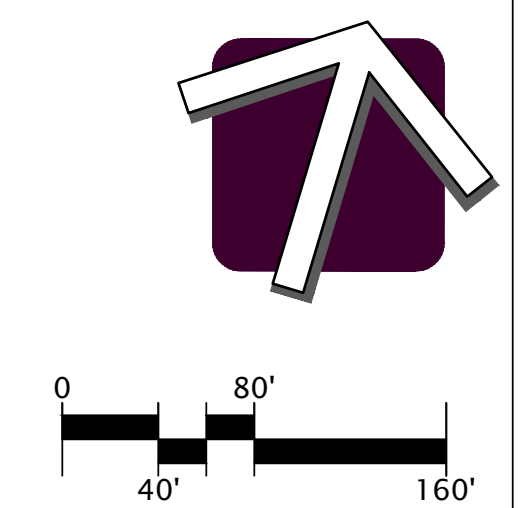
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Project No. 420-1096

Date: 2024-12-16

## Grading, Erosion & Sediment Control Plan Greenhouses

C-201



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# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
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Date: 2024-12-16

## Planting Plan Farmstand C-500

### PLANTING SCHEDULE

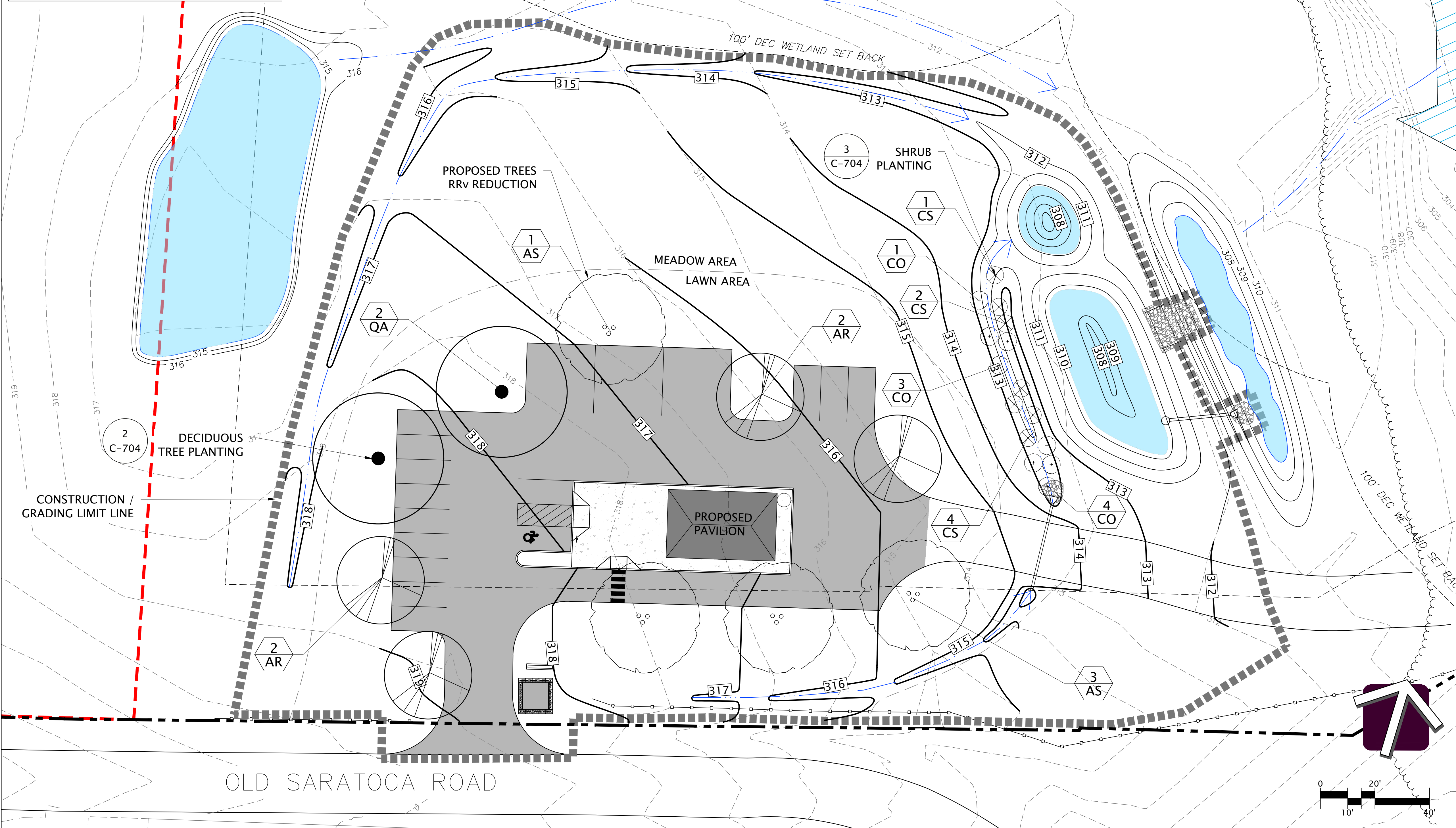
| QTY                    | KEY | SCIENTIFIC NAME           | COMMON NAME       | SIZE          |
|------------------------|-----|---------------------------|-------------------|---------------|
| <b>DECIDUOUS TREES</b> |     |                           |                   |               |
| 4                      | AR  | ACER RUBRUM               | RED MAPLE         | 2.5-3.5" CAL. |
| 4                      | AS  | ACER SACCHARINUM          | SILVER MAPLE      | 2.5-3.5" CAL. |
| 2                      | QA  | QUERCUS ALBA              | WHITE OAK         | 2.5-3.5" CAL. |
| <b>SHRUBS</b>          |     |                           |                   |               |
| 7                      | CS  | CORNUS SERICEA            | RED OSIER DOGWOOD | #3            |
| 8                      | CO  | CEPHALANTHUS OCCIDENTALIS | BUTTONBUSH        | #3            |

### LEGEND

|  |                   |  |                                     |  |                   |
|--|-------------------|--|-------------------------------------|--|-------------------|
|  | PROPOSED BUILDING |  | PROPOSED PLANTING                   |  | EXISTING CONTOURS |
|  | PROPOSED CONCRETE |  | CONSTRUCTION/<br>GRADING LIMIT LINE |  | PROPOSED CONTOURS |
|  | PROPOSED ASPHALT  |  | PROPERTY LINE                       |  | TREELINE          |
|  | WETLAND           |  | 100' WETLAND SETBACK                |  | SILT FENCE        |

PARCEL ID: TAX ID 76.-3-83.111  
TAX ID 76.-3-89.2

OWNER/APPLICANT: SHANGRI-LA REAL ESTATE HOLDINGS, LLC  
ORSON KLENDER  
10 LICARDO LANE  
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Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
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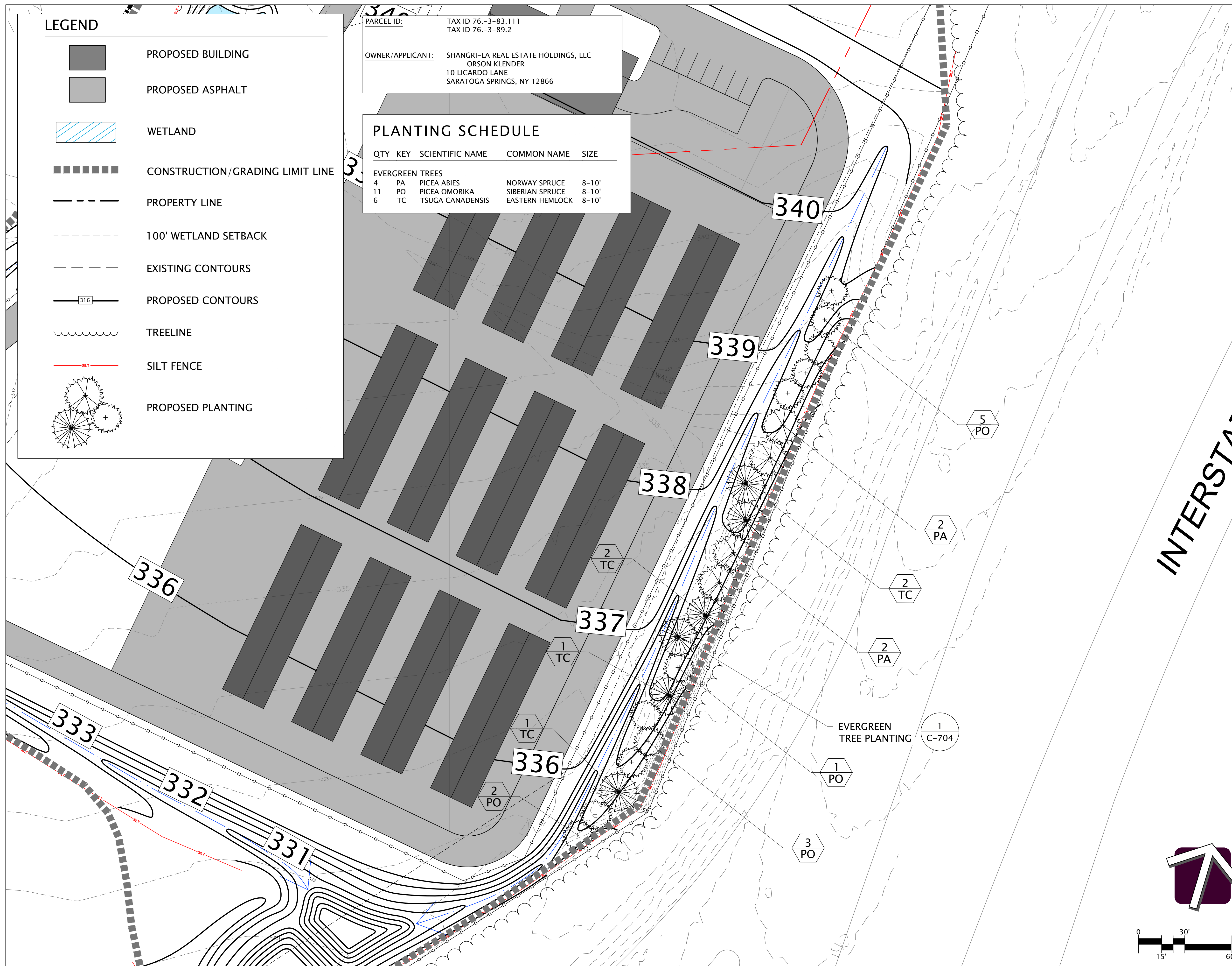
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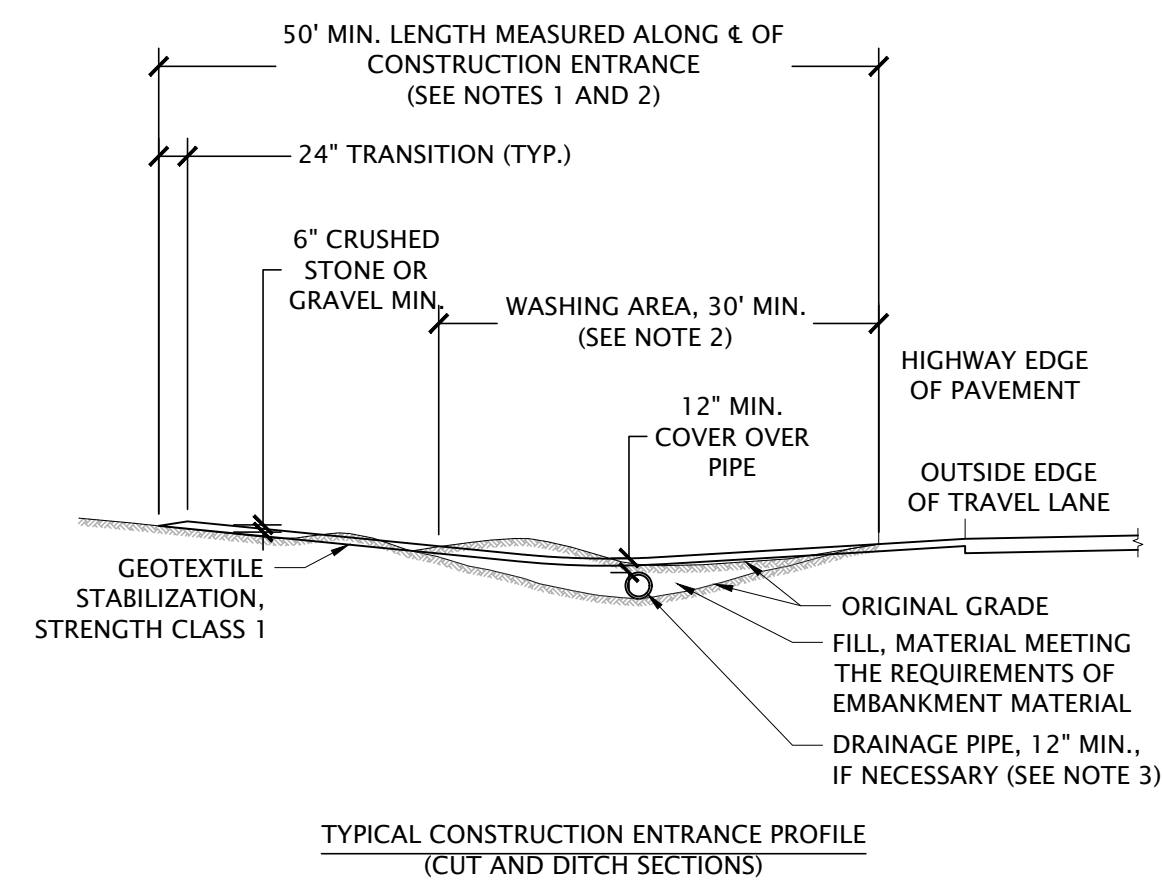
Project No. 420-1096

Date: 2024-12-16

## Planting Plan Greenhouses C-501

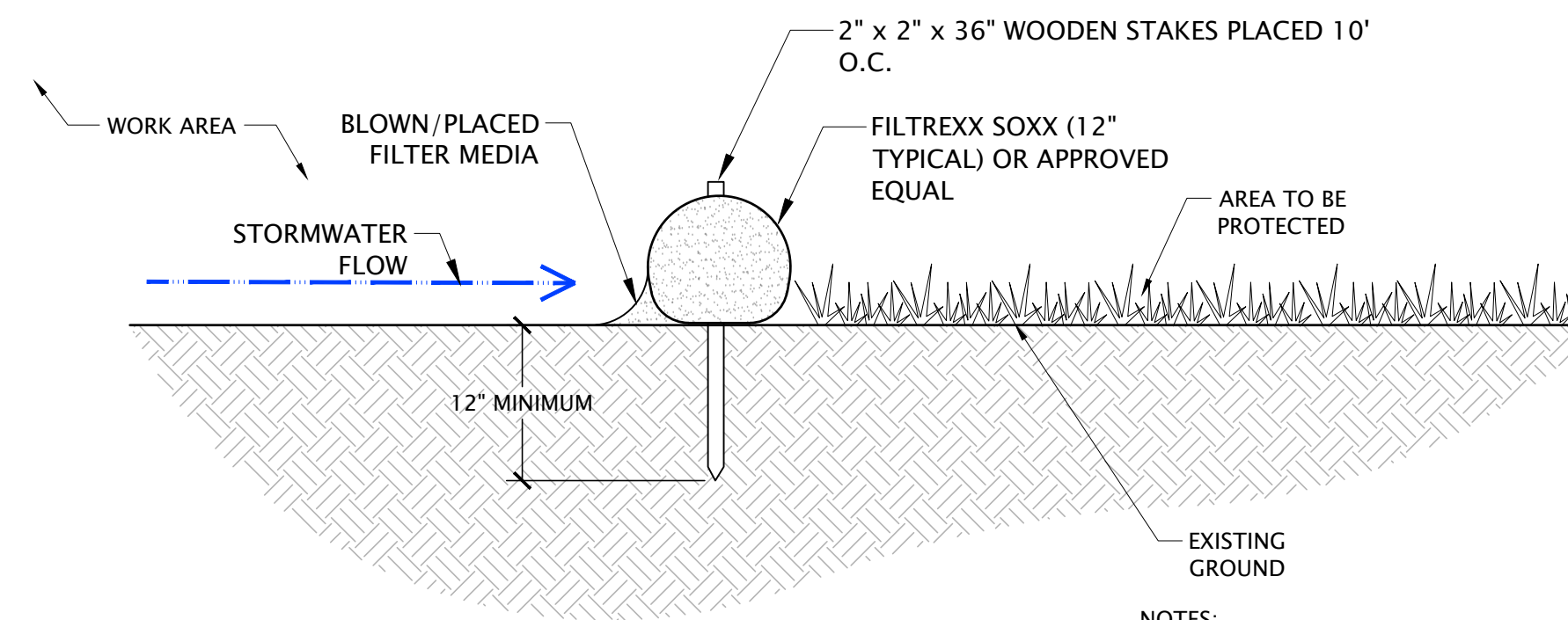


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APPLICATION NOTES:

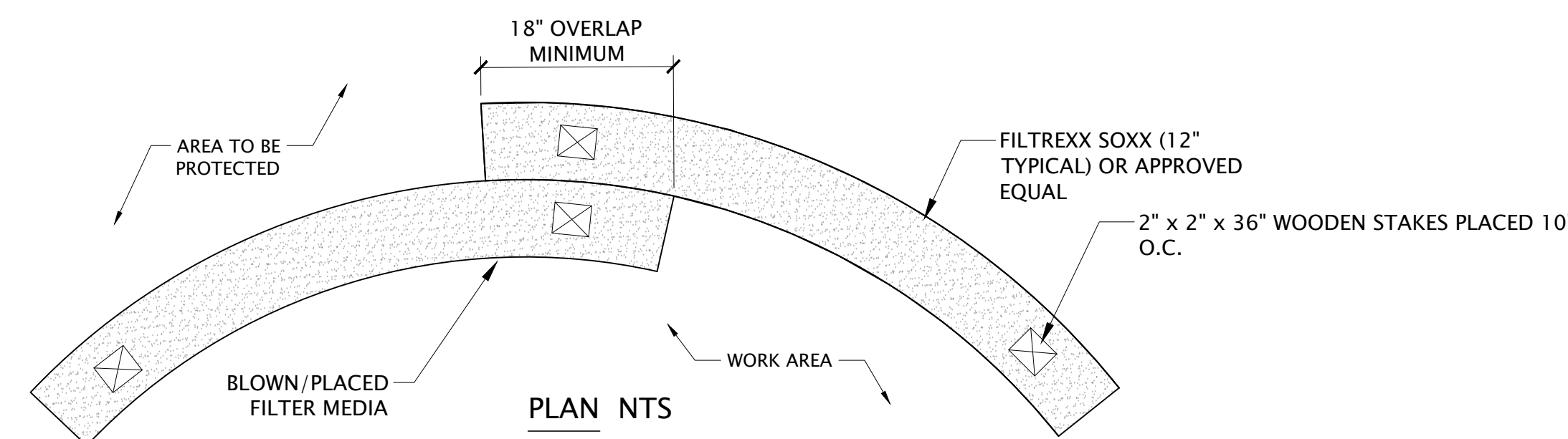
- A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.
- NOTES:
1. MODIFICATIONS MAY BE REQUIRED TO MATCH FIELD CONDITIONS.
  2. A 30' WASH AREA SHALL BE PROVIDED, ADDITIONAL GRADING MAY BE REQUIRED TO PROVIDE WASHING AREAS.
  3. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS (12" MIN.). ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
  4. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GROUND FOR PLACEMENT OF 6" OF #3 CRUSHED STONE OR GRAVEL ENTRANCE MATERIAL UP TO THE EDGE OF PAVEMENT.
  5. DRAINAGE PIPES OVER 20" DIA. THAT ARE NOT BEHIND ROADSIDE BARRIER SHALL INCLUDE SAFETY END SECTIONS OR GRATING TO ENSURE TRAVERSABILITY.
  6. LAYOUT DRIVEWAY OPENING PER TAPER METHOD OF LAYOUT FOR A MINOR COMMERCIAL DRIVEWAY ON STANDARD SHEET TITLED "DRIVEWAY ENTRANCE LAYOUT".
  7. DETERMINE DRIVEWAY WIDTH "W" FROM THE MINOR COMMERCIAL DRIVEWAY CLASSIFICATION OF TABLE 1 ON STANDARD SHEET TITLED "DRIVEWAY DESIGN GUIDELINES".
  8. PERIODIC MAINTENANCE MAY BE REQUIRED AND COST OF THIS MAINTENANCE WILL BE INCLUDED IN THE UNIT PRICE BID.



SECTION NTS

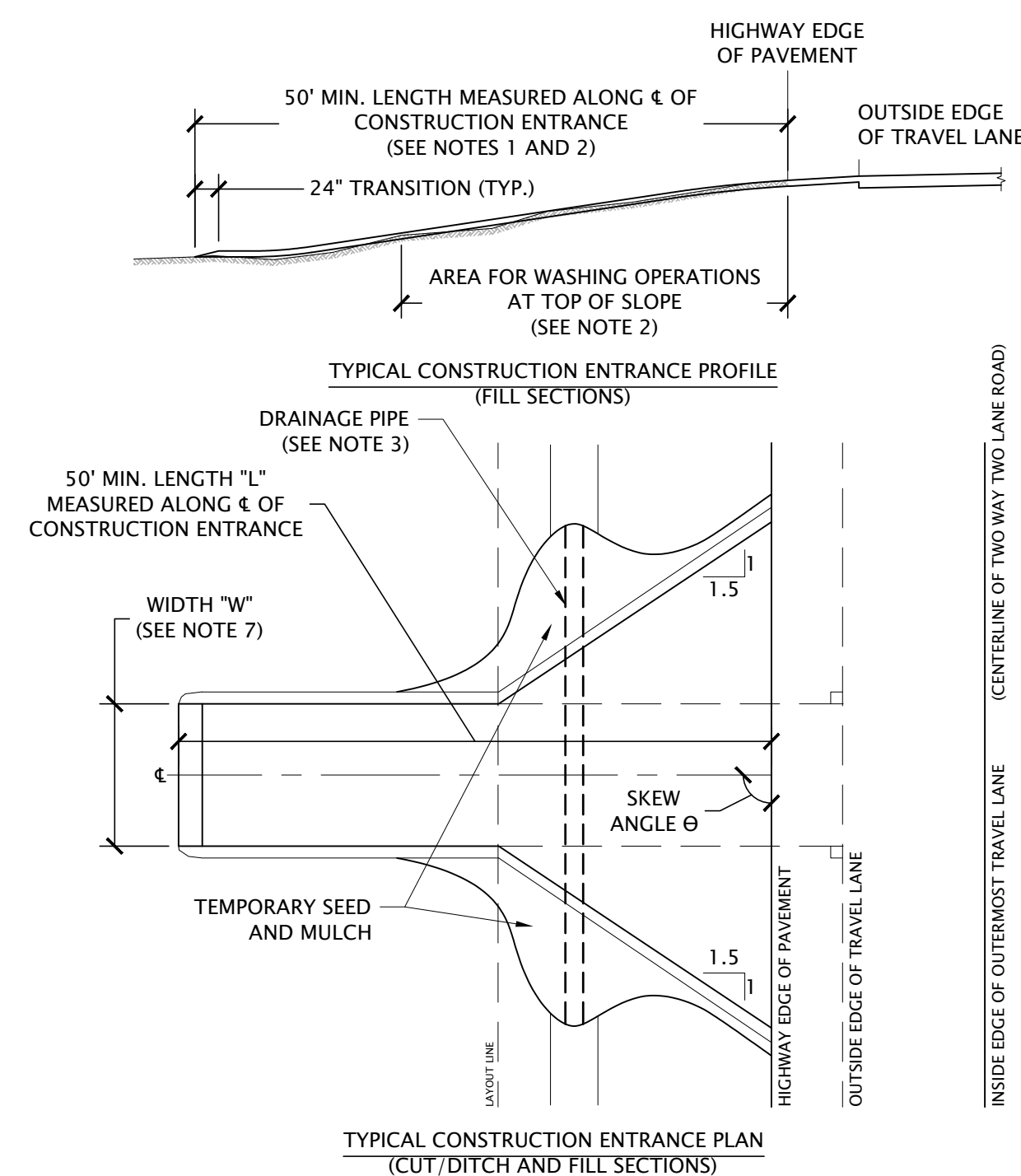
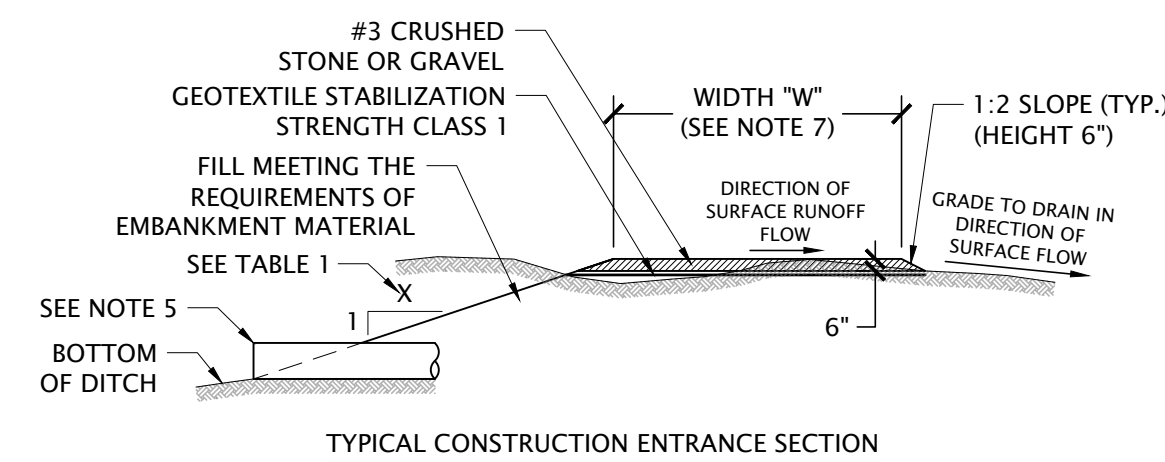
NOTES:

1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS, OR APPROVED EQUAL.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

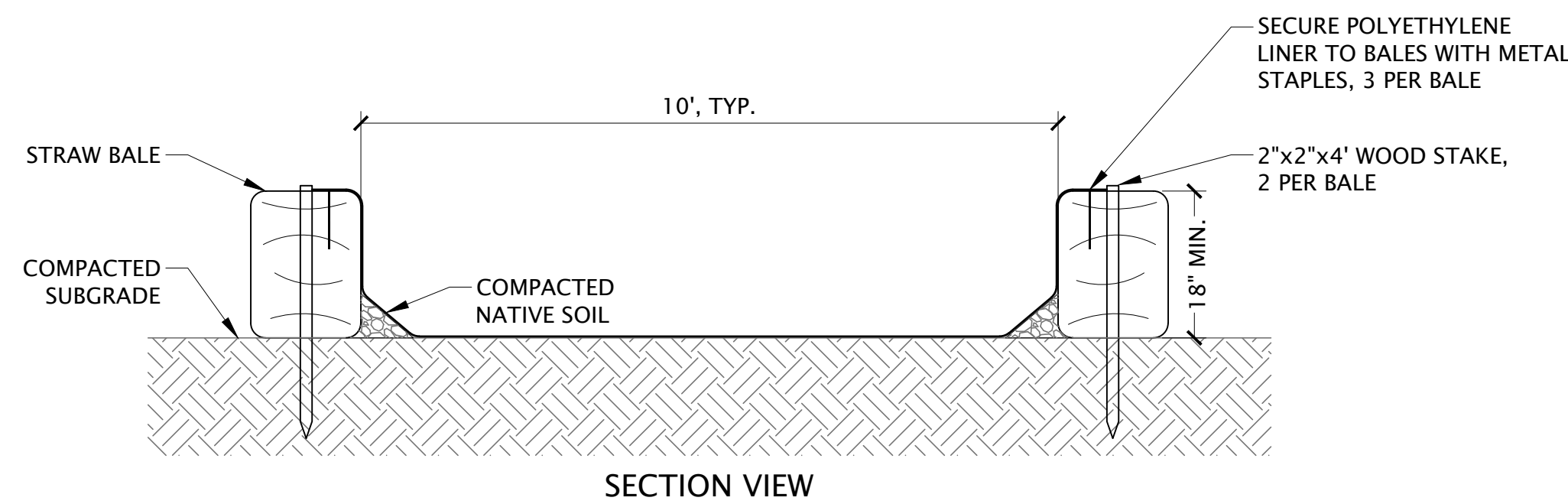


2 SILT SOCK  
SCALE: NOT TO SCALE

| TABLE 1 |                                    |
|---------|------------------------------------|
| X       | HIGHWAY SPEED CONDITION            |
| 2       | ALL SPEEDS -- PROTECTED BY BARRIER |
| 3       | < 50 MPH                           |
| 6       | ≥ 50 MPH                           |



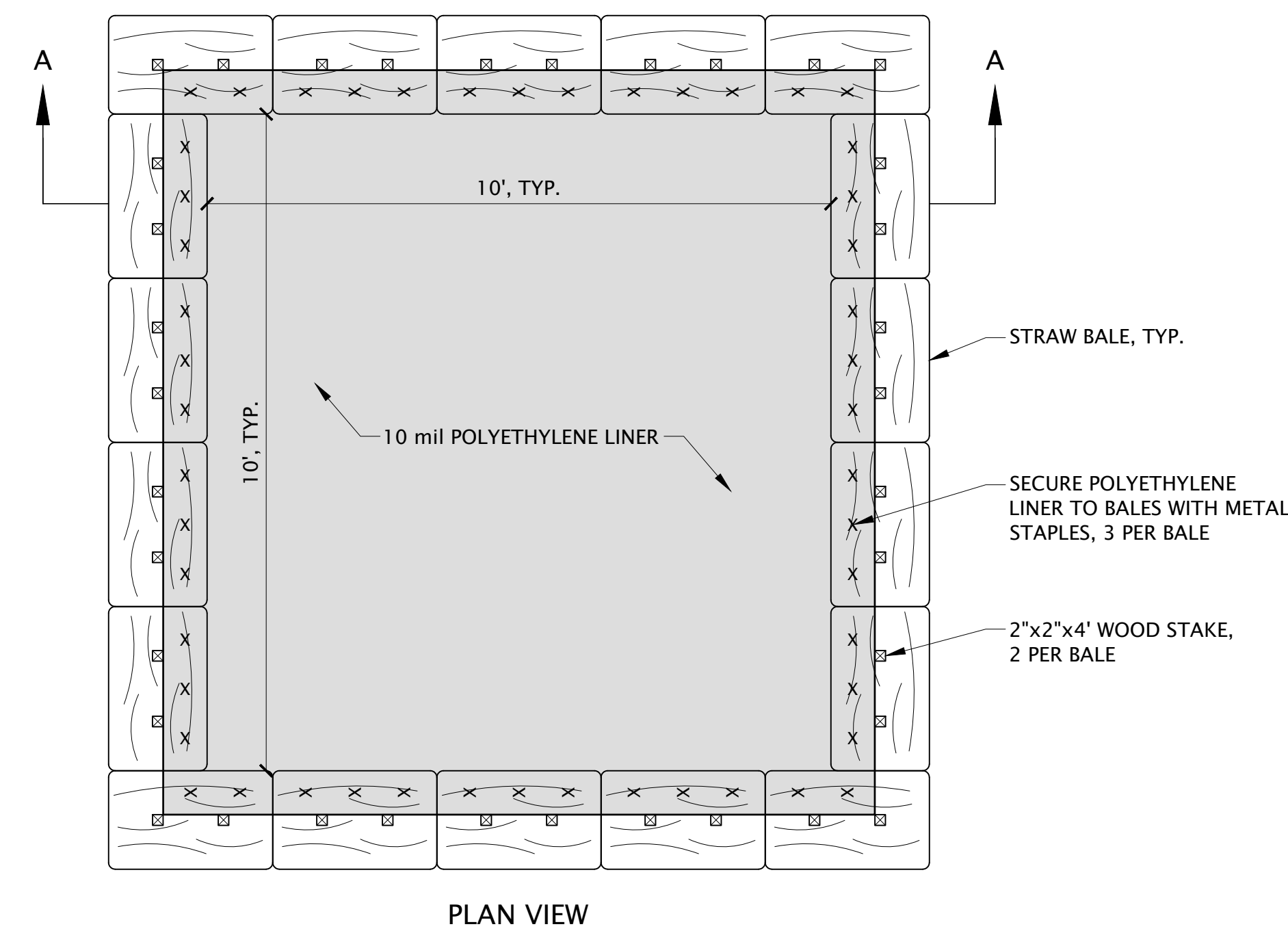
1 STABILIZED CONSTRUCTION ENTRANCE  
SCALE: NOT TO SCALE



NOTES:

1. LOCATE WASHOUT WHERE INDICATED ON PLANS OR IN OTHERWISE SUITABLE LOCATION AT LEAST 50' FROM INLETS, WATERWAYS, WELLS & LEACHFIELDS.
2. INSTALL TO PREVENT GENERAL SITE RUNOFF FROM ENTERING STORAGE AREA.
3. REPLACE POLYETHYLENE LINER IF DAMAGED OR TORN.
4. LIQUIDS SHALL BE ALLOWED TO EVAPORATE OR SHALL BE PUMPED OUT AND DISPOSED OF BY APPROPRIATE WASTE HAULER. DRY SOLIDS SHALL BE COLLECTED AND DISPOSED OF AT AN APPROPRIATE RECYCLING FACILITY.

3 ABOVE GRADE CONCRETE WASHOUT DETAIL  
SCALE: NOT TO SCALE



# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
|      |          |       |
|      |          |       |
|      |          |       |

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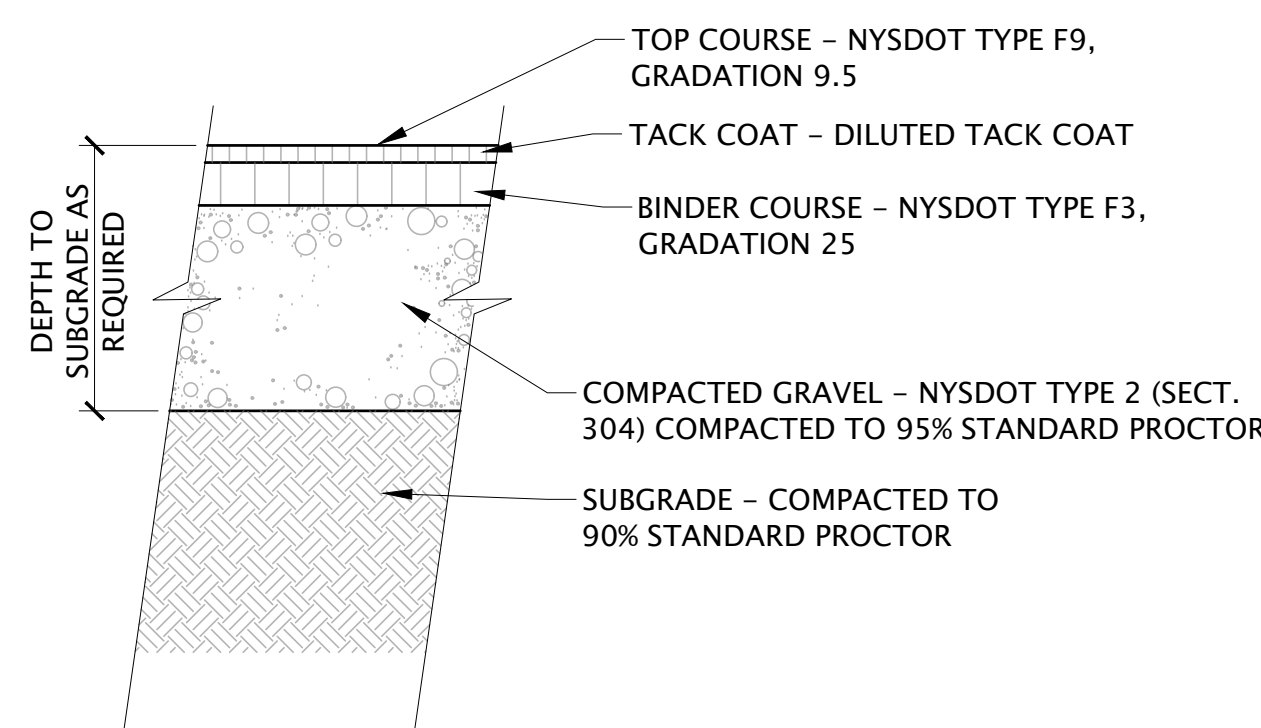
Drawn By: WD/SEM Checked By: PL

Project No. 420-1096

Date: 2024-12-16

Details  
C-700

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NOT FOR  
CONSTRUCTION



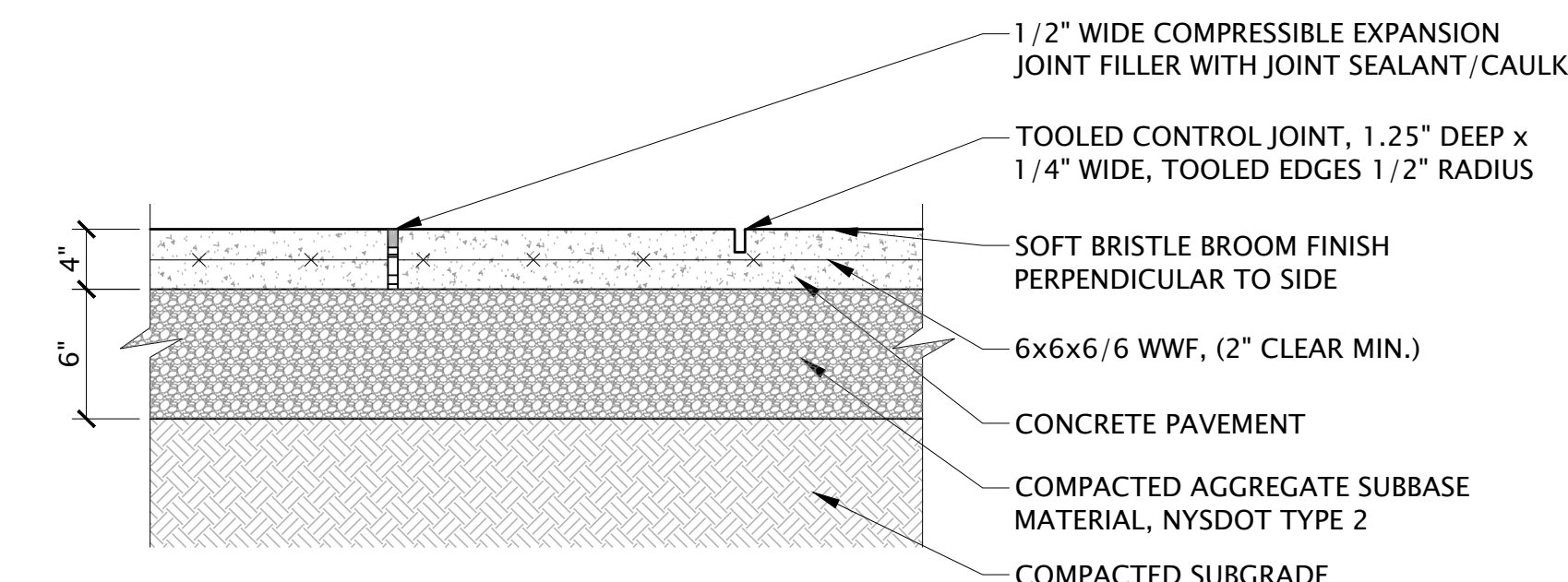
| PAVEMENT TYPE                   | TOP COURSE | BINDER COURSE | GRAVEL COURSE | ESAL LEVEL   |
|---------------------------------|------------|---------------|---------------|--------------|
| PARKING LOT                     | 1 1/2"     | 2"            | 8-10"         | <0.3 MILLION |
| STANDARD ROADWAY                | 1 1/2"     | 3"            | 12"           | <30 MILLION  |
| HEAVILY TRAVELED/ TRUCK LOADING | 2"         | *4"           | 12"           | <30 MILLION  |

\* SEE NOTE NO. 2

NOTES:

- PAVEMENT SECTIONS SPECIFIED ARE TYPICAL FOR STREET, DRIVEWAY AND PARKING LOT CONSTRUCTION WHERE TRAFFIC VOLUMES AND LOADINGS ARE NOT EXCESSIVE. BASED ON ANTICIPATED VOLUMES AND LOADS. THE TOWN ENGINEER MAY REQUIRE STRUCTURAL PAVEMENT SECTION TO BE INCREASED TO CARRY DESIGN LOADING.
- BINDER TO BE PLACE IN 2-2" LIFTS W/ TACK COAT BETWEEN.
- THE TOWN MAY REQUIRE COMPACTION TESTING AND/OR CORE SAMPLES TO VERIFY PAVEMENT THICKNESS. ALL TESTING SHALL BE AS ORDERED BY THE TOWN ENGINEER AND SHALL BE PAID FOR BY THE CONTRACTOR.
- NOTIFY THE TOWN ENGINEER 48 HOURS MINIMUM

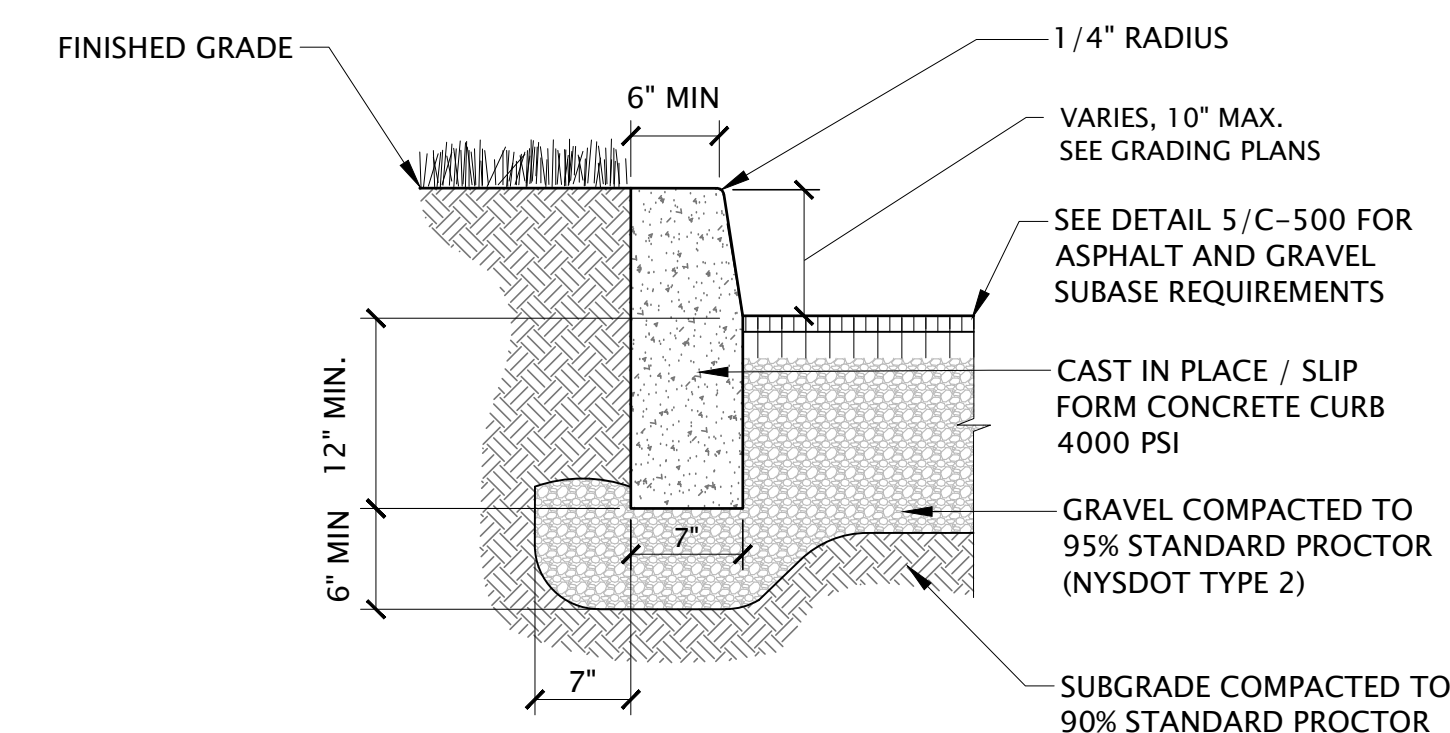
1 ASPHALT PAVEMENT  
C-701 SCALE: NOT TO SCALE



NOTES

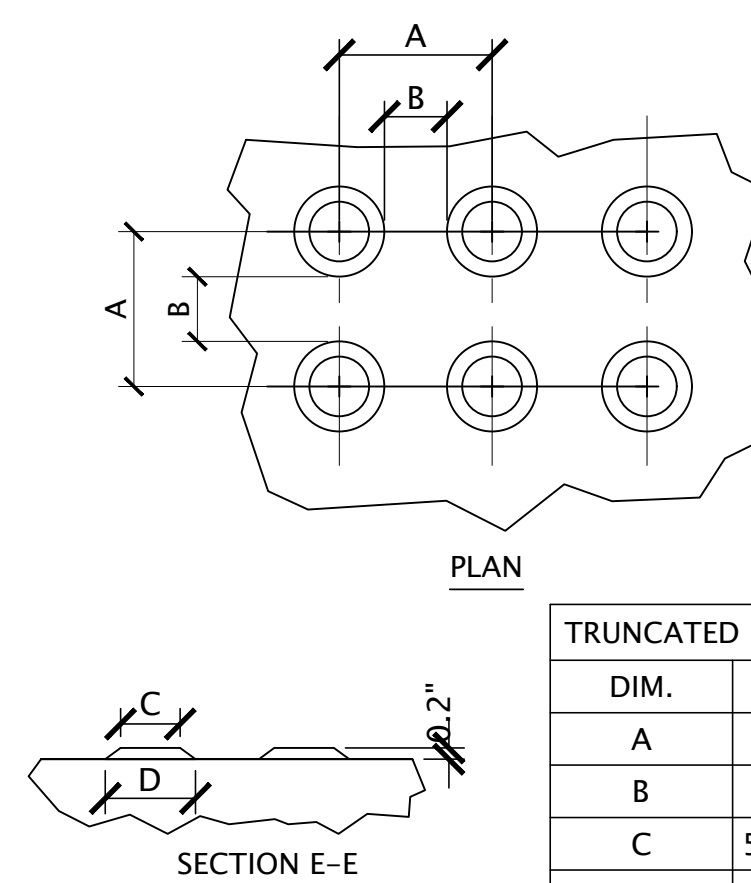
- EXPANSION JOINTS TO OCCUR MAX. 20' O.C. & AT ALL CURBS, WALLS, & WHERE SHOWN ON PLANS AND OTHER DETAILS.
- SCORE JOINTS TO BE 5' O.C. OR AS SHOWN ON PLANS & OTHER DETAILS OR TO MATCH EXISTING CONDITIONS. CONTROL JOINTS SHALL ALSO OCCUR AROUND ENTIRE PERIMETER OF CONCRETE PAVEMENT WHERE NOT DIRECTLY ABUTTING LAWN OR PLANTING BEDS.
- ALL EDGES TO BE FINISHED WITH A 1/4" RADIUS.
- THE CONCRETE USED SHALL BE 4000 PSI PORTLAND CEMENT, AIR-ENTRAINED, CLASS "D" CONCRETE WITH AN AIR CONTENT OF 5%, MIN., TO 7%, MAX., AND A SLUMP OF TWO INCHES, MIN., TO THREE INCHES MAX.

2 4" CONCRETE SIDEWALK  
C-701 SCALE: NOT TO SCALE



NOTE: EXPANSION JOINTS SPACED ALONG CURB 10' O.C. MAX.

3 CAST-IN-PLACE/SLIP FORM CONCRETE CURB  
C-701 SCALE: NOT TO SCALE

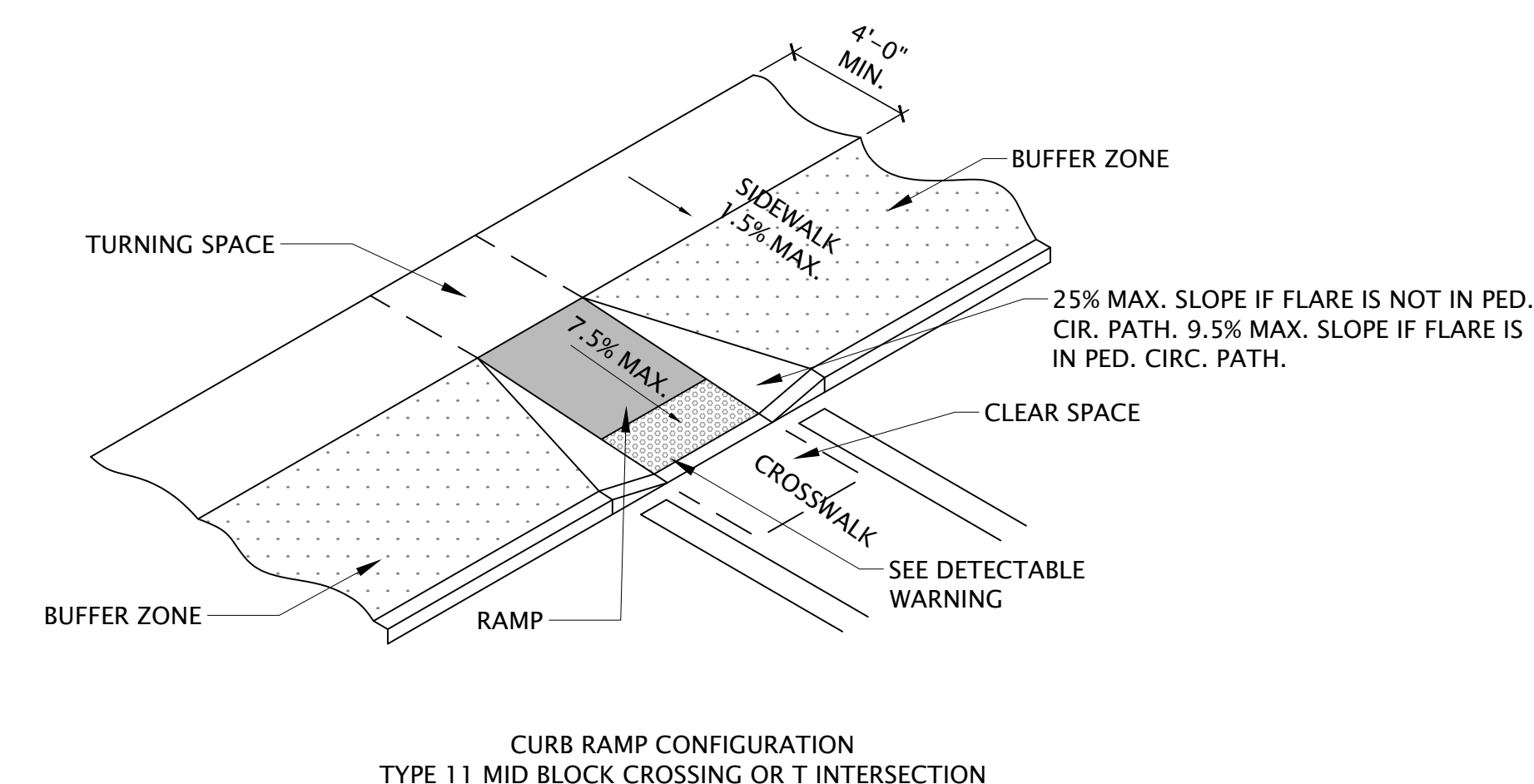


| TRUNCATED DOME DIMENSIONS |                   |           |
|---------------------------|-------------------|-----------|
| DIM.                      | MIN. (IN)         | MAX. (IN) |
| A                         | 1.6"              | 2.4"      |
| B                         | 0.65"             | 1.5"      |
| C                         | 50% - 60% OF DIM. |           |
| D                         | 0.9"              | 1.4"      |

DETECTABLE WARNING SURFACE (DWS)  
TRUNCATED DOME DETAILS

NOTES

- DETECTABLE WARNING SURFACES (DWS) SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS ON PEDESTRIAN ACCESS ROUTES:
  - CURB RAMPS AND BLENDED TRANSITIONS AT PEDESTRIAN STREET CROSSINGS.
  - PEDESTRIAN REFUGE ISLANDS WHERE THE LENGTH OF THE PEDESTRIAN ACCESS ROUTE ACROSS THE REFUGE ISLAND IS GREATER THAN OR EQUAL TO 6'.
  - PEDESTRIAN AT-GRADE RAIL CROSSINGS NOT LOCATED WITHIN A STREET OR HIGHWAY.
- DETECTABLE WARNING SURFACES SHALL BE PROVIDED WHERE THE PEDESTRIAN ACCESS ROUTE CROSSES DRIVEWAYS WITH SIGNAL, YIELD OR STOP CONTROL. DETECTABLE WARNING SURFACES SHALL NOT BE PROVIDED AT CROSSINGS OF UNCONTROLLED DRIVEWAYS.
- WITH THE EXCEPTION OF THE "DETECTABLE WARNING SURFACE TRUNCATED DONE DETAILS" DETECTABLE WARNING DOMES ON THIS SHEET ARE NOT DEPICTED TO SCALE.
- DETECTABLE WARNING FIELDS SHALL EXTEND 24" MINIMUM IN THE DIRECTION OF PEDESTRIAN TRAVEL ACROSS THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE, EXCLUDING ANY FLARED SIDES.
- SOME DETECTABLE WARNING PRODUCTS REQUIRE A CONCRETE BORDER FOR PROPER INSTALLATION. BORDERS CANNOT BE INCLUDED AS PART OF THE 24" MINIMUM DIMENSION DESCRIBED IN NOTE 4.
  - WHEN PLACED AT THE BACK OF CURB, DETECTABLE WARNING FIELDS SHOULD BE PLACED AS CLOSE TO THE BACK OF CURB AS PRACTICABLE. BOTH FRONT CORNERS OF THE DETECTABLE WARNING FIELDS SHALL NOT BE LOCATED MORE THAN 2" FROM THE BACK OF CURB. WHERE THE BACK OF THE CURB EDGE IS TOOLED TO PROVIDE A RADIUS, THE BORDER DIMENSION SHALL MEASURED FROM THE INSIDE EDGE OF THE CURB RADIUS. WHERE CURB IS NOT USED, THE EDGE OF PAVEMENT SHALL BE SUBSTITUTED FOR THE BACK OF CURB FOR PLACEMENT OF DETECTABLE WARNINGS.
  - WHEN PLACED ABOVE THE LOWER GRADE BREAK OF A CURB RAMP, DETECTABLE WARNING UNITS SHOULD BE PLACED AS CLOSE TO THE JOINT AS PRACTICABLE. BOTH FRONT CORNERS OF RECTILINEAR DETECTABLE WARNING FIELDS SHALL NOT BE LOCATED MORE THAN 2' FROM THE JOINT.
  - WHEN RADIAL DWS UNITS ARE PLACED AT THE BACK OF CURB, THE FRONT EDGE OF THE DWS FIELD SHOULD BE AS CLOSE AS POSSIBLE TO THE BACK OF CURB, I.E., THE RADIUS OF THE FRONT OF THE DWS FIELD SHOULD MATCH THE RADIUS ALONG THE BACK OF CURB AS CLOSELY AS POSSIBLE. THE OUTSIDE CORNERS OF THE DWS FIELD MUST BE LOCATED NO MORE THAN 2 INCHES FROM THE BACK OF CURB.
- ON SLOPES OF 5% OR GREATER, THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE LOWER GRADE BREAK ON THE RAMP RUN. WHERE DOMES ARE ARRAYED RADIALY, THEY WAY DIFFER IN DIFFER IN DIAMETER AND CENTER-TO-CENTER SPACING WITHIN THE RANGES SPECIFIED ON THIS SHEET. DOME ALIGNMENT THAT IS PERPENDICULAR OR RADIAL TO THE LOWER GRADE BREAK IS NOT REQUIRED ON SLOPES OF LESS THAN 5%.
- THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. DETECTABLE WARNING SURFACES CONTRAST VISUALLY WITH ADJACENT GUTTER, STREET OR HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT.



# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
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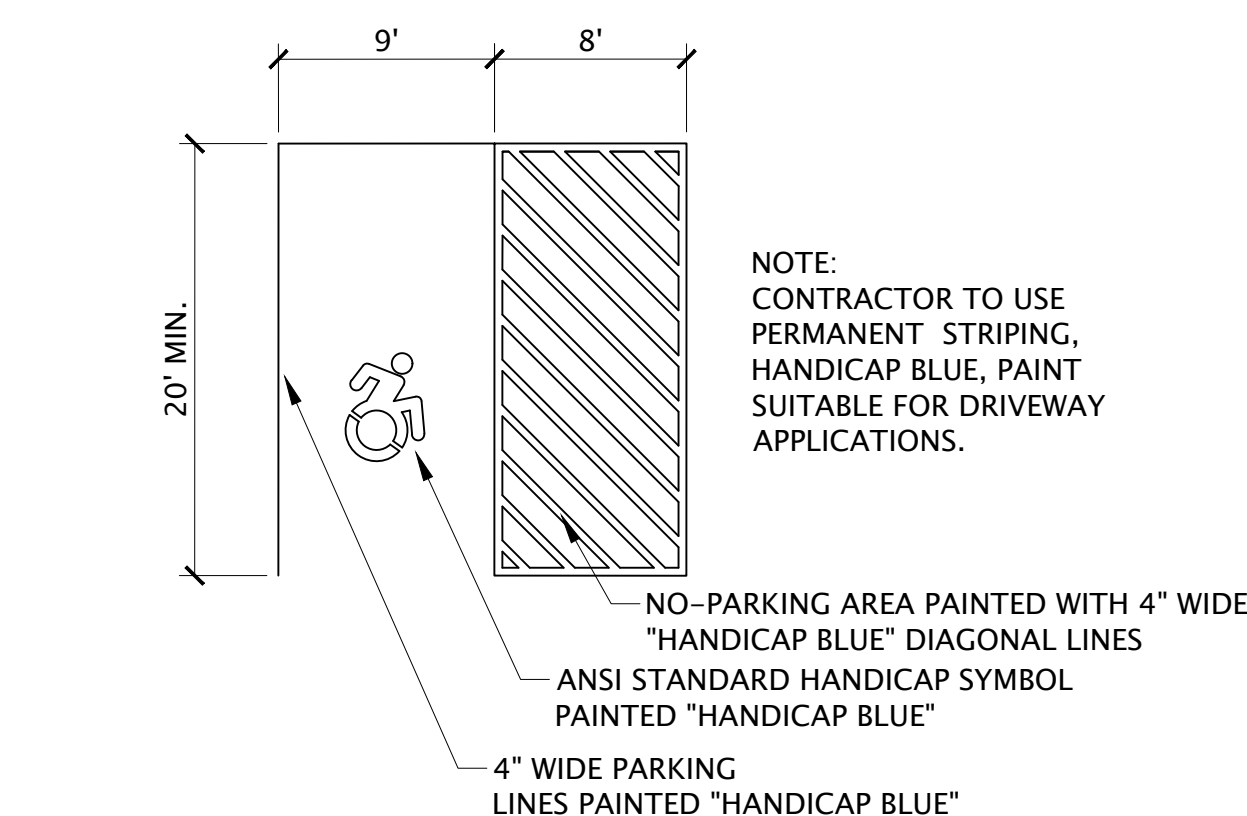
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Project No. 420-1096

Date: 2024-12-16

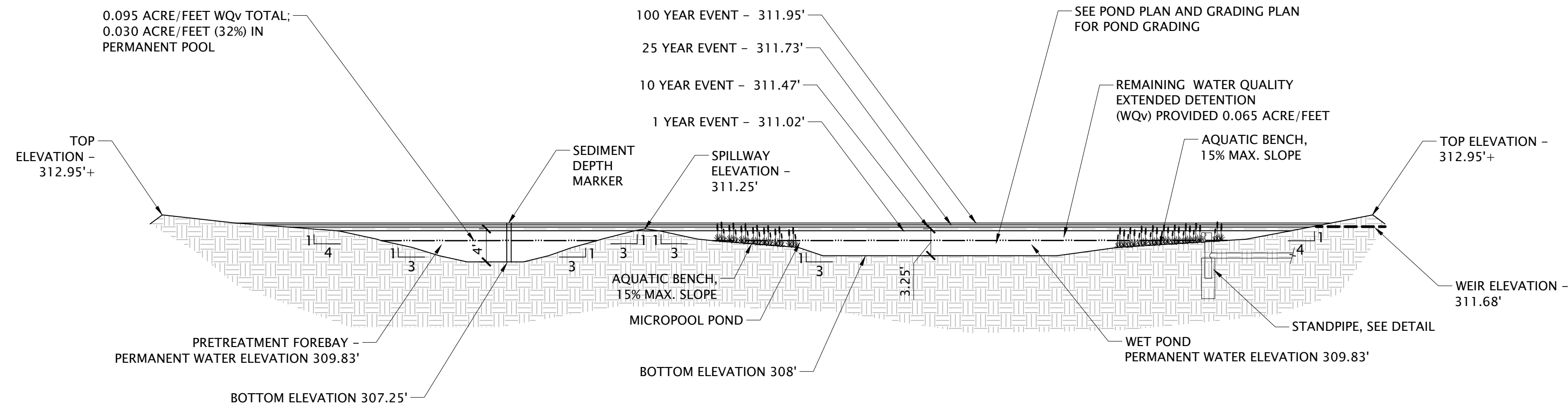
Details  
C-701



4 ACCESSIBLE PARKING DETAIL  
C-701 SCALE: NOT TO SCALE

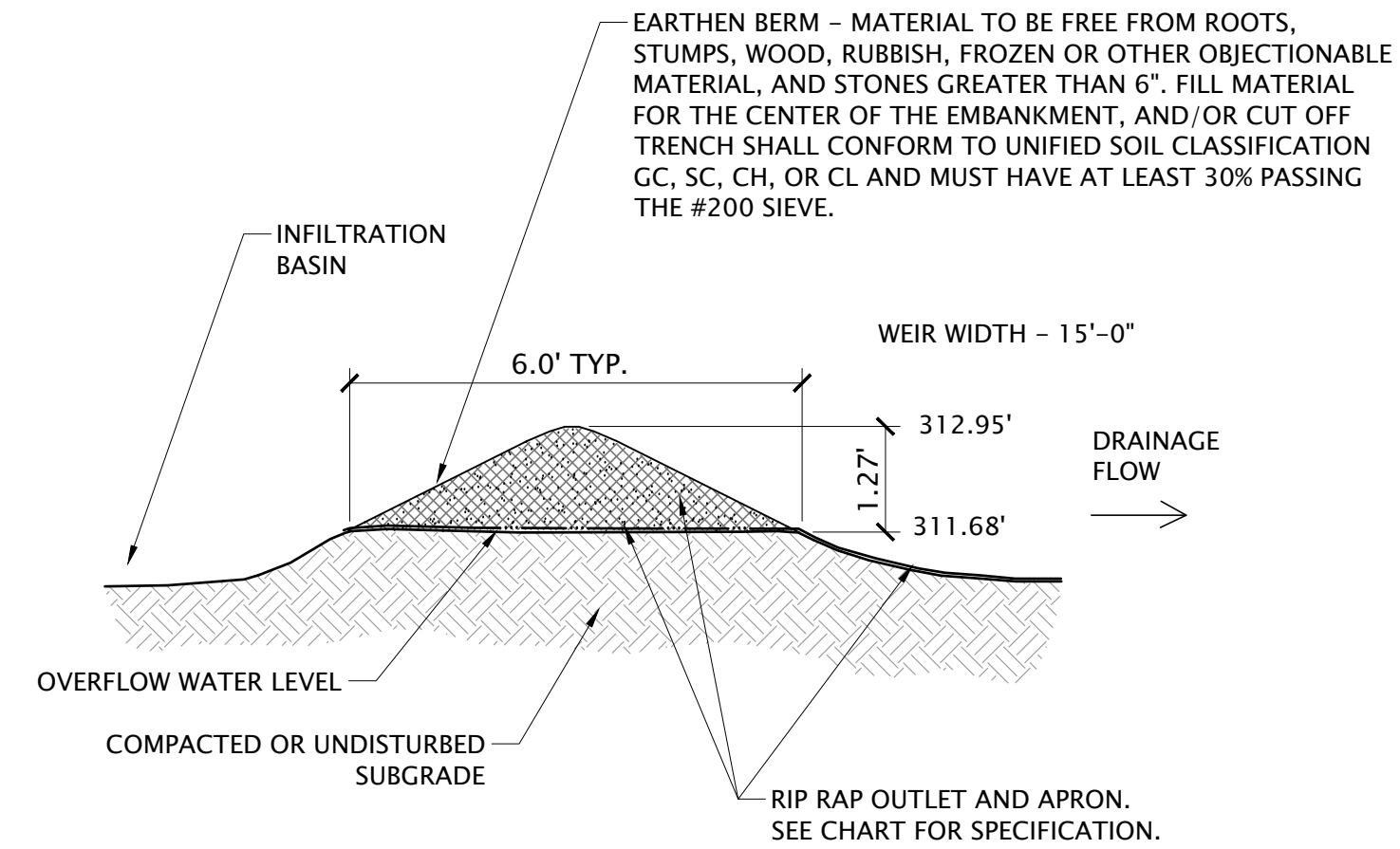
5 PEDESTRIAN CURB RAMPS  
C-701 SCALE: NOT TO SCALE

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NOT FOR  
CONSTRUCTION



POND SECTION

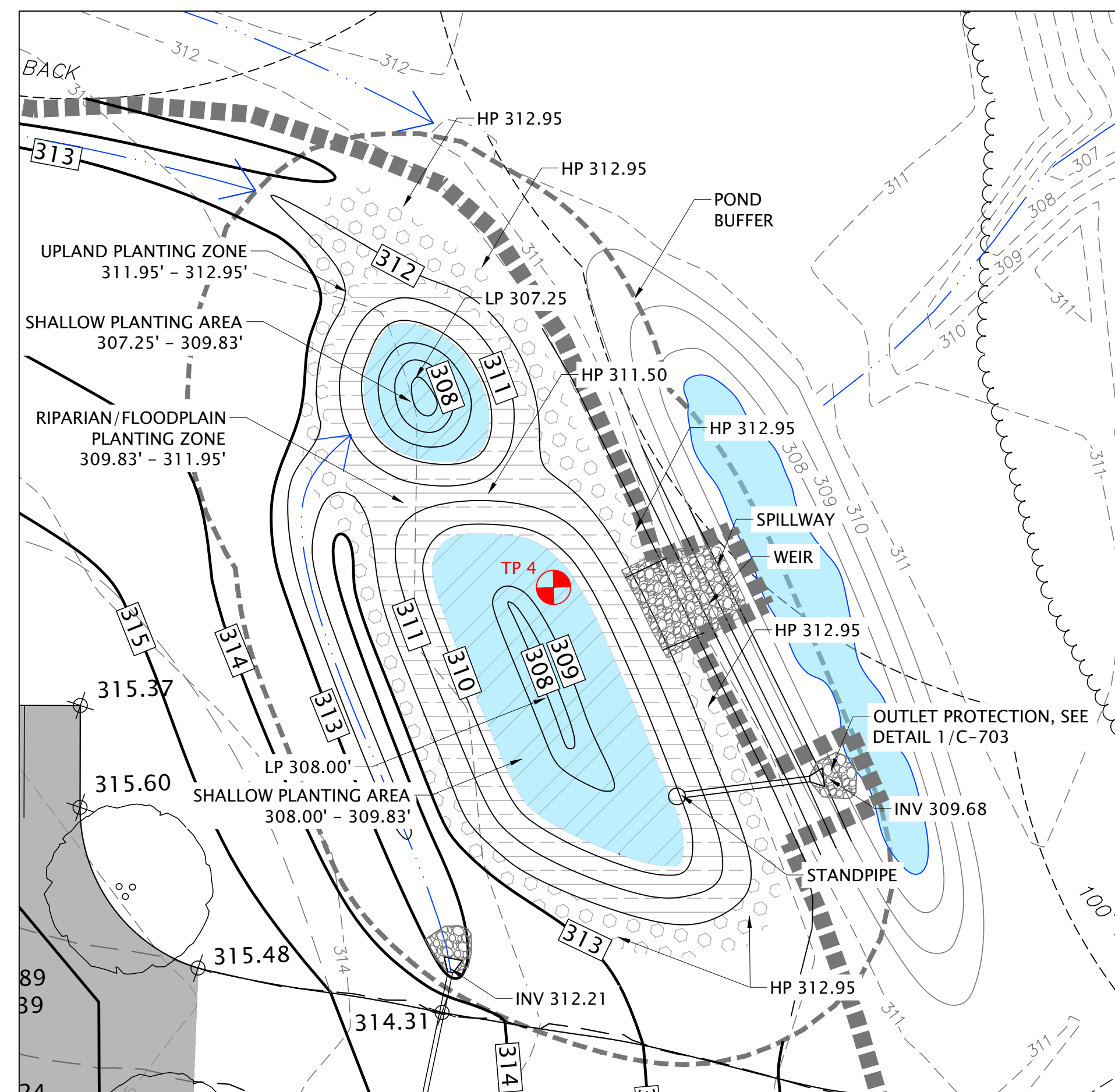
NTS



| WEIR APRON RIP RAP SIZING |            |                                 |                   |              |             |                      |
|---------------------------|------------|---------------------------------|-------------------|--------------|-------------|----------------------|
| STRUCTURE                 | INVERT OUT | RIP RAP SIZE (d <sub>50</sub> ) | BLANKET THICKNESS | APRON LENGTH | APRON WIDTH | DISCHARGE 100-YR CFS |
| POND 3P WEIR APRON        | 311.68     | 4"                              | 9"                | 9' MIN.      | 15' MIN.    | 5.07                 |

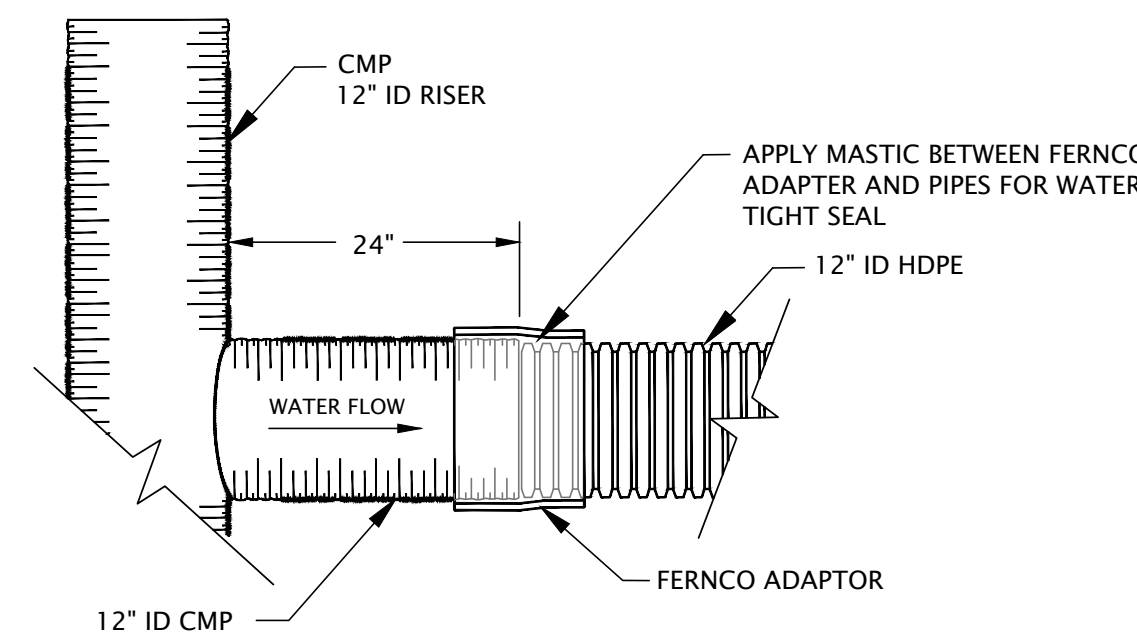
POND WEIR & SPILLWAY

NTS



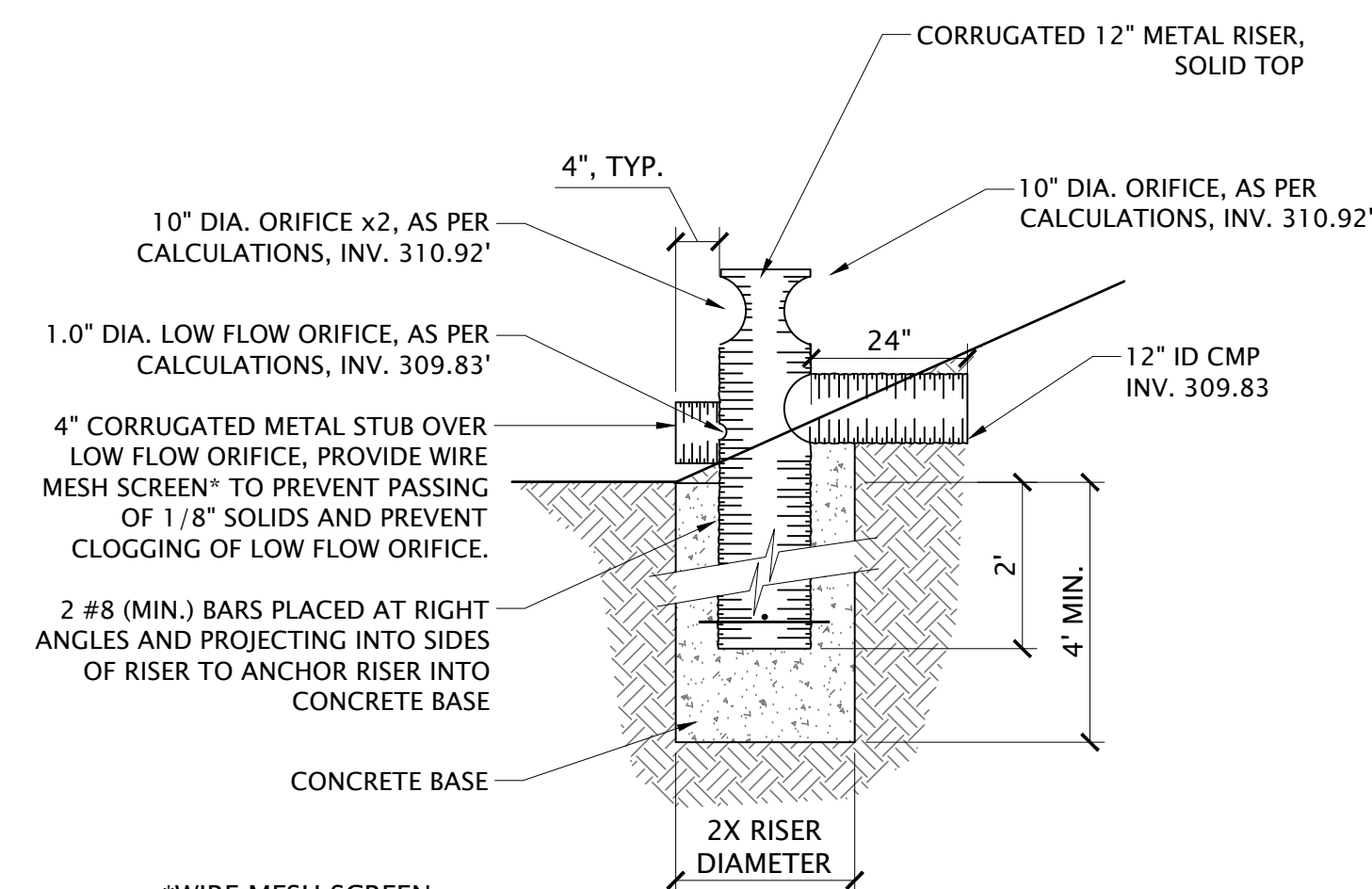
POND PLAN

1" = 20'-0"



CMP STANDPIPE TO HDPE CONNECTION

NTS



\*WIRE MESH SCREEN, TWP INC. #008X008T02 80W36T OR APPROVED EQUAL

CMP STANDPIPE DETAIL

NTS

POND PLANTING SPECIFICATIONS

THE PONDS SHALL BE SEEDED WITH THE FOLLOWING MIXES:  
 UPLAND ZONE - WILDFLOWER FARM DEER RESISTANT SEED MIX #50017, OR APPROVED EQUAL  
 APPLICATION RATE - 1/2 LB./1000 SF  
 RIPARIAN/FLOODPLAIN ZONE - ERNST CONSERVATION SEED MIX ERNMW - 183, OR APPROVED EQUAL  
 APPLICATION RATE - 1/3 TO 1/2LB./1000 SF  
 SHALLOW AREAS - SHALLOW AREAS SHALL BE PLANTED WITH A MIX OF PLUGS. PLUGS SHALL BE SPACED 36" O.C. AND SHALL BE A RANDOM MIX OF THE FOLLOW VARIETIES:

| SCIENTIFIC NAME:     | COMMON NAME:      |
|----------------------|-------------------|
| Peltandra virginica  | Arrow arum        |
| Sagittaria latifolia | Arrowhead         |
| Scirpus acutus       | Hardstem Bulrush  |
| Pontederia cordata   | Pickelweed        |
| Scirpus validus      | Soft-stem Bulrush |

SUPPLIER INFORMATION:  
 WILDFLOWER FARM SEED MIX: WILDFLOWER FARM (1-800-GRO-WILD)  
 ERNST SEED MIX & PLUGS: ERNST CONSERVATION SEEDS (1-800-873-3321)

- SHALLOW PLANTING AREA
- RIPARIAN/FLOODPLAIN PLANTING ZONE
- UPLAND PLANTING ZONE

# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
|      |          |       |
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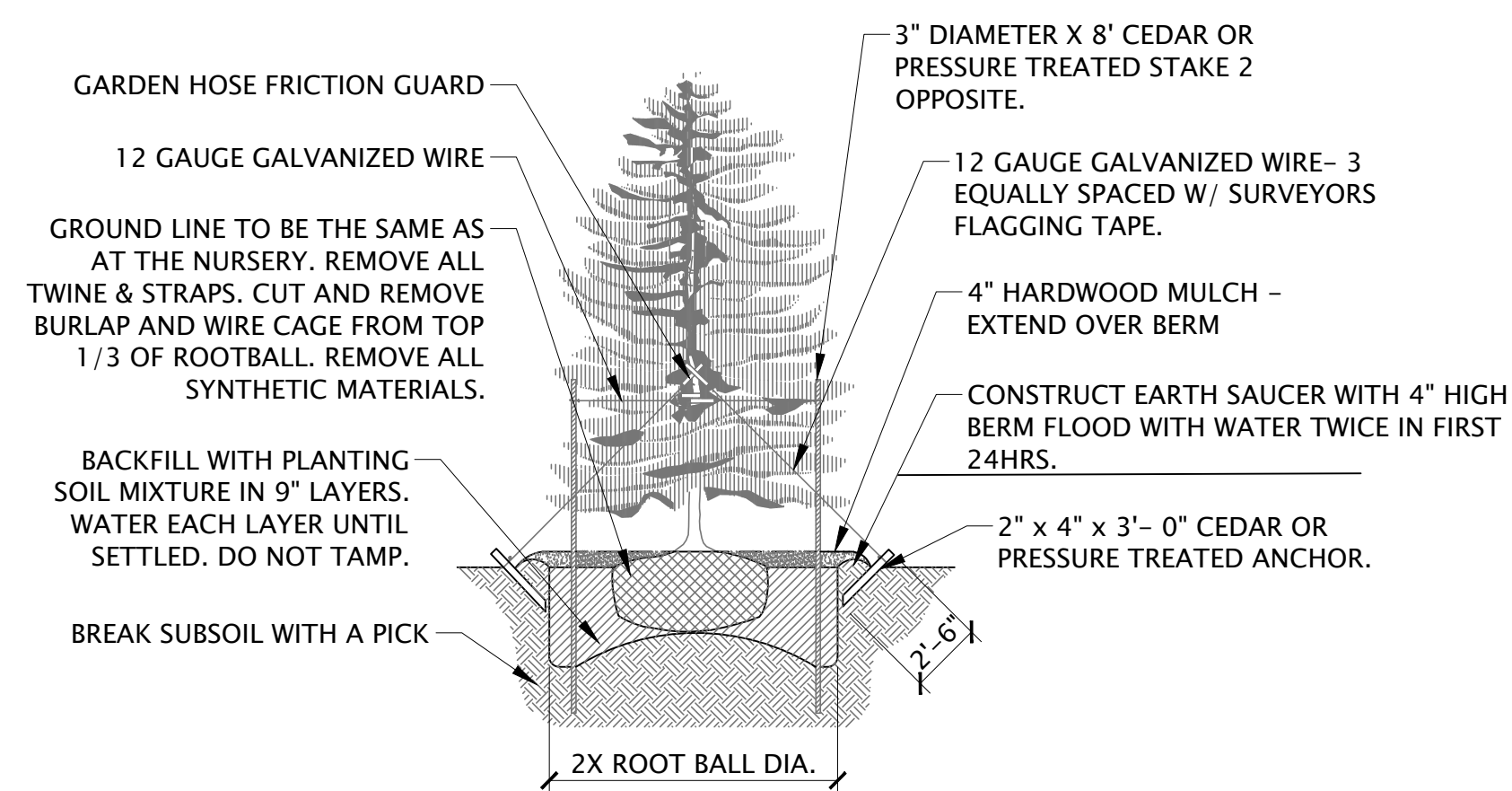
Date: 2024-12-16

Details  
C-702



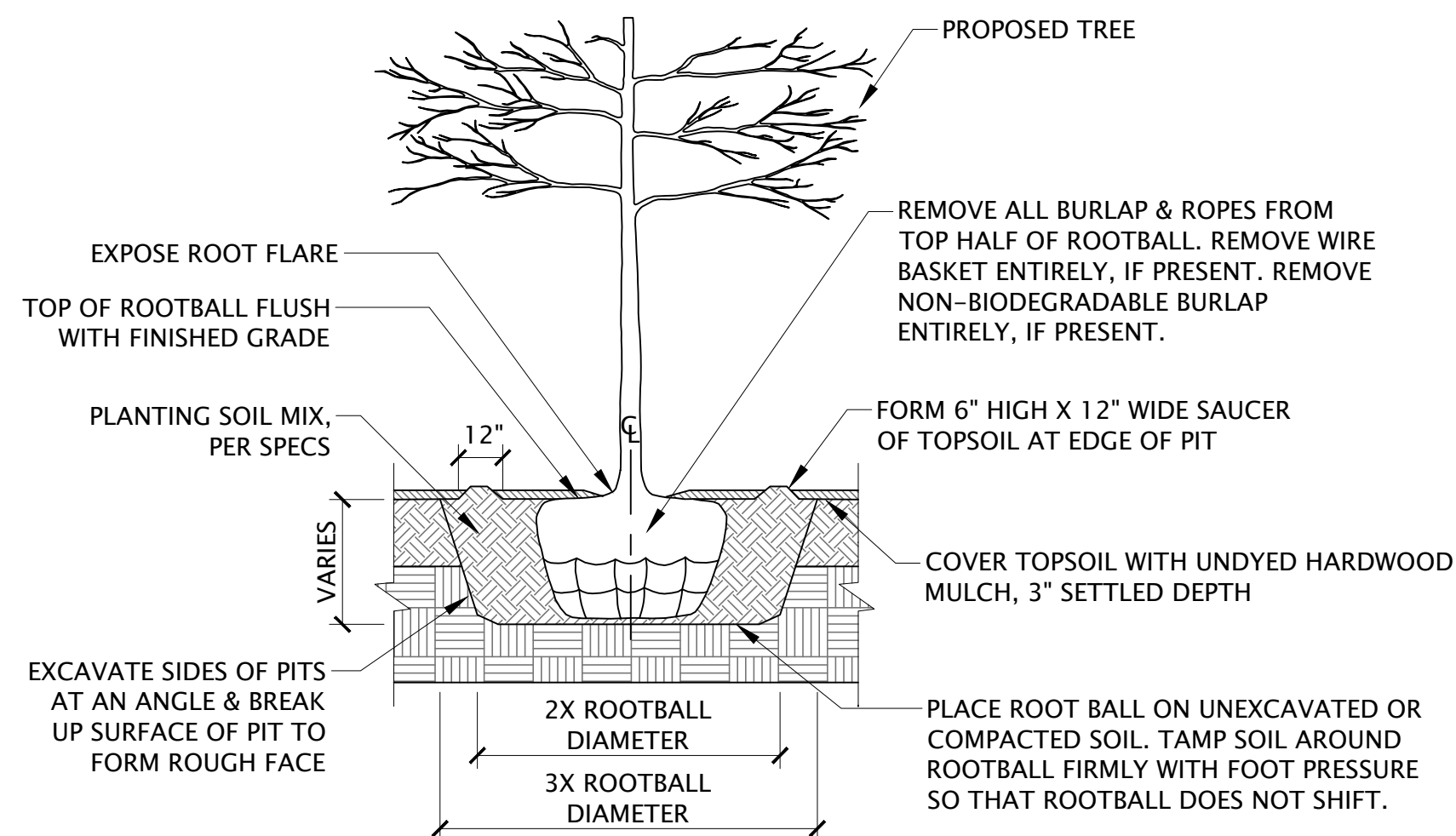


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CONSTRUCTION

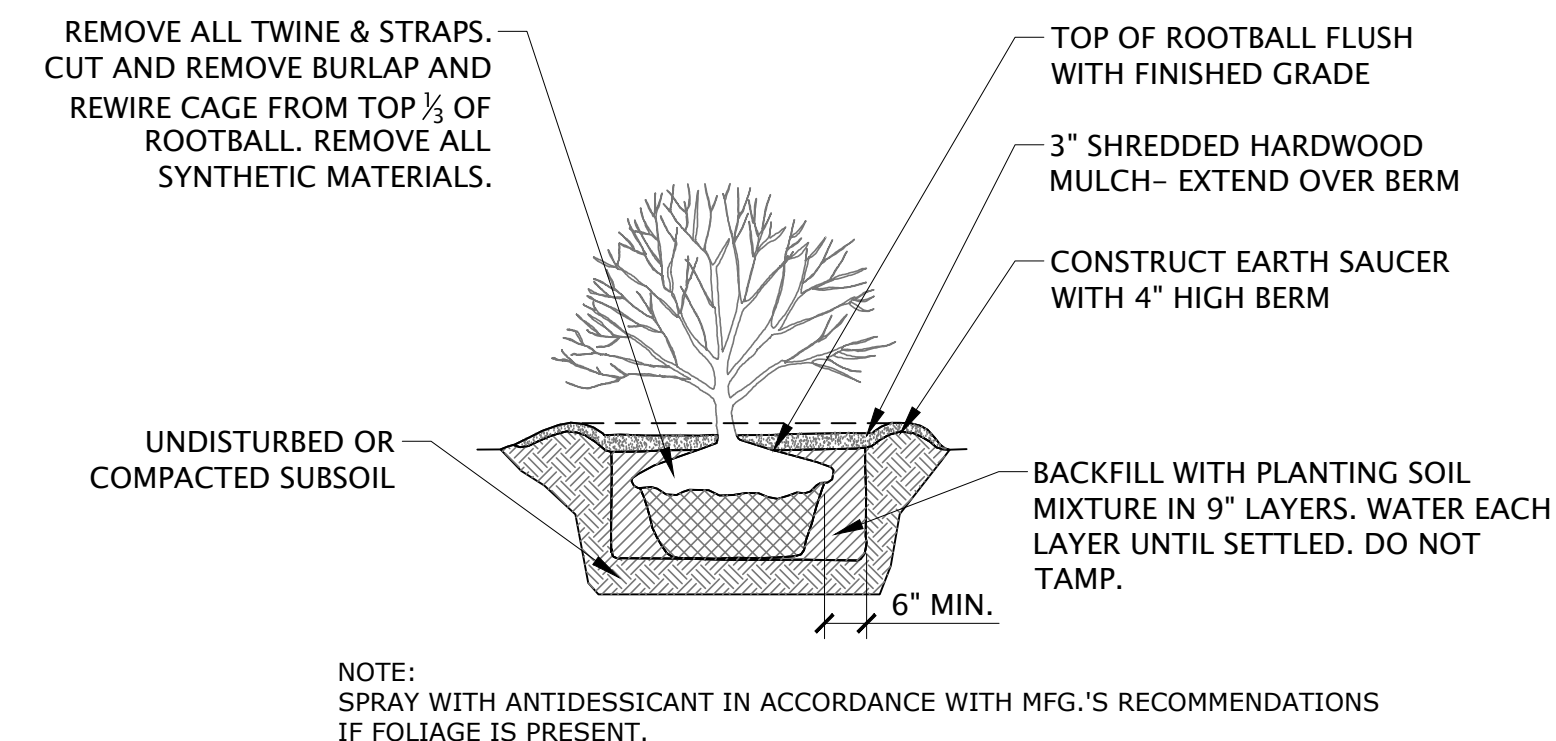


- NOTES:
1. SPRAY WITH ANTIDESSICANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS.
  2. TREES LESS THAN 3" CALIPER SHALL BE STAKED.
  3. TREES GREATER THAN 3" CALIPER AND UP SHALL BE GUYED AND ANCHORED.
  4. IF PROVIDED, STAKES SHALL BE REMOVED AT THE END OF THE FIRST GROWING SEASON AFTER PLANTING.

1 EVERGREEN TREE PLANTING  
C-704 SCALE: NOT TO SCALE



2 DECIDUOUS TREE PLANTING  
C-704 SCALE: NOT TO SCALE



3 SHRUB PLANTING  
C-704 SCALE: NOT TO SCALE

# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
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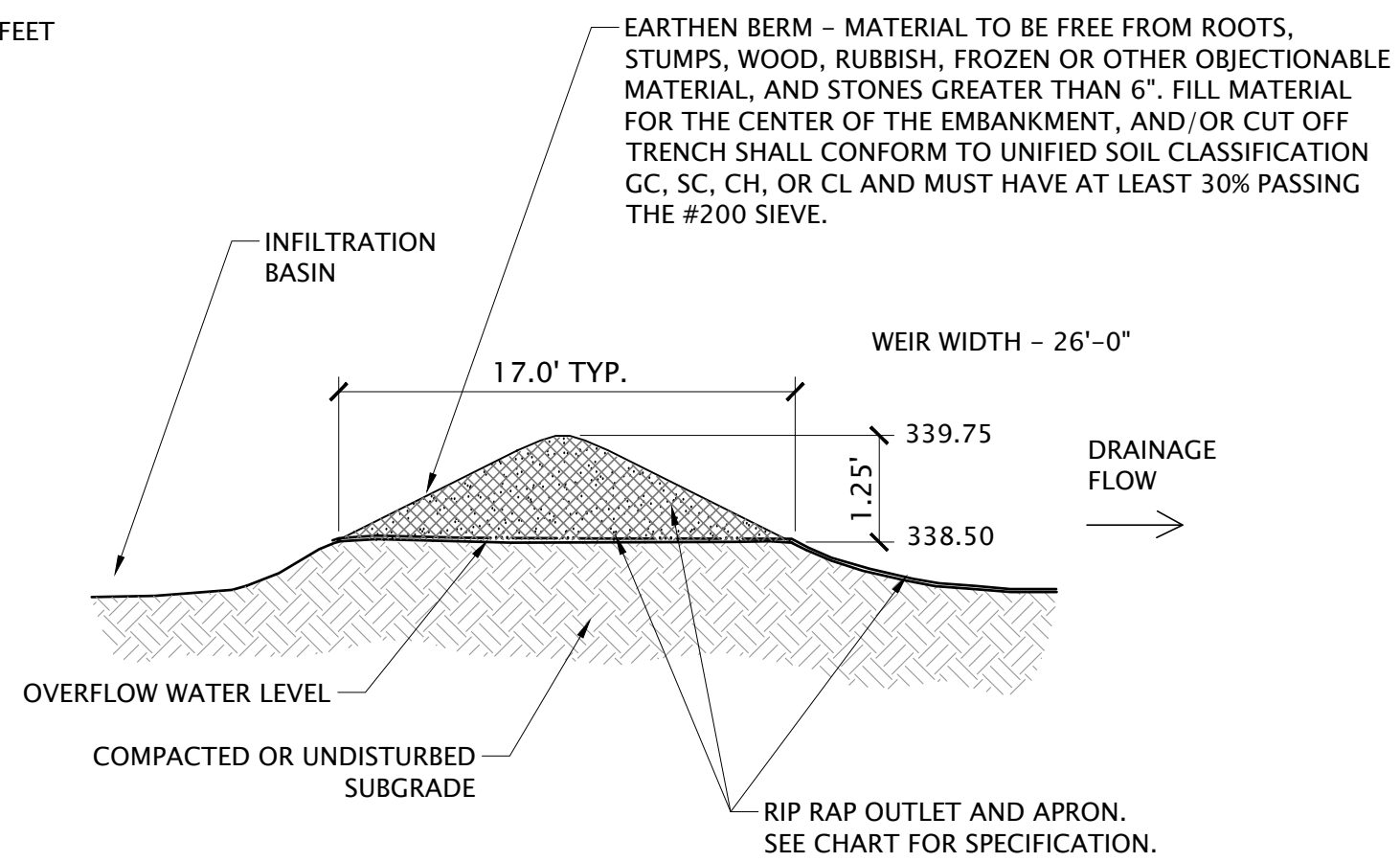
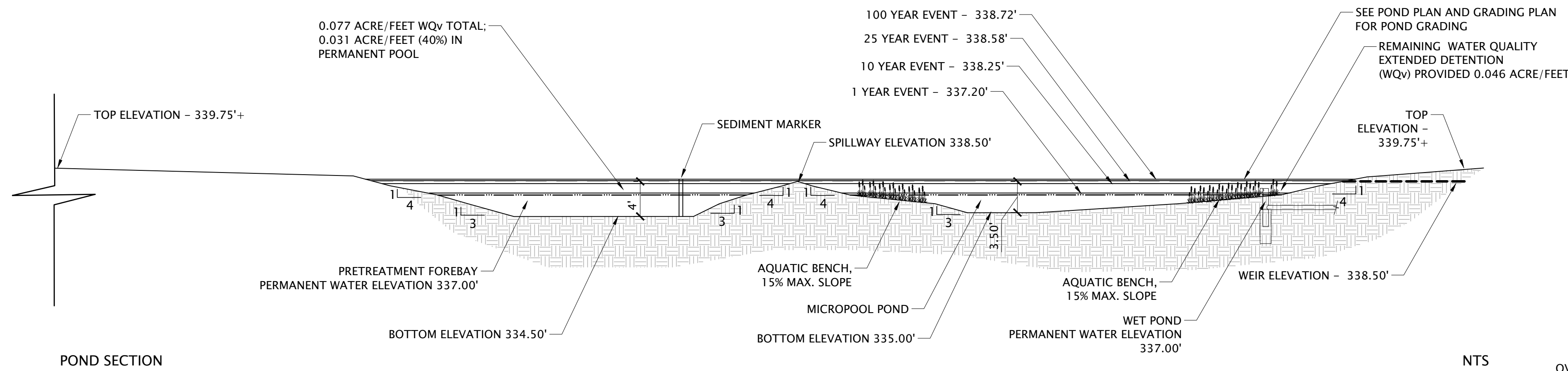
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Date: 2024-12-16

Details  
C-704

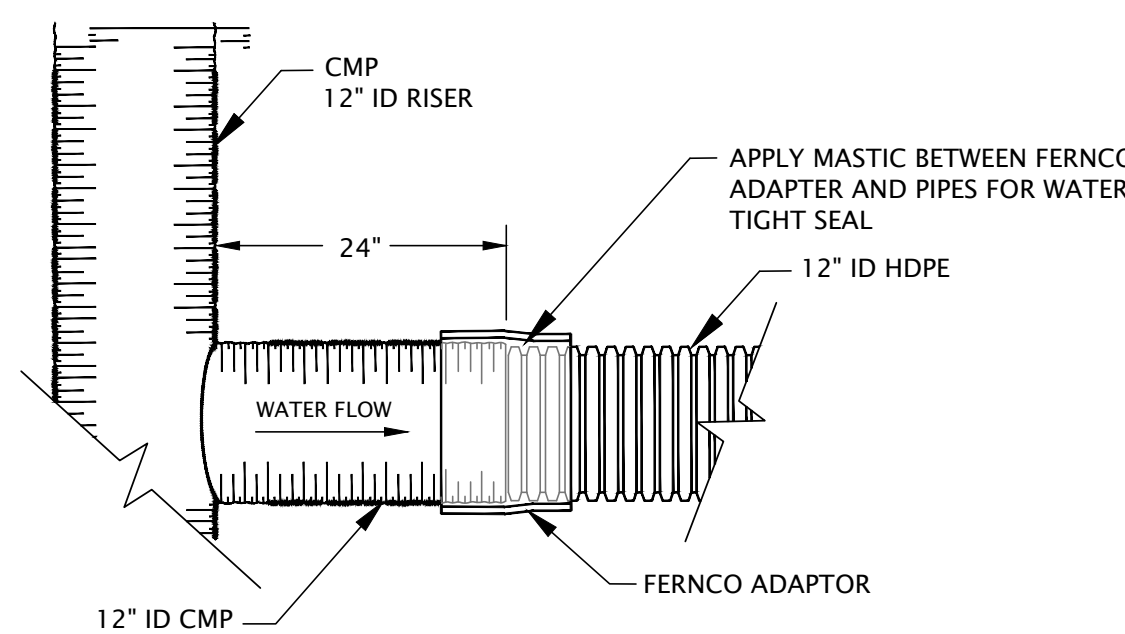
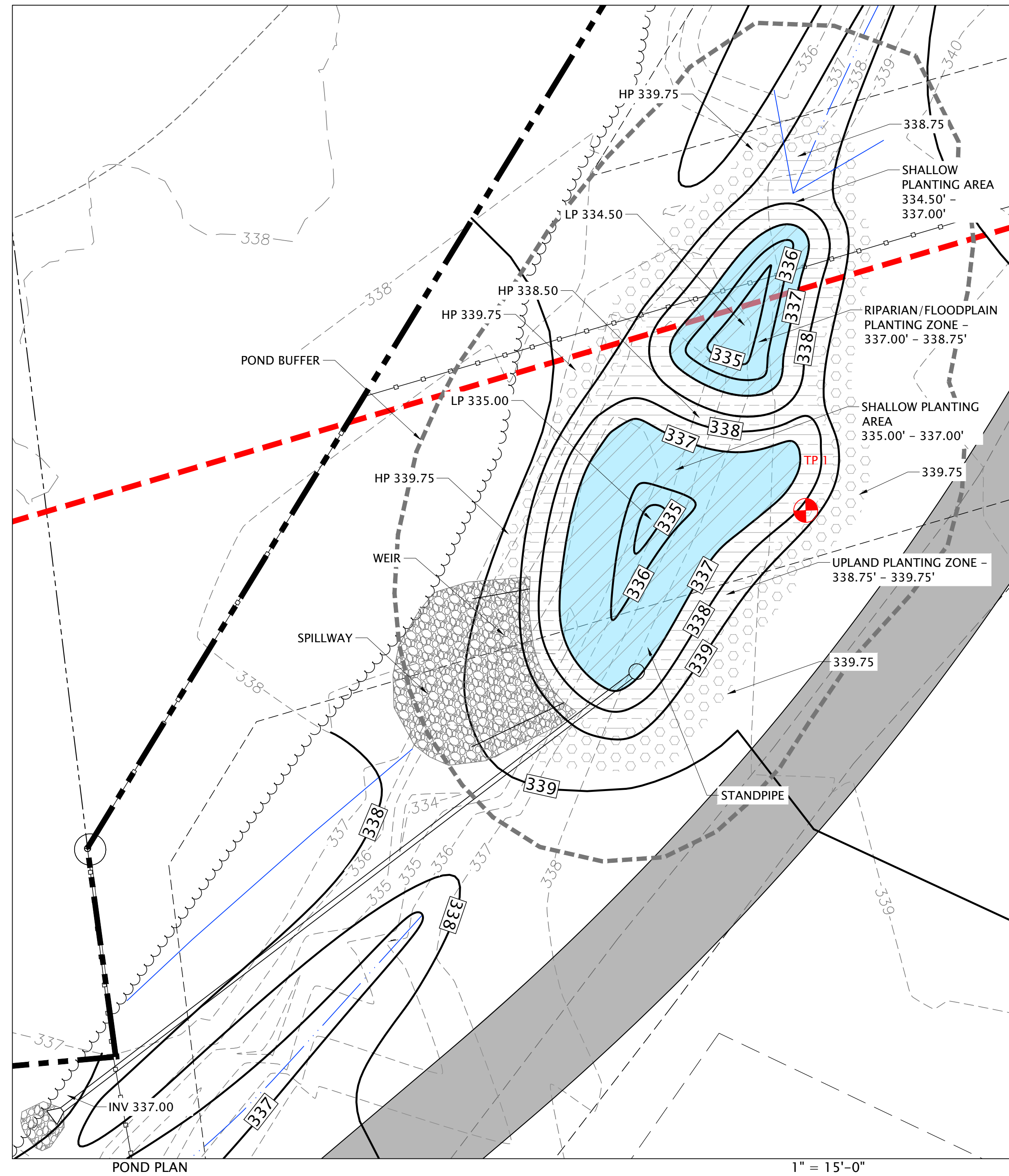
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NOT FOR  
CONSTRUCTION



| WEIR APRON RIP RAP SIZING |            |                                 |                   |              |             |                      |
|---------------------------|------------|---------------------------------|-------------------|--------------|-------------|----------------------|
| STRUCTURE                 | INVERT OUT | RIP RAP SIZE (d <sub>50</sub> ) | BLANKET THICKNESS | APRON LENGTH | APRON WIDTH | DISCHARGE 100-YR CFS |
| POND 4P<br>WEIR APRON     | 311.68     | 7"                              | 16"               | 12' MIN.     | 26' MIN.    | 7.28                 |

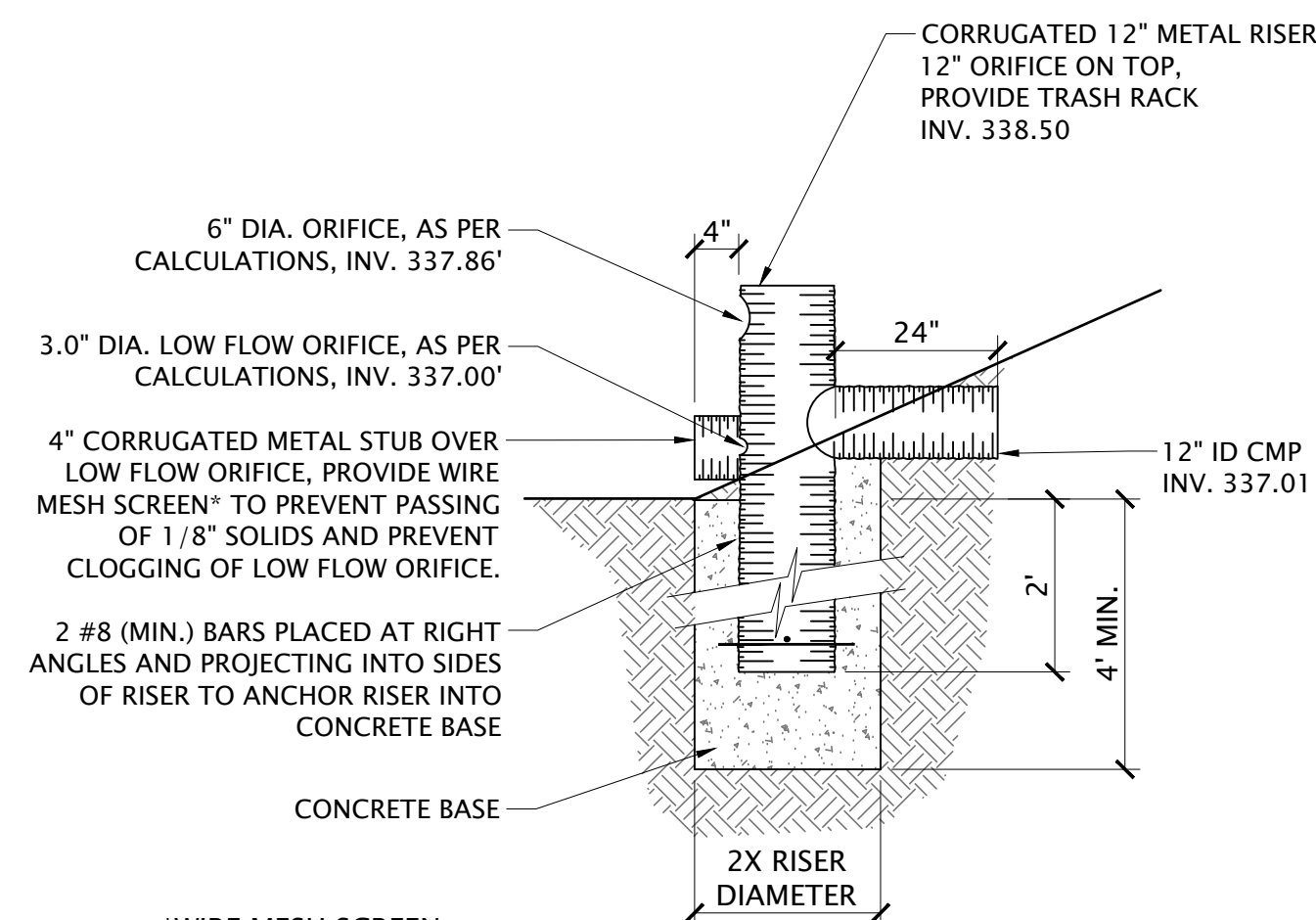
POND WEIR & SPILLWAY

NTS



CMP STANDPIPE TO HDPE CONNECTION

NTS



CMP STANDPIPE DETAIL

NTS

**POND PLANTING SPECIFICATIONS**  
THE PONDS SHALL BE SEEDED WITH THE FOLLOWING MIXES:  
UPLAND ZONE - WILDFLOWER FARM DEER RESISTANT SEED MIX #50017, OR APPROVED EQUAL  
APPLICATION RATE - 1/2 LB./1000 SF  
RIPARIAN/FLOODPLAIN ZONE - ERNST CONSERVATION SEED MIX ERNMW - 183, OR APPROVED EQUAL  
APPLICATION RATE - 1/3 TO 1/2 LB./1000 SF  
SHALLOW AREAS - SHALLOW AREAS SHALL BE PLANTED WITH A MIX OF PLUGS. PLUGS SHALL BE SPACED 36" O.C. AND SHALL BE A RANDOM MIX OF THE FOLLOW VARIETIES:

|                      |                   |
|----------------------|-------------------|
| SCIENTIFIC NAME:     | COMMON NAME:      |
| Peltandra virginica  | Arrow arum        |
| Sagittaria latifolia | Arrowhead         |
| Scirpus acutus       | Hardstem Bulrush  |
| Pontederia cordata   | Pickereelweed     |
| Scirpus validus      | Soft-stem Bulrush |

**SUPPLIER INFORMATION:**  
WILDFLOWER FARM SEED MIX: WILDFLOWER FARM (1-800-GRO-WILD)  
ERNST SEED MIX & PLUGS: ERNST CONSERVATION SEEDS (1-800-873-3321)

- SHALLOW PLANTING AREA
- RIPARIAN/FLOODPLAIN PLANTING ZONE
- UPLAND PLANTING ZONE

# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
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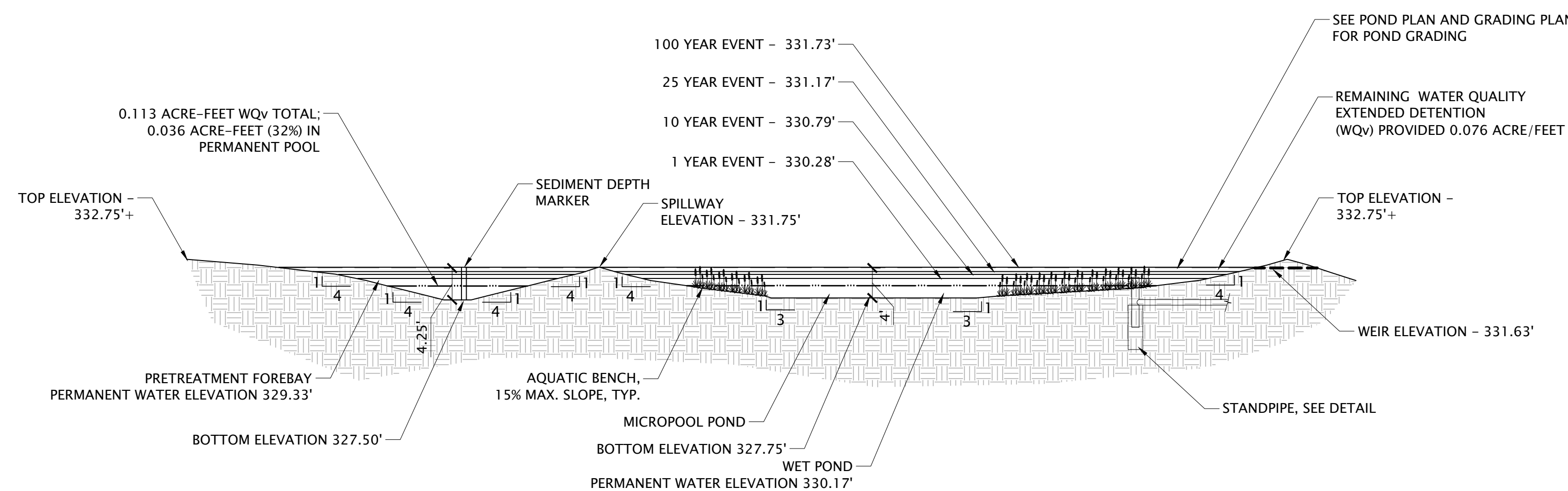
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Project No. 420-1096

Date: 2024-12-16

## Details C-705

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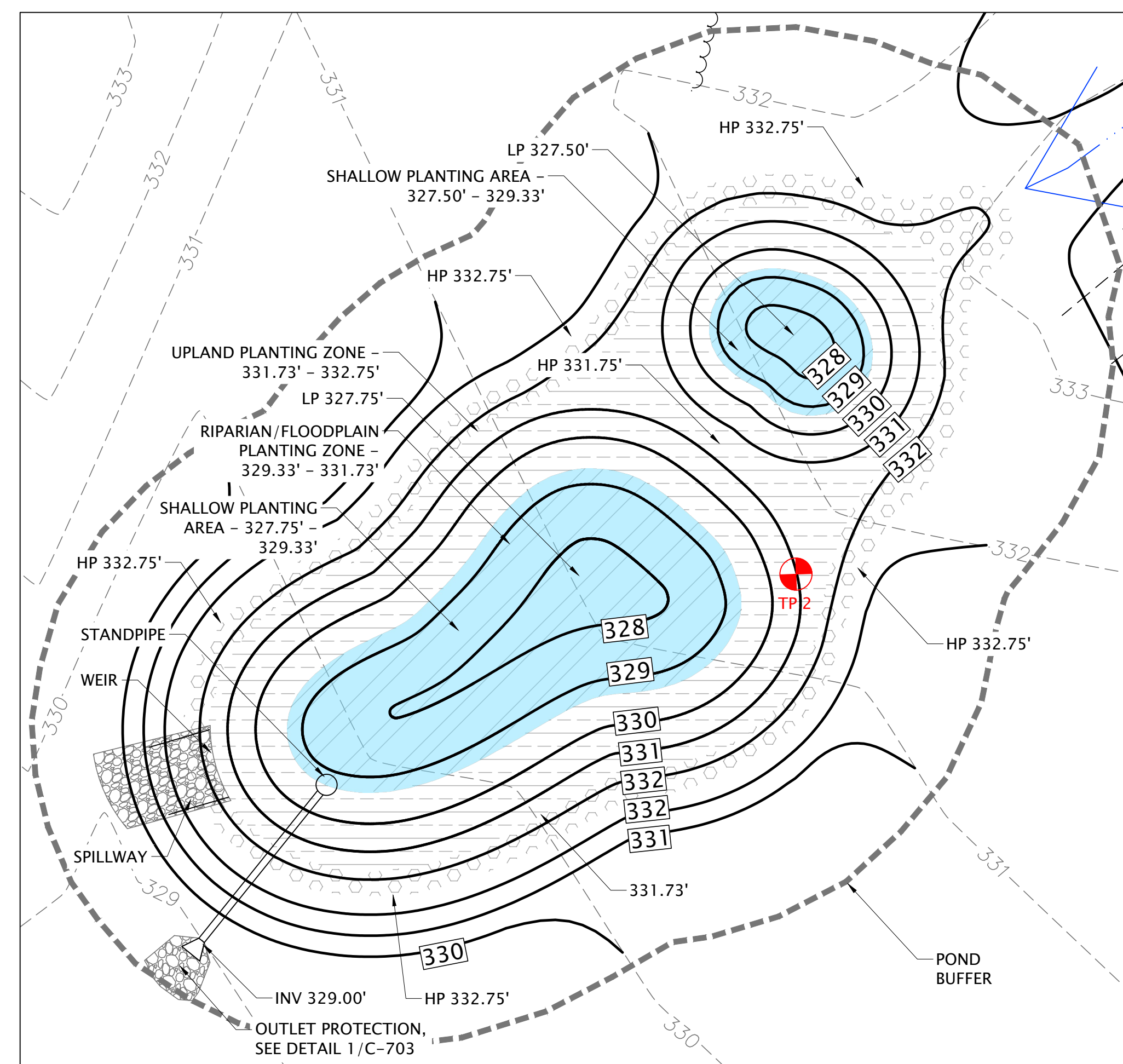
WEIR APRON RIP RAP SIZING

| STRUCTURE          | INVERT OUT | RIP RAP SIZE (d <sub>50</sub> ) | BLANKET THICKNESS | APRON LENGTH | APRON WIDTH | DISCHARGE 100-YR CFS |
|--------------------|------------|---------------------------------|-------------------|--------------|-------------|----------------------|
| POND 6P WEIR APRON | 331.63     | 4"                              | 9"                | 8' MIN.      | 10' MIN.    | 0.08                 |

POND WEIR & SPILLWAY NTS

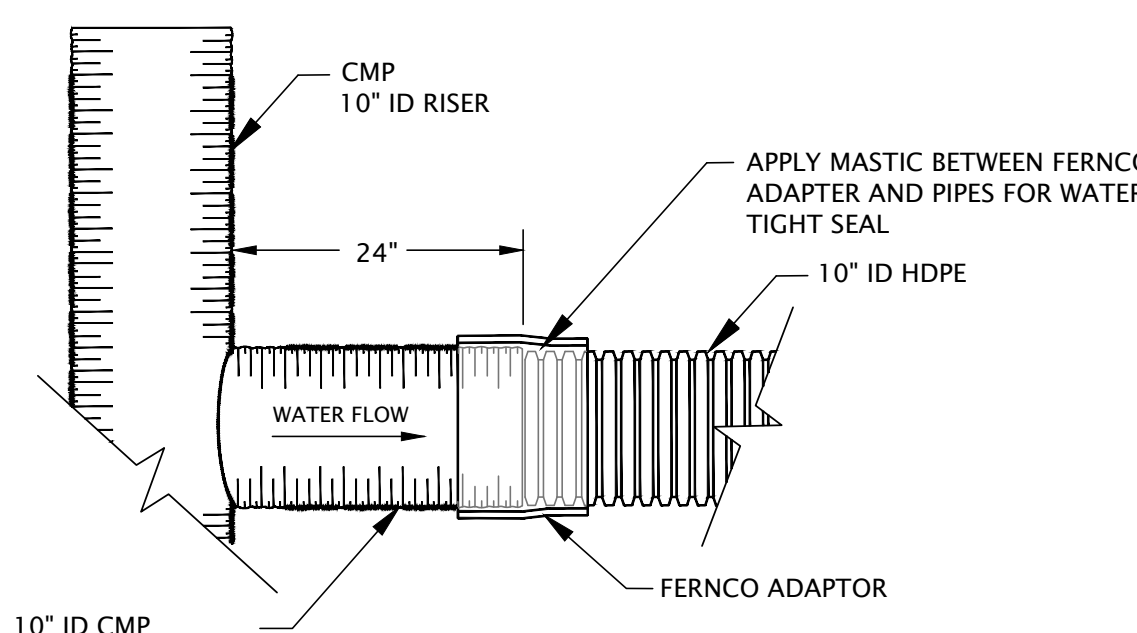
POND SECTION

NTS



POND PLAN

1" = 15'-0"



CMP STANDPIPE TO HDPE CONNECTION

NTS

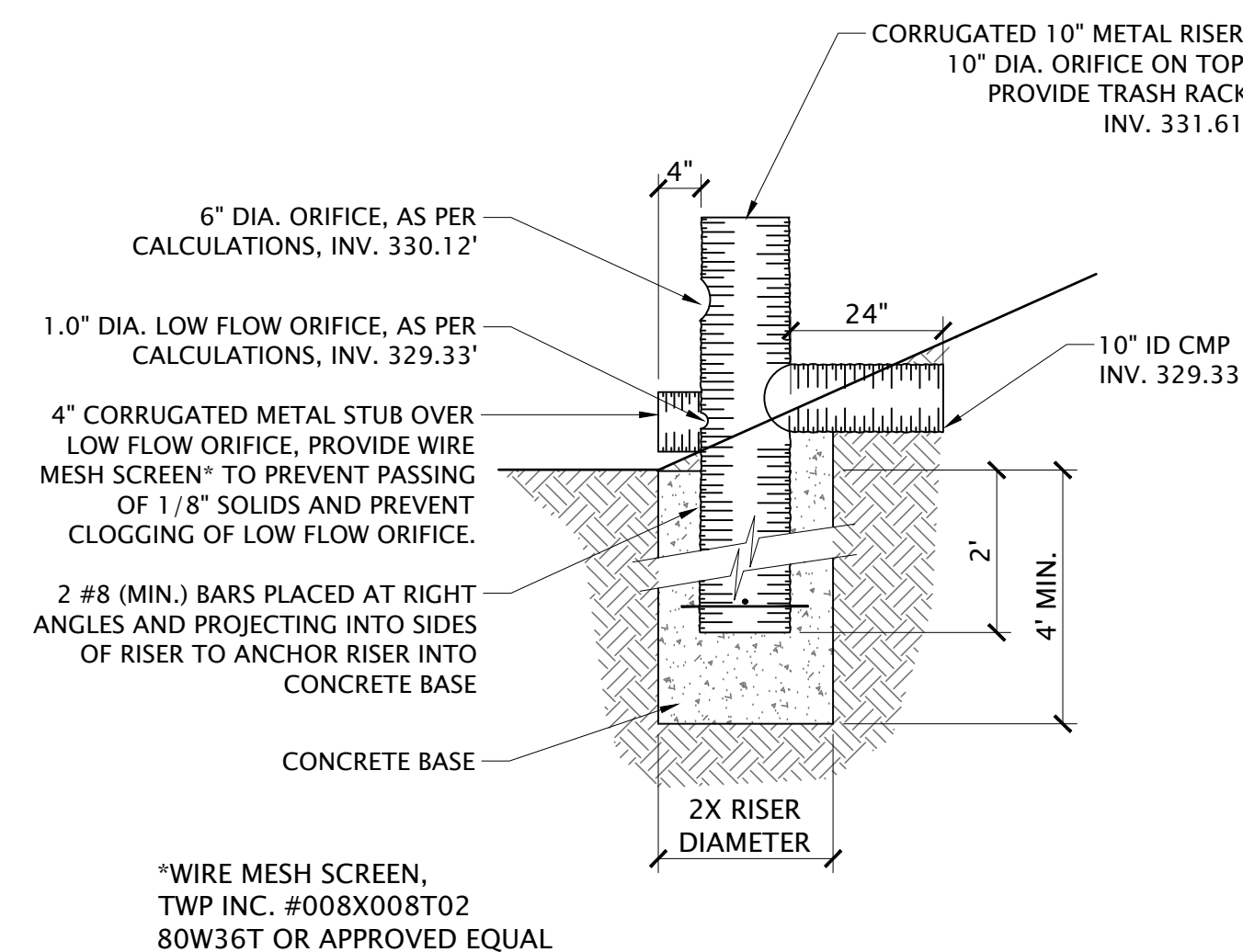
POND PLANTING SPECIFICATIONS

THE PONDS SHALL BE SEEDED WITH THE FOLLOWING MIXES:  
UPLAND ZONE - WILDFLOWER FARM DEER RESISTANT SEED MIX #50017, OR APPROVED EQUAL  
APPLICATION RATE - 1/2 LB./1000 SF  
RIPARIAN/FLOODPLAIN ZONE - ERNST CONSERVATION SEED MIX ERNMW - 183, OR APPROVED EQUAL  
APPLICATION RATE - 1/3 TO 1/2 LB./1000 SF  
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|----------------------|-------------------|
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| Sagittaria latifolia | Arrowhead         |
| Scirpus acutus       | Hardstem Bulrush  |
| Pontederia cordata   | Pickrelweed       |
| Scirpus validus      | Soft-stem Bulrush |

SUPPLIER INFORMATION:  
WILDFLOWER FARM SEED MIX: WILDFLOWER FARM (1-800-GRO-WILD)  
ERNST SEED MIX & PLUGS: ERNST CONSERVATION SEEDS (1-800-873-3321)

- SHALLOW PLANTING AREA
- RIPARIAN/FLOODPLAIN PLANTING ZONE
- UPLAND PLANTING ZONE



CMP STANDPIPE DETAIL

NTS

\*WIRE MESH SCREEN, TWP INC. #008X008T02 80W36T OR APPROVED EQUAL

| Date | Revision | Drawn |
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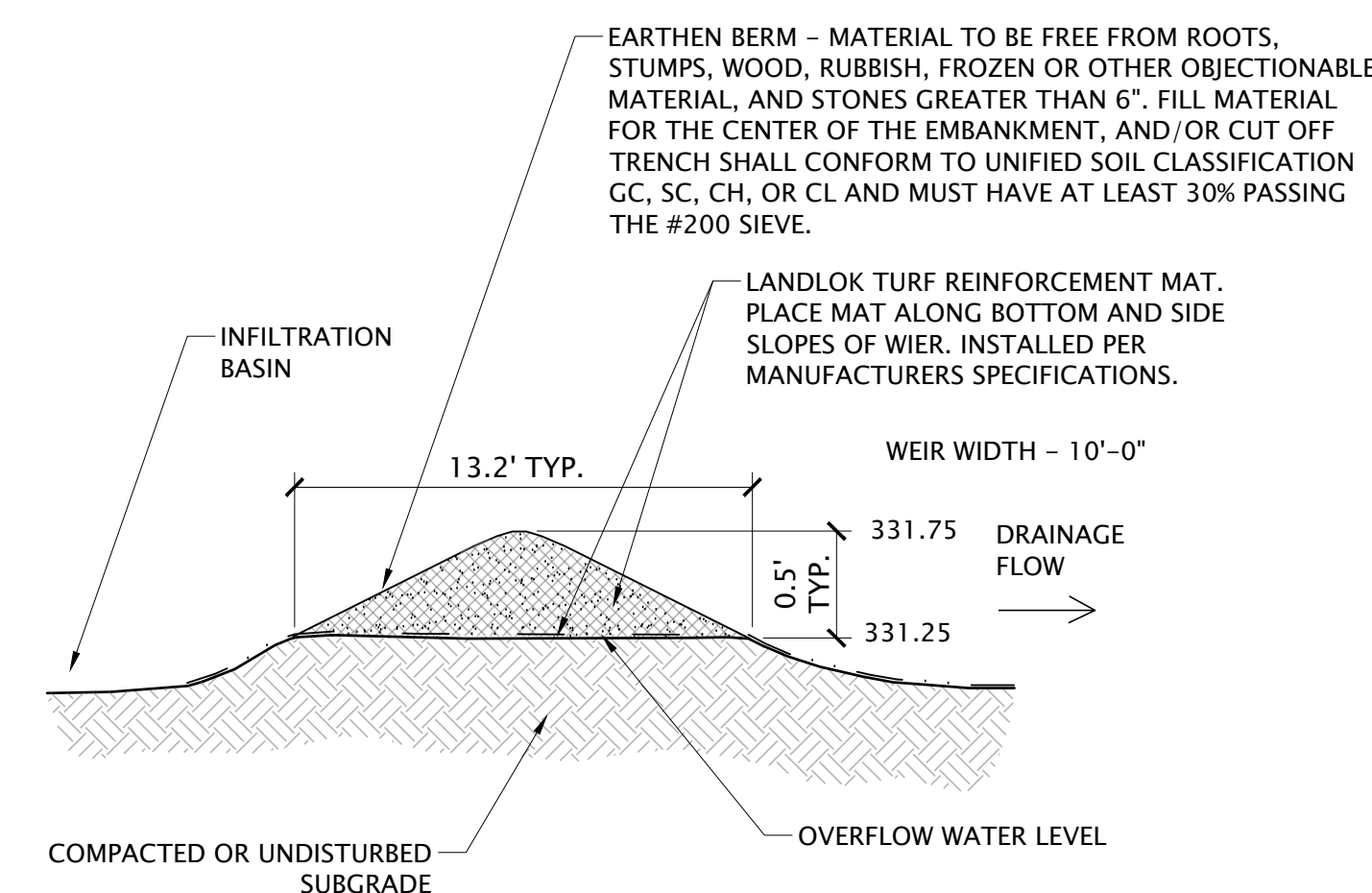
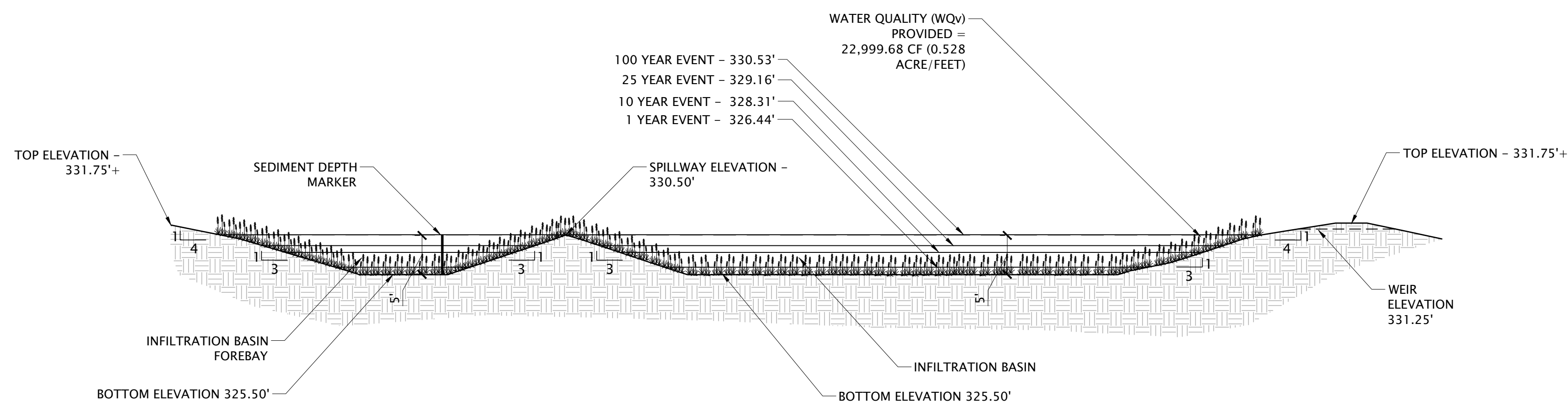
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Project No. 420-1096

Date: 2024-12-16

Details  
C-706

PRELIMINARY  
NOT FOR  
CONSTRUCTION



NO GROUNDWATER ENCOUNTERED TO A DEPTH OF 8'±

POND SECTION

NTS

| WEIR APRON RIP RAP SIZING |            |                                 |                   |              |             |                      |
|---------------------------|------------|---------------------------------|-------------------|--------------|-------------|----------------------|
| STRUCTURE                 | INVERT OUT | RIP RAP SIZE (d <sub>50</sub> ) | BLANKET THICKNESS | APRON LENGTH | APRON WIDTH | DISCHARGE 100-YR CFS |
| POND 6P WEIR APRON        | 331.25     | 4"                              | 9"                | 8' MIN.      | 10' MIN.    | 0.00                 |

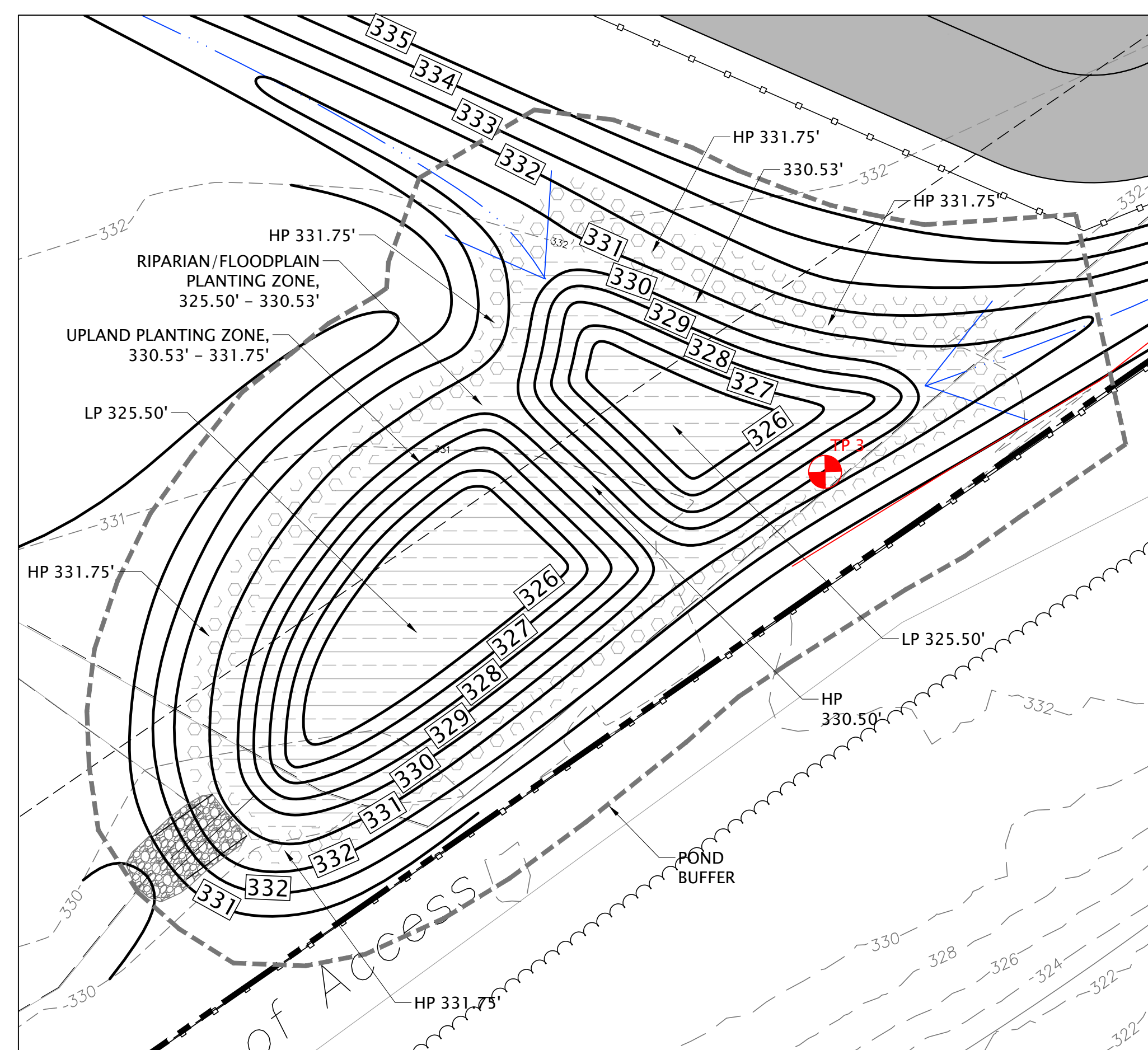
POND WEIR & SPILLWAY

NTS

POND PLANTING SPECIFICATIONS

THE PONDS SHALL BE SEEDED WITH THE FOLLOWING MIXES:  
 UPLAND ZONE - WILDFLOWER FARM DEER RESISTANT SEED MIX #50017, OR APPROVED EQUAL. APPLICATION RATE - 1/2 LB./1000 SF  
 RIPARIAN/FLOODPLAIN ZONE - ERNST CONSERVATION SEED MIX ERNMW - 183, OR APPROVED EQUAL. APPLICATION RATE - 1/3 TO 1/2LB./1000 SF  
 SUPPLIER INFORMATION:  
 WILDFLOWER FARM SEED MIX: WILDFLOWER FARM (1-800-GRO-WILD)  
 ERNST SEED MIX & PLUGS: ERNST CONSERVATION SEEDS (1-800-873-3321)

- RIPARIAN/FLOODPLAIN PLANTING ZONE
- UPLAND PLANTING ZONE



POND PLAN

1" = 20'-0"

1 INFILTRATION BASIN  
C-707 SCALE: NOT TO SCALE

| Date | Revision | Drawn |
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Date: 2024-12-16

Details  
C-707

PRELIMINARY  
NOT FOR  
CONSTRUCTION

# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
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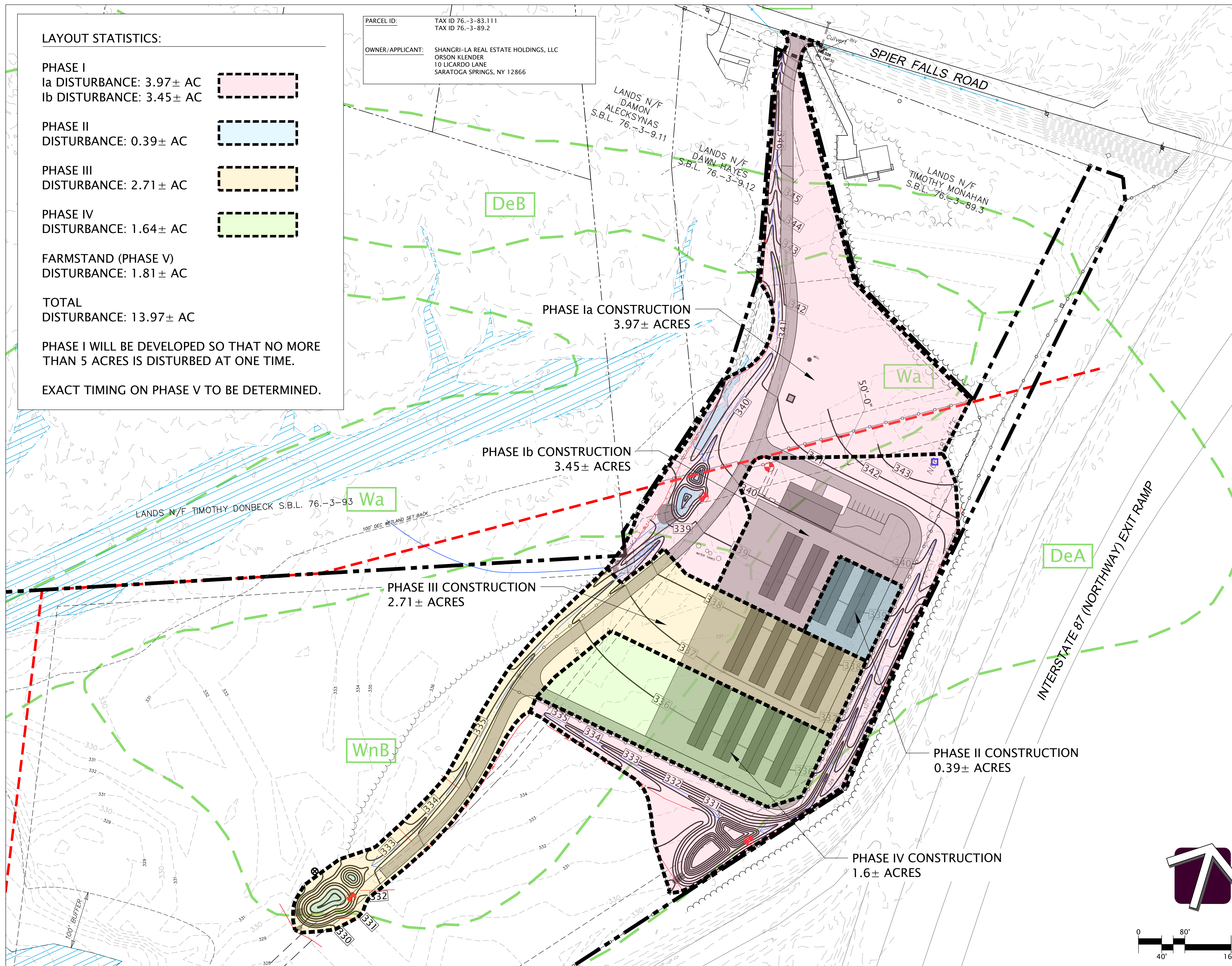
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Drawn By: WD      Checked By: PL

Project No. 420-1096

Date: 2024-12-16

## Greenhouses Phasing Plan PH-1



**CONVENTIONAL SYSTEM NOTES**

- DESIGN, CONSTRUCTION, MATERIAL STANDARDS, MINIMUM SEPARATION DISTANCES, AND INSPECTION REQUIREMENTS SHALL COMPLY WITH THE LATEST EDITION OF THE NEW YORK STATE DEPARTMENT OF HEALTH PUBLICATIONS: RURAL WATER SUPPLY AND NYCRR PART 75A WASTEWATER TREATMENT-INDIVIDUAL HOUSEHOLD SYSTEMS.
- BUILDER SHALL VERIFY GRADE OF SOIL PIPE AT BUILDING PRIOR TO CONSTRUCTION OF SYSTEM.
- ABSORPTION TRENCHES SHALL BE APPROXIMATELY 18"-24" DEEP.
- THE AREA IMMEDIATELY UP-SLOPE OF THE SYSTEM SHALL BE GRADED SO AS TO DIRECT ANY SURFACE RUNOFF AROUND THE SYSTEM.
- NO WELLS, PONDS, WATER COURSES OR NYSDEC WETLANDS EXIST WITHIN 100 FEET OF PROPOSED SEWAGE DISPOSAL SYSTEM.
- NO ROOF, FOOTING, FLOOR, COOLING WATER, BACKWASH DRAINS ETC. SHALL BE CONNECTED TO THE SEPTIC SYSTEM.
- OWNER IS TO BE PROVIDED A COPY OF THE APPROVED PLAN BY THE DESIGN ENGINEER.
- THERE SHALL BE NOT CHANGES ON THESE PLANS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- PROJECT IN NOT WITHIN WATERSHED DISTRICT.
- PROJECT IS NOT WITHIN 100 YEAR FLOOD PLAIN.
- NO VEHICULAR PARKING OR TRAFFIC SHALL BE ALLOWED ON ANY PORTION OF THE SEPTIC SYSTEM.
- A LICENSED ENGINEER/ARCHITECT SHALL SUPERVISE CONSTRUCTION IN ACCORDANCE WITH THE APPROVED PLAN AND SUPPLEMENTAL DATA.
- THE UDIG NY SHALL BE CONSULTED WITH PRIOR TO ANY EXCAVATION ASSOCIATED WITH APPROVED PORTIONS OF THE PROJECT.
- SYSTEM IS NOT DESIGNED TO ACCOMMODATE WASTEWATER FROM GARBAGE GRINDER OR HOT TUB.

**COVERING**

- PLACE 4 IN. MINIMUM OF GOOD QUALITY TOPSOIL OVER THE ENTIRE SYSTEM AND SEED AND MULCH.

**INSPECTION**

THE ENGINEER SHALL MAKE THE FOLLOWING INSPECTIONS OF THE DESIGNED SYSTEM:

- AFTER PLACEMENT OF PIPING, TANKS PRIOR TO ANY BACKFILL.
- COMPLETION INCLUDING GRADING, PLACEMENT OF TOPSOIL & SEEDING.
- IT IS THE OWNERS RESPONSIBILITY TO CONTACT THE ENGINEER FOR ABOVE NOTED INSPECTIONS. IF WORK COMMENCES WITHOUT THE NOTED INSPECTIONS, THE ENGINEER WILL NOT BE ABLE TO CERTIFY THE SYSTEM AS BUILT PER PLAN AND THE TOWN WILL NOT BE ABLE TO GRANT A CERTIFICATE OF OCCUPANCY (C.O.).

**DESIGN CRITERIA**

- 15 EMPLOYEES AT 15 GALLONS PER DAY EQUALS 225 GALLONS PER DAY FLOW
- EXISTING TERRAIN APPROXIMATELY 3-5 PERCENT SLOPE.
- PERCOLATION RATE: 0-10 MIN/INCH ON-SITE MATERIAL, APPLICATION RATE 0.90 GPD/S.F. ACTUAL PERCOLATION RATE AT 20" DEPTH = 3 MINUTES/INCH SOIL: MEDIUM BROWN SAND, GROUNDWATER ENCOUNTERED @ 60"

**CALCULATIONS:**

1. REQUIRED LATERAL LENGTH:  $(225 \text{ GPD}) / (0.90 \text{ GPD/SF}) (2 \text{ LF}/2\text{SF}) = 125 \text{ LF}$ .  
USE (3) 50' LATERALS = 150 LF.

**SYSTEM STRUCTURES**

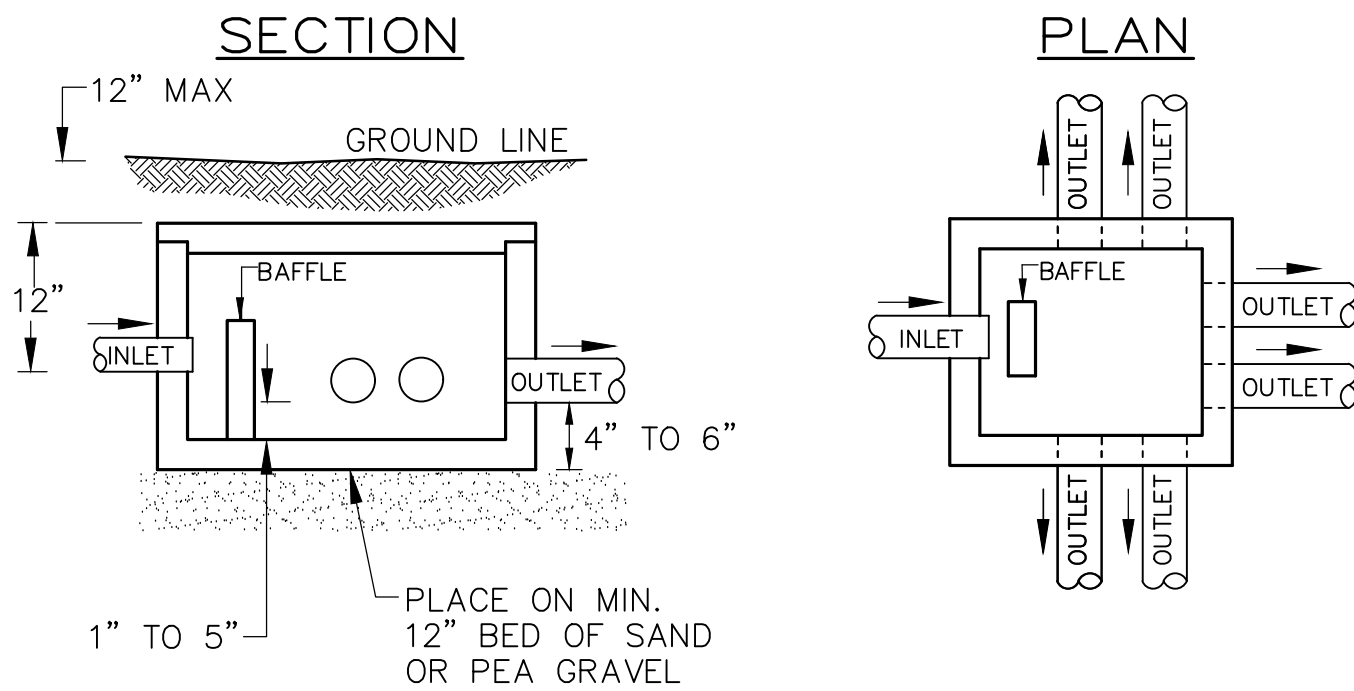
- SEPTIC TANK SHALL BE 1250 GAL. DUAL COMPARTMENT SEAMLESS CONCRETE TANK BY GUARDIAN CONCRETE, INC. OR EQUIVALENT.
- DISTRIBUTION BOX TO BE PRECAST CONCRETE BOX AND COVER DB-6 (6) OUTLET BY GUARDIAN CONCRETE, INC. OR EQUIVALENT.

**PIPING**

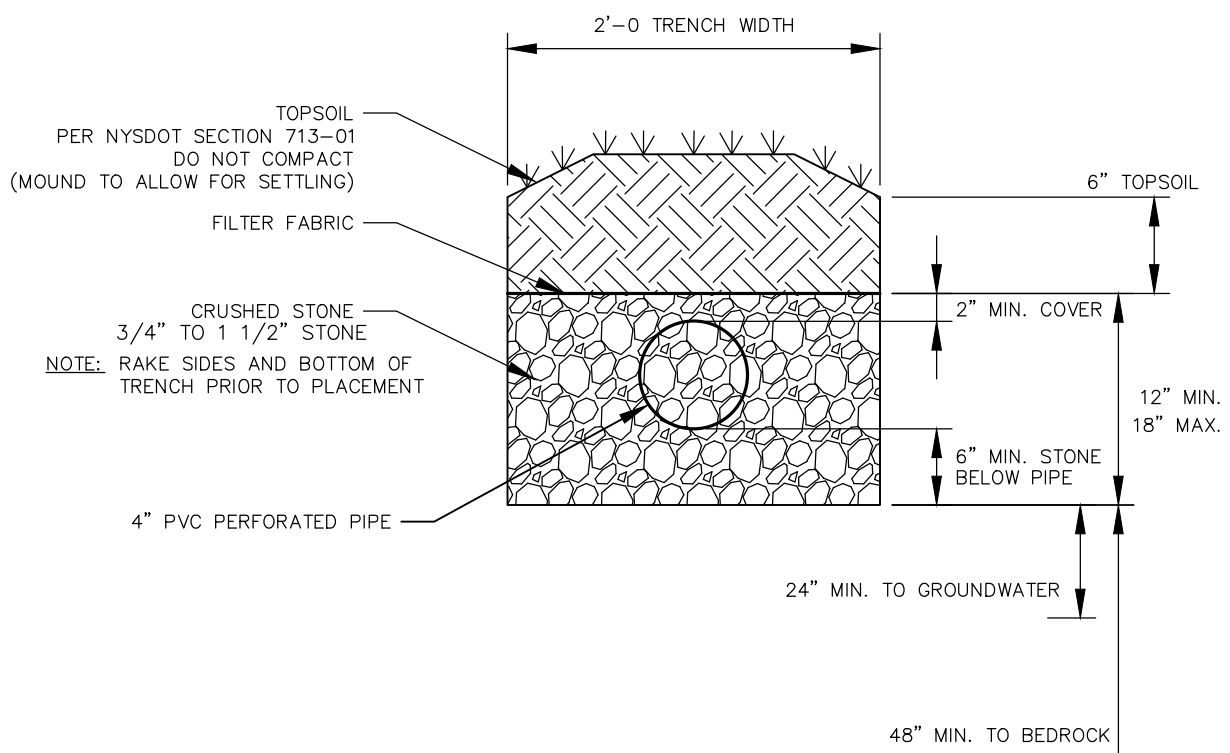
- STRUCTURE TO SEPTIC TANK SHALL BE 4" SCH 40 PCV WITH TIGHT JOINTS, MINIMUM SLOPE = 1/4 IN. PER FOOT.
- SEPTIC TANK TO DISTRIBUTION BOX SHALL BE 4" SCH 40 PVC WITH TIGHT JOINTS, MINIMUM SLOPE = 1/8 IN. PER FOOT.
- DISTRIBUTION BOX TO LATERALS SHALL BE 4" SDR35 PVC WITH TIGHT JOINTS, MINIMUM SLOPE = 1/8 IN. PER FOOT.
- DISTRIBUTION LATERALS SHALL BE 4" PERFORATED PVC WITH TIGHT JOINTS, SLOPE: 1/32 - 1/16 IN. PER FOOT.

**\*\* MINIMUM SEPARATION DISTANCES \*\***

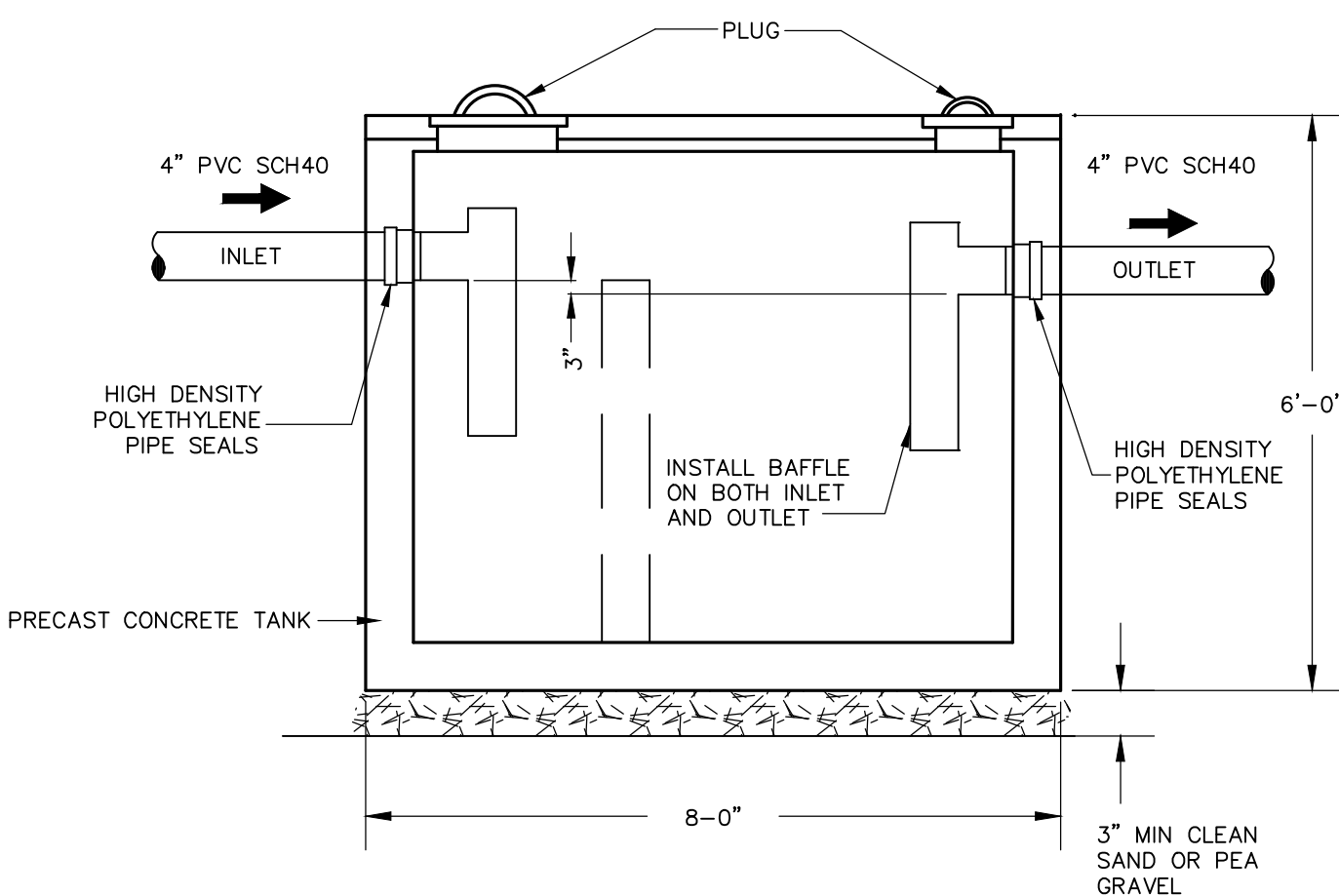
|  |           |
|--|-----------|
| HOUSE TO SEPTIC TANK   | 10' MIN   |
| HOUSE TO TOE OF FILL, D-BOX, ABSORPTION FIELD                                      | 20' MIN   |
| PRIVATE WELL TO TOE OF FILL  | *100' MIN |
| PRIVATE WELL TO D-BOX  | 100' MIN  |
| PRIVATE WELL TO SEPTIC TANK  | 50' MIN   |
| ABSORPTION FIELD TO STREAM, RIVER OR WETLANDS                                      | 100' MIN. |
| PROPERTY LINE TO TOE OF FILL, BUILDING SEWER, SEPTIC TANK, D-BOX, ABSORPTION FIELD | 10' MIN   |
| DRAINAGE DITCH TO SEPTIC TANK  | 10' MIN   |
| DRAINAGE DITCH TO D-BOX, ABSORPTION FIELD  | 20' MIN   |
| WASTEWATER TREATMENT SYSTEM AND FRACTURED BEDROCK                                  | 100' MIN  |
| *200' MIN. WHEN WELL IS DOWNGRADIENT OF ABSORPTION FIELD                           |           |



3 TYPICAL PRECAST DISTRIBUTION BOX DETAIL  
GUARDIAN CONCRETE, INC. OR ACCEPTABLE EQUAL N.T.S.



4 TYPICAL TRENCH SECTION  
(NOT TO SCALE)

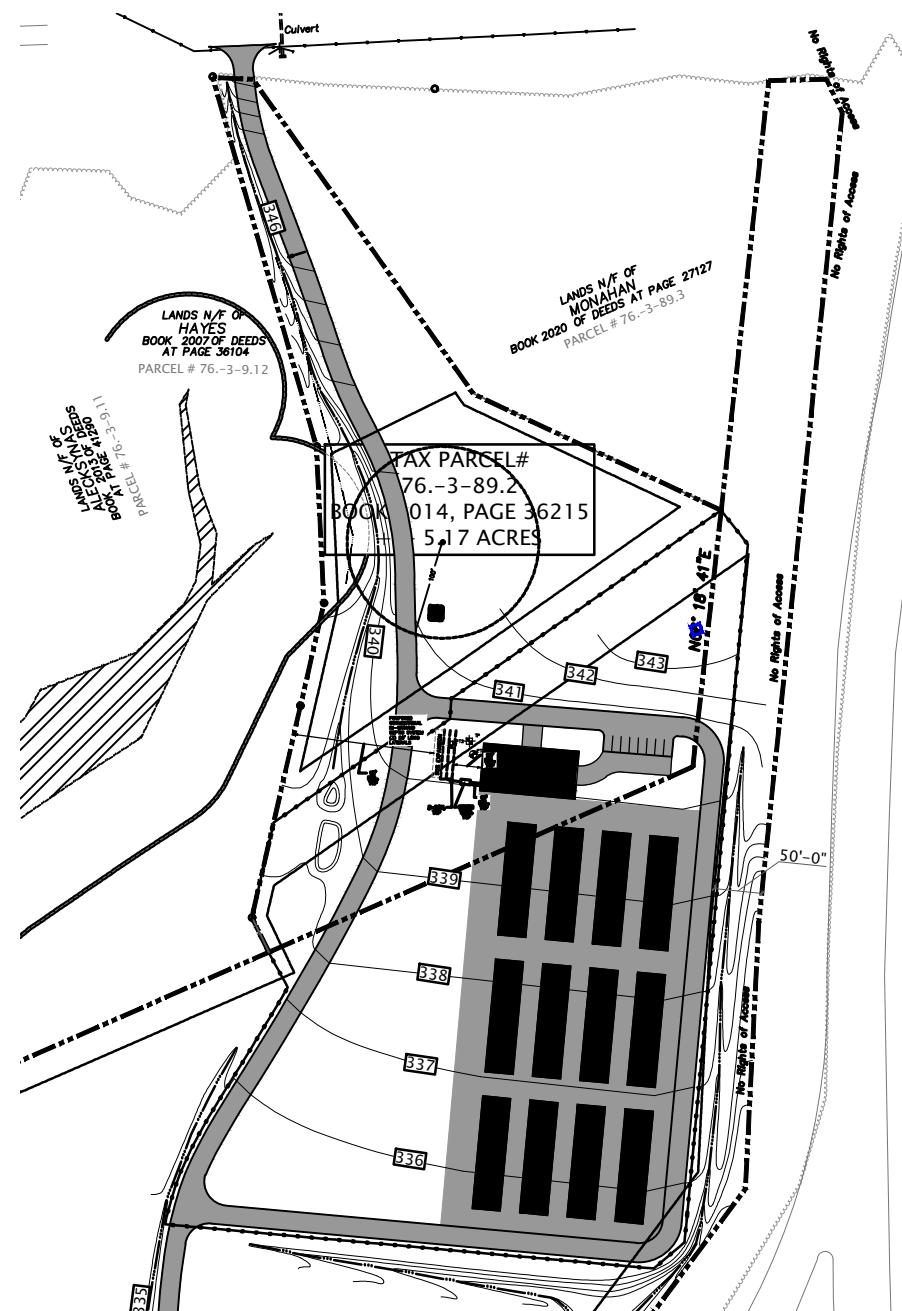


5 1.250 GALLON DUAL COMPARTMENT SEPTIC TANK (SEAMLESS)  
GUARDIAN CONCRETE INC. OR EQUIVALENT NOT TO SCALE

**OWNER/APPLICANT:**  
SHANGRI-LA REAL ESTATE HOLDINGS, LLC  
10 LICARDO LANE  
SARATOGA SPRINGS, NY 12866

NOTE: 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONTACT 811 DIG NY TO LOCATE ALL UNDERGROUND UTILITIES.

**TAX MAP ID:**  
76-3-89.3



2 OVERALL PLAN  
SCALE: 1"=200'

**PERCOLATION DATA**

| TEST NUMBER | PERC TEST DEPTH | STABILIZED PERC RATE |
|-------------|-----------------|----------------------|
| PT-1        | 20"             | 2MIN 53SEC           |
| PT-2        | 20"             | 3MIN 33SEC           |

**TEST PIT LOG**

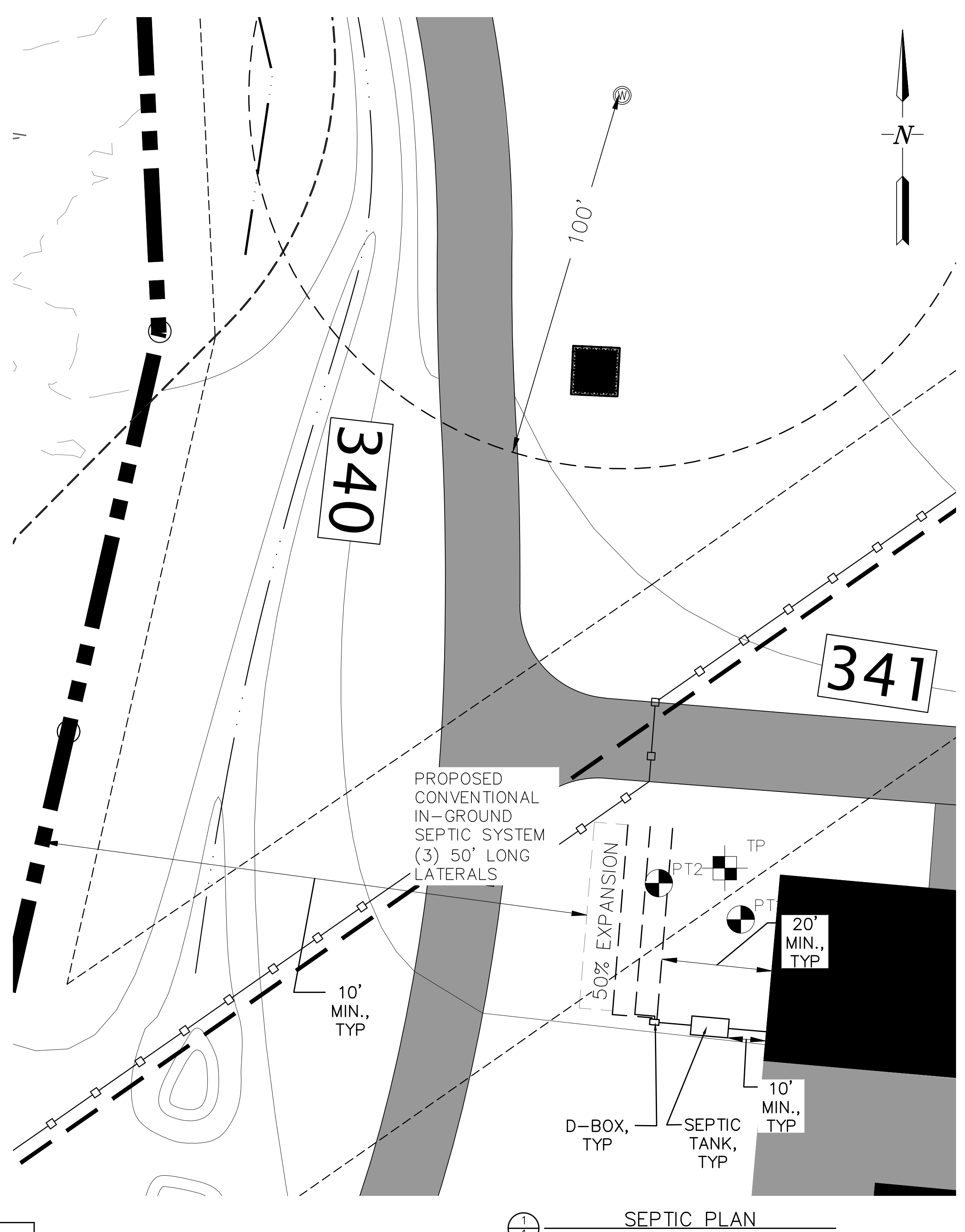
| TEST PIT NUMBER | DEPTH     | TEST PIT DATA                      |
|-----------------|-----------|------------------------------------|
| TP-1            | 0 - 60"   | MEDIUM BROWN SAND                  |
|                 | 60" - 96" | MEDIUM BROWN/GRAY SAND WATER @ 60" |

PERCOLATION TESTS PERFORMED ON 09/12/24 BY C. PAGAN OF INGALLS & ASSOCIATES, LLP

| NO. | DATE | REVISIONS | BY: |
|-----|------|-----------|-----|
|     |      |           |     |
|     |      |           |     |
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1 SEPTIC PLAN  
SCALE: 1"=20'

**LEGEND**

|                         |     |
|-------------------------|-----|
| WELL LOCATION           | ⊙   |
| PROPOSED SEPTIC LATERAL | --- |
| PROPOSED SEPTIC TANK    | □   |
| PERC PIT LOCATION       | ⊕   |
| TEST TEST LOCATION      | ⊕   |

FOR MUNICIPAL APPROVAL ONLY  
NOT FOR CONSTRUCTION

**ingalls**  
ingalls & associates, LLP  
engineering, environmental, surveying  
116 WEST AVENUE UNIT 102  
SARATOGA SPRINGS, N.Y. 12866  
PHONE: (518) 383-7725  
FAX: (518) 393-2324

**SEPTIC PLAN**  
SHANGRI-LA GREENHOUSES AND FARMSTAND  
SPIER FALLS ROAD  
TOWN OF MOREAU  
COUNTY OF SARATOGA STATE OF NEW YORK

DATE: 10/18/24  
DRAWN BY: CWP  
CADD FILE: 22-122 Septic Exit 17

CHECKED BY: D.F.J.  
JOB NO. 22-122

SCALE: AS NOTED  
SHEET 1 OF 1

DAVID F. INGALLS JR., P.E.  
N.Y.S. LIC. NO. 064993

**APPENDIX D**  
**INSPECTION AND REPORTS FORMS**

# STORMWATER POLLUTION PREVENTION PLAN WEEKLY CONSTRUCTION INSPECTION FORM

Construction Site: Shangri-La Greenhouses and Farmstand

Town of Moreau, Saratoga County, New York

STORMWATER POLLUTION PREVENTION PLAN DATED October 2024

Per conditions of the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001 inspections and reports must be completed once every seven (7) calendar days.

Inspection Type:       Standard  
                                  Supplemental (per request of Owner/Contractor)

Date: \_\_\_\_\_ Week Ending: \_\_\_\_\_

Weather/Storm Event Information: \_\_\_\_\_

Storm Start Time: \_\_\_\_\_ Storm Duration: \_\_\_\_\_

Approximate Amount of Rainfall (inches): \_\_\_\_\_

Based on the results of the inspection, necessary control modifications shall be implemented within seven (7) calendar days. These reports shall be kept on file as part of the Storm Water Pollution Prevention Plan for at least five (5) years from the date of completion and submission of the Final Stabilization Certification/Termination Checklist and Notice of Termination. A copy of the SWPPP shall be kept at the site at all times during construction.

Certification Statement:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief; true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Name of Inspector: \_\_\_\_\_ Title of Inspector: \_\_\_\_\_

Qualifications of Inspector: \_\_\_\_\_

Inspector's Signature: \_\_\_\_\_

Compliance Certification

*"I certify that, based on no incidents of non-compliance identified during the inspection, the site is in compliance with the SWPPP and the Construction General Permit."*

Name of Duly Authorized Representative (Printed): \_\_\_\_\_

Signature of Duly Authorized Representative: \_\_\_\_\_

Date: \_\_\_\_\_

\*Note: Only to be signed when the site is in **full compliance** with the SWPPP and the Construction General Permit.



# CONSTRUCTION DURATION INSPECTIONS

**Directions: Inspection Forms will be filled out during the entire construction phase of the project.**

Required Elements:

1. On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;
2. Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;
3. Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;
4. Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);
5. Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and
6. Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

# CONSTRUCTION DURATION INSPECTIONS

SITE PLAN/SKETCH (See "Comments" for description)

\_\_\_\_\_  
Inspector (print name)

\_\_\_\_\_  
Date of Inspection

\_\_\_\_\_  
Qualified Professional (print name)

\_\_\_\_\_  
Qualified Professional Signature

The above signed acknowledges that, to the best of their knowledge, all information provided on these forms is accurate and complete.

# CONSTRUCTION DURATION INSPECTIONS

## Maintaining Water Quality

Yes No N/A

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- All disturbances are within the limits of the approved plans.
- Have receiving water bodies been impacted by silt from project?

## Housekeeping

### 1. General Site Conditions

Yes No N/A

- Is construction site litter and debris appropriately managed?
- Are the facilities and equipment necessary for the implementation of erosion and sediment control in working order and/or properly maintained?
- Is construction impacting the adjacent property?
- Is dust adequately controlled?

### 2. Temporary Stream Crossing

Yes No N/A

- Maximum diameter pipes necessary to span creek without dredging are installed.
- Is non-woven geo-textile fabric installed beneath approaches?
- Is composed of aggregate (no earth or soil)?
- Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

## Runoff Control Practices

### 1. Excavation Dewatering

Yes No N/A

- Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- Clean water upstream pool is being pumped to the downstream pool.
- Sediment laden water from work area is being discharged to a silt-trapping device.
- Constructed upstream berm with one-foot minimum freeboard.

### 2. Level Spreader

Yes No N/A

- Are they installed per plan?
- Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- Does flow sheet out of level spreaders without erosion on downstream edge?

### 3. Interceptor Dikes and Swales

Yes No N/A

- Installed per plan with minimum side slopes or flatter.
- Stabilized by geo-textile fabric, seed, or mulch with no erosion occurring.
- Sediment-laden runoff directed to sediment trapping structure

# CONSTRUCTION DURATION INSPECTIONS

## Runoff Control Practices (continued)

### 4. Stone Check Dam

Yes No N/A

- Is channel stable? (The flow is not eroding soil underneath or around the structure.)
- Check dam is in good condition (rocks in place and no permanent pools behind the structure).
- Has accumulated sediment been removed?

### 5. Rock Outlet Protection

Yes No N/A

- Installed per plan
- Installed concurrently with pipe installation.

## Soil Stabilization

### 1. Topsoil and Spoil Stockpiles

Yes No N/A

- Stockpiles are stabilized with vegetation and/or mulch.
- Sediment control is installed at the toe of the slope.

### 2. Re-vegetation

Yes No N/A

- Temporary seeding and mulch have been applied to idle areas.
- Four inches, minimum, of topsoil has been applied under permanent seeding.

## Sediment Control

### 1. Stabilized Construction Entrance

Yes No N/A

- Is Stone is clean enough to effectively remove mud from vehicles?
- Is the entrance installed per standards and specifications?
- Does all traffic use the stabilized entrance to enter and leave site?
- Is adequate drainage provided to prevent pending at entrance?

### 2. Silt Fence

Yes No N/A

- Installed on Contour, ten (10) feet from toe of slope (not across conveyance channels)
- Joints constructed by wrapping the two ends together for continuous support
- Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is \_\_\_% of design capacity.

# CONSTRUCTION DURATION INSPECTIONS

## Sediment Control (continued)

### 3. Storm Drain Inlet Protection (Use for Stone and Block, Filter Fabric, Curb, or Excavated practices)

Yes No N/A

- Installed concrete blocks lengthwise so open ends face outward, not upward.
- Placed wire screen between No. 3 crushed stone and concrete blocks.
- Drainage area is one (1) acre or less.
- Excavated area is 900 cubic feet.
- Excavated side slopes should be 2:1.
- 2" x 4" frame is constructed and structurally sound.
- Is there a three (3) foot maximum spacing between posts?
- Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
- Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is \_\_\_% of design capacity.

### 4. Temporary Sediment Trap

Yes No N/A

- Outlet structure is constructed per the approved plan or drawing.
- Geo-textile fabric has been placed beneath rock fill.

Sediment accumulation is \_\_\_% of design capacity.

### 5. Temporary Sediment Basin

Yes No N/A

- Basin and outlet structure constructed per the approved plan.
- Basin side slopes are stabilized with seed/mulch.
- Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is \_\_\_% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

# CONSTRUCTION DURATION INSPECTIONS

Additional Site Issues Requiring Action: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Actions to be Taken: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Specific Comments (See Sketch Plan): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**CONTRACTOR'S  
STORMWATER POLLUTION PREVENTION PLAN  
WEEKLY PROGRESS REPORT**

Construction Site: Shangri-La Greenhouses and Farmstand

Town of Moreau, Saratoga County, New York

STORMWATER POLLUTION PREVENTION PLAN DATED October 2024

**Site Status:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Time:** \_\_\_\_\_

**Weather Conditions:** \_\_\_\_\_

**Contractor:** \_\_\_\_\_

**Progress:**

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**Comments:**

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**Do any of the conditions documented above require that changes are required to be made to the Storm Water Pollution Prevention Plan?    No    Yes**



## Pond Operation, Maintenance, and Management Inspection Checklist

Project:  
 Location:  
 Site Status:

Date:  
 Time:  
 Inspector:

\*Inspections should also be conducted after major storm events if stormwater structures show any signs of damage.

| Maintenance Item  | Satisfactory/<br>Unsatisfactory | Comments |
|---|---------------------------------|----------|
| <b>1. Embankment and emergency spillway (Annual)</b>      |                                 |          |
| 1. Vegetation and ground cover adequate                   |                                 |          |
| 2. Embankment erosion                                     |                                 |          |
| 3. Animal burrows   |                                 |          |
| 4. Unauthorized planting                                  |                                 |          |
| 5. Cracking, bulging, or sliding of dam                   |                                 |          |
| a. Upstream face  |                                 |          |
| b. Downstream face  |                                 |          |
| c. At or beyond toe                                       |                                 |          |
| downstream  |                                 |          |
| upstream  |                                 |          |
| d. Emergency spillway                                     |                                 |          |
| 6. Pond drains clear and functioning                      |                                 |          |
| 7. Seeps/leaks on downstream face                         |                                 |          |
| 8. Slope protection or riprap failure                     |                                 |          |
| 9. Vertical/horizontal alignment of top of dam "As-Built" |                                 |          |

| Maintenance Item  | Satisfactory/<br>Unsatisfactory | Comments |
|---|---------------------------------|----------|
| 10. Emergency spillway clear of obstructions and debris   |                                 |          |
| 11. Other (specify)   |                                 |          |
| <b>2. Riser and principal spillway (Annual)</b>   |                                 |          |
| Type: Reinforced concrete _____<br>Corrugated pipe _____<br>Masonry _____<br>1. Low flow orifice obstructed |                                 |          |
| 2. Low flow trash rack.<br>a. Debris removal necessary  |                                 |          |
| b. Corrosion control  |                                 |          |
| 3. Weir trash rack maintenance<br>a. Debris removal necessary   |                                 |          |
| b. corrosion control  |                                 |          |
| 4. Excessive sediment accumulation inside riser   |                                 |          |
| 5. Concrete/masonry condition riser and barrels<br>a. cracks or displacement                                |                                 |          |
| b. Minor spalling (<1" )  |                                 |          |
| c. Major spalling (rebars exposed)  |                                 |          |
| d. Joint failures   |                                 |          |
| e. Water tightness  |                                 |          |
| 6. Metal pipe condition   |                                 |          |
| 7. Control valve<br>a. Operational/exercised  |                                 |          |
| b. Chained and locked   |                                 |          |
| 8. Pond drain valve<br>a. Operational/exercised   |                                 |          |
| b. Chained and locked   |                                 |          |
| 9. Outfall channels functioning   |                                 |          |
| 10. Other (specify)   |                                 |          |

| Maintenance Item                                   | Satisfactory/<br>Unsatisfactory | Comments |
|--|---------------------------------|----------|
| <b>3. Permanent Pool (Wet Ponds) (Annual)</b>      |                                 |          |
| 1. Undesirable vegetative growth                   |                                 |          |
| 2. Floating or floatable debris removal required   |                                 |          |
| 3. Visible pollution                               |                                 |          |
| 4. Shoreline problem                               |                                 |          |
| 5. Other (specify)                                 |                                 |          |
| <b>4. Sediment Forebays (Annual)</b>               |                                 |          |
| 1. Sedimentation noted                             |                                 |          |
| 2. Sediment cleanout when depth < 50% design depth |                                 |          |
| <b>5. Dry Pond Areas (Annual)</b>                  |                                 |          |
| 1. Vegetation adequate                             |                                 |          |
| 2. Undesirable vegetative growth                   |                                 |          |
| 3. Undesirable woody vegetation                    |                                 |          |
| 4. Low flow channels clear of obstructions         |                                 |          |
| 5. Standing water or wet spots                     |                                 |          |
| 6. Sediment and / or trash accumulation            |                                 |          |
| 7. Other (specify)                                 |                                 |          |
| <b>6. Condition of Outfalls (Annual)</b>           |                                 |          |
| 1. Reinforcing mat failures                        |                                 |          |
| 2. Slope erosion                                   |                                 |          |
| 3. Storm drain pipes                               |                                 |          |
| 4. Weir  |                                 |          |
| 5. Other (specify)                                 |                                 |          |
| <b>7. Other (Annual)</b>                           |                                 |          |
| 1. Encroachment on pond, wetland or easement area  |                                 |          |

| Maintenance Item   | Satisfactory/<br>Unsatisfactory | Comments |
|--|---------------------------------|----------|
| 2. Complaints from residents   |                                 |          |
| 3. Aesthetics<br>a. Grass growing required   |                                 |          |
| b. Graffiti removal needed   |                                 |          |
| c. Other (specify)   |                                 |          |
| 4. Conditions of maintenance access routes.  |                                 |          |
| 5. Signs of hydrocarbon build-up   |                                 |          |
| 6. Any public hazards (specify)  |                                 |          |
| <b>8. Wetland Vegetation (Annual)</b>  |                                 |          |
| 1. Vegetation healthy and growing<br>Wetland maintaining 50% surface area coverage of wetland plants after the second growing season.<br>(If unsatisfactory, reinforcement plantings needed) | N/A                             |          |
| 2. Dominant wetland plants:<br>Survival of desired wetland plant species<br>Distribution according to landscaping plan?  | N/A                             |          |
| 3. Evidence of invasive species  | N/A                             |          |
| 4. Maintenance of adequate water depths for desired wetland plant species  | N/A                             |          |
| 5. Harvesting of emergent plantings needed   | N/A                             |          |
| 6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment  | N/A                             |          |
| 7. Eutrophication level of the wetland.  | N/A                             |          |
| 8. Other (specify)   |                                 |          |

**Comments:**

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**Actions to be Taken:**

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## Vegetated Swale Operation, Maintenance, and Management Inspection Checklist

Project:  
 Location:  
 Site Status:  
 Date:  
 Time:  
 Inspector:

\*Inspections should also be conducted after major storm events post construction if stormwater structures show any signs of damage.

| Maintenance Item                                    | Satisfactory/Unsatisfactory | Comments |
|---|-----------------------------|----------|
| <b>1. Debris Cleanout (Monthly)</b>                 |                             |          |
| Contributing areas clean of debris                  |                             |          |
| <b>2. Check Dams or Energy Dissipators (Annual)</b> |                             |          |
| No evidence of flow going around structures         |                             |          |
| No evidence of erosion at downstream toe            |                             |          |
| Soil permeability                                   |                             |          |
| Groundwater/bedrock                                 |                             |          |
| <b>3. Vegetation (Monthly)</b>                      |                             |          |
| Mowing done when needed                             |                             |          |
| Minimum mowing depth not exceeded                   |                             |          |
| No evidence of erosion                              |                             |          |
| Fertilized per specification                        |                             |          |
| <b>4. Dewatering (Monthly)</b>                      |                             |          |
| Dewaterers between storms                           |                             |          |

| Maintenance Item                       | Satisfactory/Unsatisfactory | Comments |
|--|-----------------------------|----------|
| <b>5. Sediment deposition (Annual)</b> |                             |          |
| Clean of sediment                      |                             |          |
| <b>6. Outlet/Inlets (Annual)</b>       |                             |          |
| Good condition, no need for repairs    |                             |          |
| No evidence of erosion                 |                             |          |

**Comments:**

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**Actions to be Taken:**

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# Culvert Operation, Maintenance, and Management Inspection Checklist

Project:  
 Location:  
 Site Status:  
 Date:  
 Time:  
 Inspector:

\*Inspections should also be conducted after major storm events post construction if stormwater structures show any signs of damage.

| Maintenance Item                            | Satisfactory/Unsatisfactory | Comments |
|---|-----------------------------|----------|
| <b>1. Debris Cleanout (Annual)</b>          |                             |          |
| Contributing area clean of debris           |                             |          |
| Culvert free of debris                      |                             |          |
| <b>2. Culvert (Annual)</b>                  |                             |          |
| No evidence of flow going around structures |                             |          |
| No evidence of erosion at downstream toe    |                             |          |
| Pipe condition                              |                             |          |
| Connections at catch basin and drop inlets  |                             |          |
| <b>3. Dewatering (Annual)</b>               |                             |          |
| Dewaterers between storms                   |                             |          |
| <b>4. Sediment deposition (Annual)</b>      |                             |          |
| Clean of sediment                           |                             |          |



| Maintenance Item                    | Satisfactory/Unsatisfactory | Comments |
|-------------------------------------|-----------------------------|----------|
| <b>5. Outlet / Inlets (Annual)</b>  |                             |          |
| Good condition, no need for repairs |                             |          |
| No evidence of erosion              |                             |          |

**Comments:**

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**Actions to be Taken:**

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# Infiltration Basin Operation, Maintenance, and Management Inspection Checklist

Project:  
 Location:  
 Site Status:  
 Date:  
 Time:  
 Inspector:

\*Inspections should also be conducted after major storm events post construction if stormwater structures show any signs of damage.

| Maintenance Item                                    | Satisfactory/Unsatisfactory | Comments |
|---|-----------------------------|----------|
| <b>1. Debris Cleanout (Monthly)</b>                 |                             |          |
| Basin surface clear of debris                       |                             |          |
| Inflow pipes clear of debris                        |                             |          |
| Overflow spillway clear of debris                   |                             |          |
| Inlet area clear of debris                          |                             |          |
| <b>2. Sediment Traps or Forebays (Annual)</b>       |                             |          |
| Obviously trapping sediment                         |                             |          |
| Greater than 50% of storage volume remaining        |                             |          |
| <b>3. Dewatering (Monthly)</b>                      |                             |          |
| Basin dewateres between storms                      |                             |          |
| <b>4. Sediment deposition (Annual)</b>              |                             |          |
| No evidence of sedimentation in basin               |                             |          |
| Sediment accumulation doesn't yet require clean-out |                             |          |

| Maintenance Item                              | Satisfactory/Unsatisfactory | Comments |
|---|-----------------------------|----------|
| <b>5. Inlets (Annual)</b>                     |                             |          |
| Good condition                                |                             |          |
| No evidence of erosion                        |                             |          |
| <b>5. Outlet / Overflow Spillway (Annual)</b> |                             |          |
| Good condition, no need for repairs           |                             |          |
| No evidence of erosion                        |                             |          |

**Comments:**

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**Actions to be Taken:**

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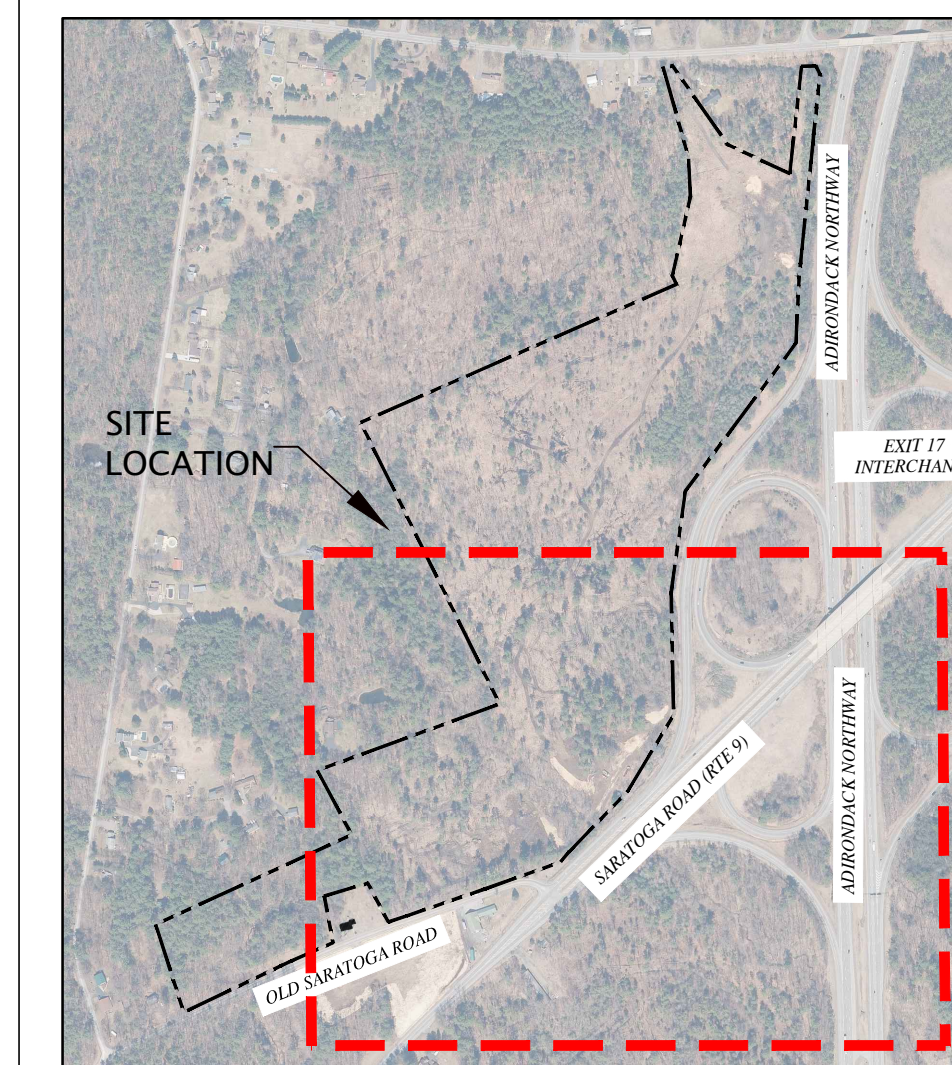


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**APPENDIX E**  
**STORMWATER CALCULATIONS AND MAPS**

PRELIMINARY  
NOT FOR  
CONSTRUCTION

SITE LOCATION MAP  
SCALE: NOT TO SCALE



# Shangri-La Greenhouses and Farmstand

Town of Moreau,  
Saratoga County, New York

| Date | Revision | Drawn |
|------|----------|-------|
|      |          |       |
|      |          |       |

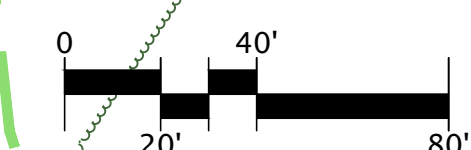
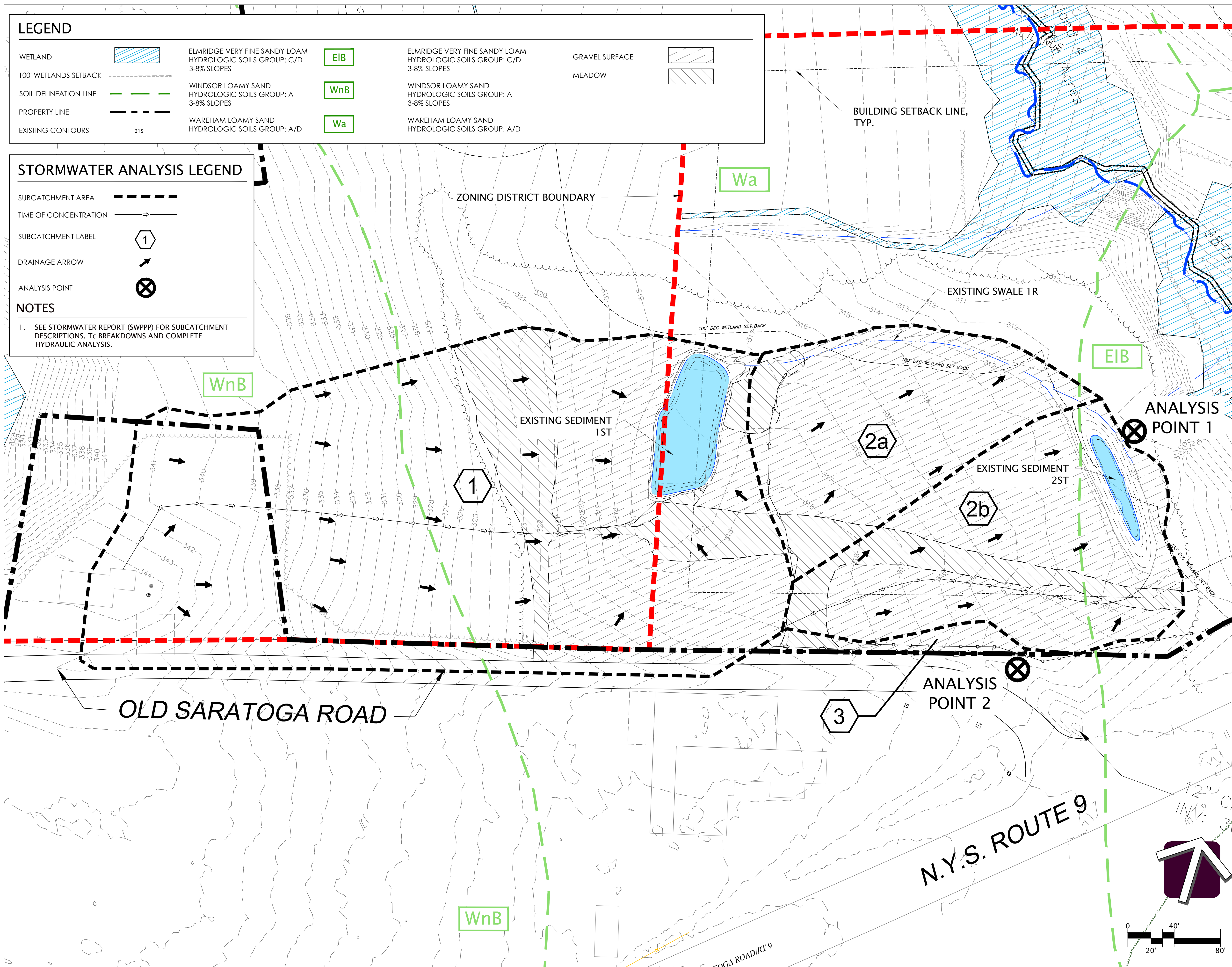
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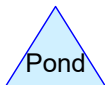
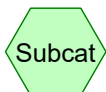
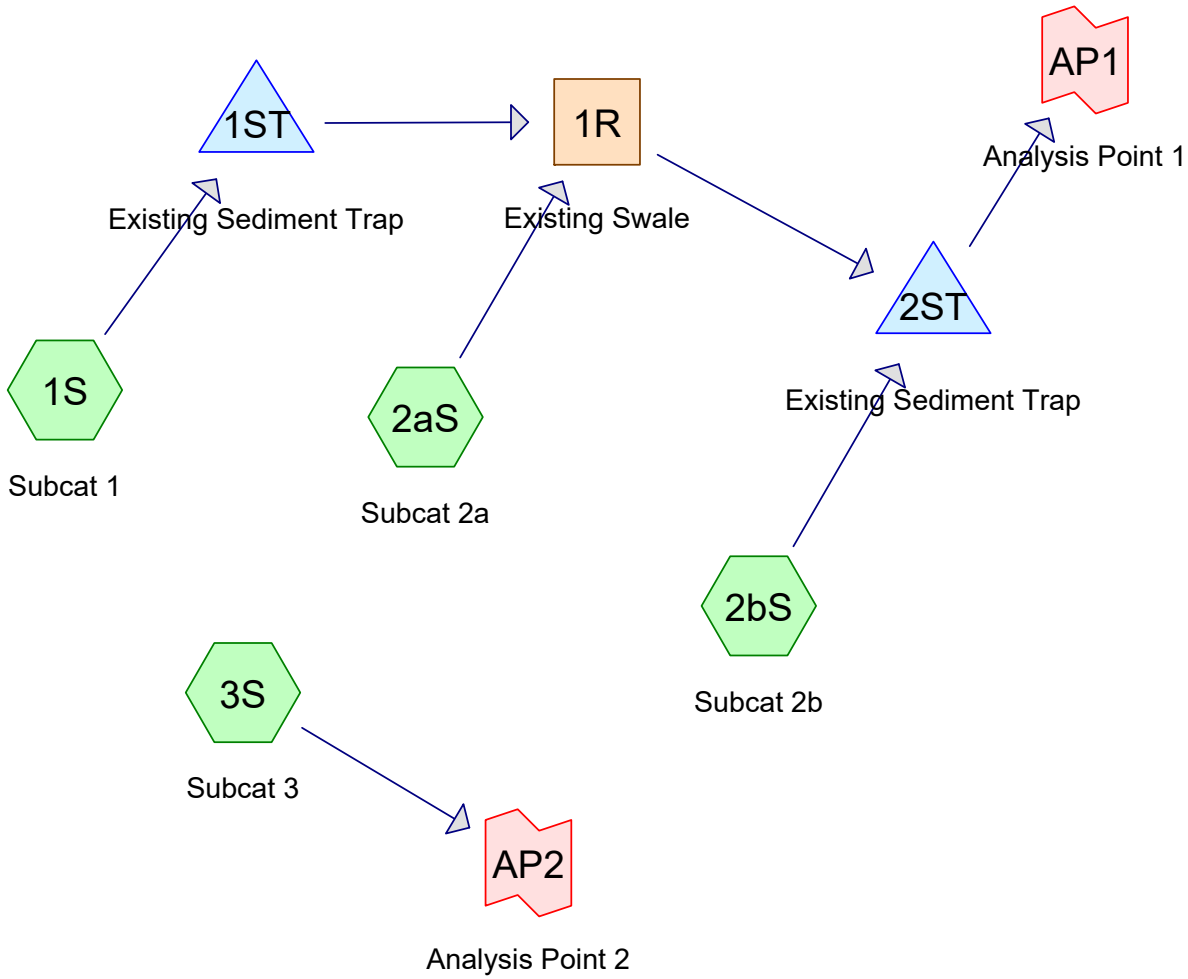
Drawn By: SRZ Checked By: PL

Project No. 420-1096

Date: 2024-12-13

## Existing Stormwater Map Farmstand STR-1





# 1096 Existing Stormwater Conditions Final D Soils Farmstand

Prepared by CLA Site

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## Rainfall Events Listing

| Event# | Event Name | Storm Type    | Curve | Mode    | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1      | 1-yr       | Type II 24-hr |       | Default | 24.00            | 1   | 2.24           | 2   |
| 2      | 10-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 3.72           | 2   |
| 3      | 25-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 4.56           | 2   |
| 4      | 100-yr     | Type II 24-hr |       | Default | 24.00            | 1   | 6.24           | 2   |

# 1096 Existing Stormwater Conditions Final D Soils Farmstand

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## Area Listing (all nodes)

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)        |
|-----------------|-----------|--|
| 0.546           | 39        | >75% Grass cover, Good, HSG A (1S)           |
| 0.018           | 89        | Gravel surface, HSG A (3S)                   |
| 0.033           | 89        | Gravel surface, HSG C (2bS)                  |
| 0.687           | 89        | Gravel surface, HSG D (1S, 2aS, 2bS)         |
| 0.184           | 71        | Meadow, non-grazed, HSG C (2aS, 2bS)         |
| 2.263           | 78        | Meadow, non-grazed, HSG D (1S, 2aS, 2bS, 3S) |
| 0.005           | 98        | Paved parking, HSG A (1S)                    |
| 0.136           | 98        | Paved roads w/curbs & sewers, HSG A (1S)     |
| 0.022           | 98        | Roofs, HSG A (1S)                            |
| 0.105           | 98        | Water Surface, HSG C (2bS)                   |
| 0.151           | 98        | Water Surface, HSG D (1S, 2aS, 2bS)          |
| 1.252           | 30        | Woods, Good, HSG A (1S)                      |
| <b>5.402</b>    | <b>66</b> | <b>TOTAL AREA</b>                            |



# 1096 Existing Stormwater Conditions Final D Soils Farmstand

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## Soil Listing (all nodes)

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 1.979           | HSG A         | 1S, 3S                  |
| 0.000           | HSG B         |                         |
| 0.322           | HSG C         | 2aS, 2bS                |
| 3.101           | HSG D         | 1S, 2aS, 2bS, 3S        |
| 0.000           | Other         |                         |
| <b>5.402</b>    |               | <b>TOTAL AREA</b>       |

# 1096 Existing Stormwater Conditions Final D Soils Farmstand

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## Ground Covers (all nodes)

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover              | Subcatchment<br>Numbers       |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------------------|-------------------------------|
| 0.546            | 0.000            | 0.000            | 0.000            | 0.000            | 0.546            | >75% Grass cover, Good       | 1S                            |
| 0.018            | 0.000            | 0.033            | 0.687            | 0.000            | 0.738            | Gravel surface               | 1S,<br>2aS,<br><br>2bS,<br>3S |
| 0.000            | 0.000            | 0.184            | 2.263            | 0.000            | 2.447            | Meadow, non-grazed           | 1S,<br>2aS,<br><br>2bS,<br>3S |
| 0.005            | 0.000            | 0.000            | 0.000            | 0.000            | 0.005            | Paved parking                | 1S                            |
| 0.136            | 0.000            | 0.000            | 0.000            | 0.000            | 0.136            | Paved roads w/curbs & sewers | 1S                            |
| 0.022            | 0.000            | 0.000            | 0.000            | 0.000            | 0.022            | Roofs                        | 1S                            |
| 0.000            | 0.000            | 0.105            | 0.151            | 0.000            | 0.256            | Water Surface                | 1S,<br>2aS,<br>2bS            |
| 1.252            | 0.000            | 0.000            | 0.000            | 0.000            | 1.252            | Woods, Good                  | 1S                            |
| <b>1.979</b>     | <b>0.000</b>     | <b>0.322</b>     | <b>3.101</b>     | <b>0.000</b>     | <b>5.402</b>     | <b>TOTAL AREA</b>            |                               |

Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |   |
|---|---|
| <b>Subcatchment 1S: Subcat 1</b>        | Runoff Area=3.413 ac 8.82% Impervious Runoff Depth=0.06"<br>Flow Length=499' Tc=10.0 min CN=57 Runoff=0.03 cfs 0.018 af                       |
| <b>Subcatchment 2aS: Subcat 2a</b>      | Runoff Area=0.839 ac 0.83% Impervious Runoff Depth=0.67"<br>Flow Length=211' Tc=12.1 min CN=79 Runoff=0.76 cfs 0.047 af                       |
| <b>Subcatchment 2bS: Subcat 2b</b>      | Runoff Area=1.062 ac 10.45% Impervious Runoff Depth=0.76"<br>Flow Length=331' Tc=9.7 min CN=81 Runoff=1.22 cfs 0.067 af                       |
| <b>Subcatchment 3S: Subcat 3</b>        | Runoff Area=0.088 ac 0.00% Impervious Runoff Depth=0.71"<br>Flow Length=225' Tc=7.3 min CN=80 Runoff=0.10 cfs 0.005 af                        |
| <b>Reach 1R: Existing Swale</b>         | Avg. Flow Depth=0.16' Max Vel=1.83 fps Inflow=0.76 cfs 0.047 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=0.73 cfs 0.047 af |
| <b>Pond 1ST: Existing Sediment Trap</b> | Peak Elev=315.64' Storage=0.211 af Inflow=0.03 cfs 0.018 af<br>Outflow=0.00 cfs 0.000 af  |
| <b>Pond 2ST: Existing Sediment Trap</b> | Peak Elev=309.79' Storage=0.125 af Inflow=1.88 cfs 0.114 af<br>Outflow=0.00 cfs 0.000 af  |
| <b>Link AP1: Analysis Point 1</b>       | Inflow=0.00 cfs 0.000 af<br>Primary=0.00 cfs 0.000 af   |
| <b>Link AP2: Analysis Point 2</b>       | Inflow=0.10 cfs 0.005 af<br>Primary=0.10 cfs 0.005 af   |

**Total Runoff Area = 5.402 ac Runoff Volume = 0.138 af Average Runoff Depth = 0.31"**  
**92.24% Pervious = 4.983 ac 7.76% Impervious = 0.419 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 0.03 cfs @ 13.00 hrs, Volume= 0.018 af, Depth= 0.06"  
 Routed to Pond 1ST : Existing Sediment Trap

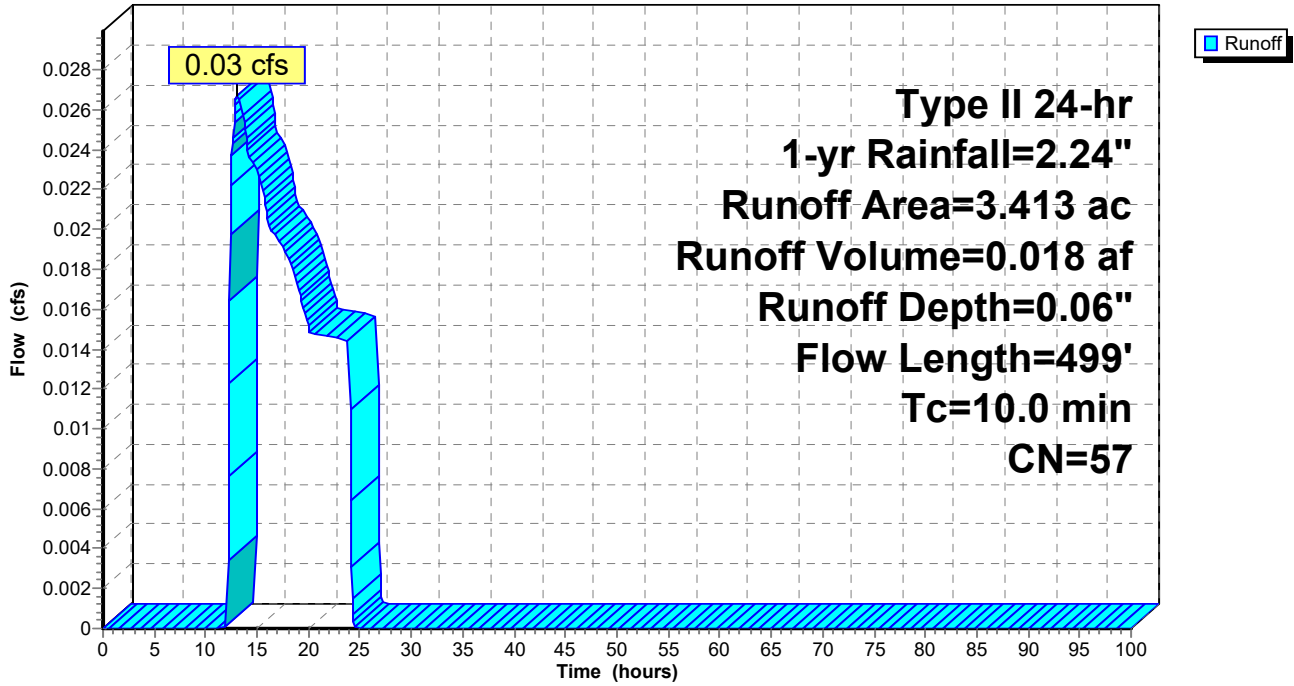
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| * 0.022   | 98 | Roofs, HSG A                        |
| * 0.005   | 98 | Paved parking, HSG A                |
| 0.136     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.252     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 0.876     | 78 | Meadow, non-grazed, HSG D           |
| * 0.438   | 89 | Gravel surface, HSG D               |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.413     | 57 | Weighted Average                    |
| 3.112     |    | 91.18% Pervious Area                |
| 0.301     |    | 8.82% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.2      | 69            | 0.0600        | 4.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.0     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



**Hydrograph for Subcatchment 1S: Subcat 1**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.06            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.06            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.06            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.06            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.06            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.06            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.06            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.06            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.06            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.06            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.06            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.06            | 0.00         |
| 12.00        | 1.49             | 0.00            | 0.00         | 65.00        | 2.24             | 0.06            | 0.00         |
| 13.00        | 1.73             | 0.01            | <b>0.03</b>  | 66.00        | 2.24             | 0.06            | 0.00         |
| 14.00        | 1.84             | 0.01            | 0.02         | 67.00        | 2.24             | 0.06            | 0.00         |
| 15.00        | 1.91             | 0.02            | 0.02         | 68.00        | 2.24             | 0.06            | 0.00         |
| 16.00        | 1.97             | 0.03            | 0.02         | 69.00        | 2.24             | 0.06            | 0.00         |
| 17.00        | 2.02             | 0.03            | 0.02         | 70.00        | 2.24             | 0.06            | 0.00         |
| 18.00        | 2.06             | 0.04            | 0.02         | 71.00        | 2.24             | 0.06            | 0.00         |
| 19.00        | 2.10             | 0.04            | 0.02         | 72.00        | 2.24             | 0.06            | 0.00         |
| 20.00        | 2.13             | 0.05            | 0.02         | 73.00        | 2.24             | 0.06            | 0.00         |
| 21.00        | 2.16             | 0.05            | 0.01         | 74.00        | 2.24             | 0.06            | 0.00         |
| 22.00        | 2.19             | 0.06            | 0.01         | 75.00        | 2.24             | 0.06            | 0.00         |
| 23.00        | 2.21             | 0.06            | 0.01         | 76.00        | 2.24             | 0.06            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.06</b>     | 0.01         | 77.00        | 2.24             | 0.06            | 0.00         |
| 25.00        | 2.24             | 0.06            | 0.00         | 78.00        | 2.24             | 0.06            | 0.00         |
| 26.00        | 2.24             | 0.06            | 0.00         | 79.00        | 2.24             | 0.06            | 0.00         |
| 27.00        | 2.24             | 0.06            | 0.00         | 80.00        | 2.24             | 0.06            | 0.00         |
| 28.00        | 2.24             | 0.06            | 0.00         | 81.00        | 2.24             | 0.06            | 0.00         |
| 29.00        | 2.24             | 0.06            | 0.00         | 82.00        | 2.24             | 0.06            | 0.00         |
| 30.00        | 2.24             | 0.06            | 0.00         | 83.00        | 2.24             | 0.06            | 0.00         |
| 31.00        | 2.24             | 0.06            | 0.00         | 84.00        | 2.24             | 0.06            | 0.00         |
| 32.00        | 2.24             | 0.06            | 0.00         | 85.00        | 2.24             | 0.06            | 0.00         |
| 33.00        | 2.24             | 0.06            | 0.00         | 86.00        | 2.24             | 0.06            | 0.00         |
| 34.00        | 2.24             | 0.06            | 0.00         | 87.00        | 2.24             | 0.06            | 0.00         |
| 35.00        | 2.24             | 0.06            | 0.00         | 88.00        | 2.24             | 0.06            | 0.00         |
| 36.00        | 2.24             | 0.06            | 0.00         | 89.00        | 2.24             | 0.06            | 0.00         |
| 37.00        | 2.24             | 0.06            | 0.00         | 90.00        | 2.24             | 0.06            | 0.00         |
| 38.00        | 2.24             | 0.06            | 0.00         | 91.00        | 2.24             | 0.06            | 0.00         |
| 39.00        | 2.24             | 0.06            | 0.00         | 92.00        | 2.24             | 0.06            | 0.00         |
| 40.00        | 2.24             | 0.06            | 0.00         | 93.00        | 2.24             | 0.06            | 0.00         |
| 41.00        | 2.24             | 0.06            | 0.00         | 94.00        | 2.24             | 0.06            | 0.00         |
| 42.00        | 2.24             | 0.06            | 0.00         | 95.00        | 2.24             | 0.06            | 0.00         |
| 43.00        | 2.24             | 0.06            | 0.00         | 96.00        | 2.24             | 0.06            | 0.00         |
| 44.00        | 2.24             | 0.06            | 0.00         | 97.00        | 2.24             | 0.06            | 0.00         |
| 45.00        | 2.24             | 0.06            | 0.00         | 98.00        | 2.24             | 0.06            | 0.00         |
| 46.00        | 2.24             | 0.06            | 0.00         | 99.00        | 2.24             | 0.06            | 0.00         |
| 47.00        | 2.24             | 0.06            | 0.00         | 100.00       | 2.24             | 0.06            | 0.00         |
| 48.00        | 2.24             | 0.06            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.06            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.06            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.06            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.06            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 0.76 cfs @ 12.05 hrs, Volume= 0.047 af, Depth= 0.67"  
 Routed to Reach 1R : Existing Swale

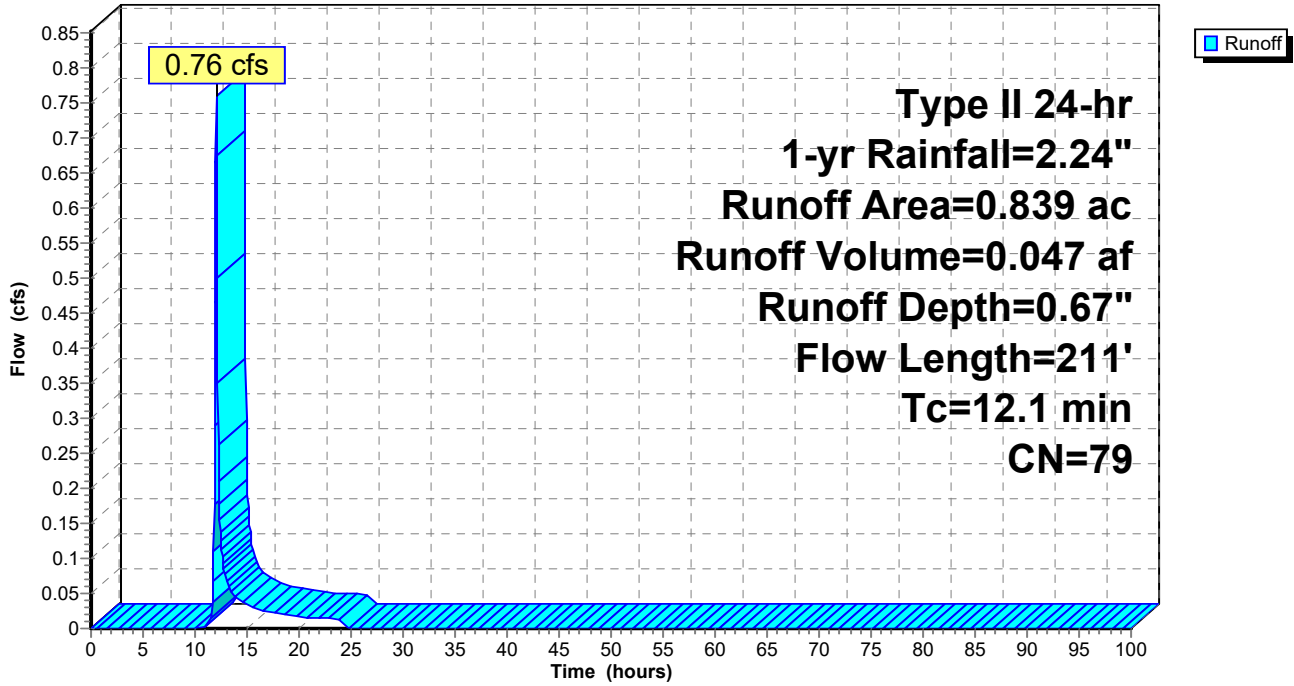
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.727     | 78 | Meadow, non-grazed, HSG D |
| 0.004     | 71 | Meadow, non-grazed, HSG C |
| * 0.101   | 89 | Gravel surface, HSG D     |
| * 0.007   | 98 | Water Surface, HSG D      |
| 0.839     | 79 | Weighted Average          |
| 0.832     |    | 99.17% Pervious Area      |
| 0.007     |    | 0.83% Impervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.0      | 24            | 0.0060        | 0.08              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.7      | 35            | 0.0110        | 0.79              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 5.3      | 41            | 0.0150        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.6      | 35            | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.1      | 27            | 0.0240        | 3.14              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 10            | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 33            | 0.0210        | 2.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 6             | 0.0340        | 1.29              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 12.1     | 211           | Total         |                   |                |   |

Subcatchment 2aS: Subcat 2a

Hydrograph





**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.67            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.67            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.67            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.67            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.67            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.67            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.67            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.67            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.67            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.67            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.67            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.67            | 0.00         |
| 12.00        | 1.49             | 0.25            | <b>0.67</b>  | 65.00        | 2.24             | 0.67            | 0.00         |
| 13.00        | 1.73             | 0.37            | <b>0.07</b>  | 66.00        | 2.24             | 0.67            | 0.00         |
| 14.00        | 1.84             | 0.43            | 0.04         | 67.00        | 2.24             | 0.67            | 0.00         |
| 15.00        | 1.91             | 0.47            | 0.03         | 68.00        | 2.24             | 0.67            | 0.00         |
| 16.00        | 1.97             | 0.51            | 0.03         | 69.00        | 2.24             | 0.67            | 0.00         |
| 17.00        | 2.02             | 0.53            | 0.02         | 70.00        | 2.24             | 0.67            | 0.00         |
| 18.00        | 2.06             | 0.56            | 0.02         | 71.00        | 2.24             | 0.67            | 0.00         |
| 19.00        | 2.10             | 0.58            | 0.02         | 72.00        | 2.24             | 0.67            | 0.00         |
| 20.00        | 2.13             | 0.60            | 0.02         | 73.00        | 2.24             | 0.67            | 0.00         |
| 21.00        | 2.16             | 0.62            | 0.01         | 74.00        | 2.24             | 0.67            | 0.00         |
| 22.00        | 2.19             | 0.64            | 0.01         | 75.00        | 2.24             | 0.67            | 0.00         |
| 23.00        | 2.21             | 0.65            | 0.01         | 76.00        | 2.24             | 0.67            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.67</b>     | 0.01         | 77.00        | 2.24             | 0.67            | 0.00         |
| 25.00        | 2.24             | 0.67            | 0.00         | 78.00        | 2.24             | 0.67            | 0.00         |
| 26.00        | 2.24             | 0.67            | 0.00         | 79.00        | 2.24             | 0.67            | 0.00         |
| 27.00        | 2.24             | 0.67            | 0.00         | 80.00        | 2.24             | 0.67            | 0.00         |
| 28.00        | 2.24             | 0.67            | 0.00         | 81.00        | 2.24             | 0.67            | 0.00         |
| 29.00        | 2.24             | 0.67            | 0.00         | 82.00        | 2.24             | 0.67            | 0.00         |
| 30.00        | 2.24             | 0.67            | 0.00         | 83.00        | 2.24             | 0.67            | 0.00         |
| 31.00        | 2.24             | 0.67            | 0.00         | 84.00        | 2.24             | 0.67            | 0.00         |
| 32.00        | 2.24             | 0.67            | 0.00         | 85.00        | 2.24             | 0.67            | 0.00         |
| 33.00        | 2.24             | 0.67            | 0.00         | 86.00        | 2.24             | 0.67            | 0.00         |
| 34.00        | 2.24             | 0.67            | 0.00         | 87.00        | 2.24             | 0.67            | 0.00         |
| 35.00        | 2.24             | 0.67            | 0.00         | 88.00        | 2.24             | 0.67            | 0.00         |
| 36.00        | 2.24             | 0.67            | 0.00         | 89.00        | 2.24             | 0.67            | 0.00         |
| 37.00        | 2.24             | 0.67            | 0.00         | 90.00        | 2.24             | 0.67            | 0.00         |
| 38.00        | 2.24             | 0.67            | 0.00         | 91.00        | 2.24             | 0.67            | 0.00         |
| 39.00        | 2.24             | 0.67            | 0.00         | 92.00        | 2.24             | 0.67            | 0.00         |
| 40.00        | 2.24             | 0.67            | 0.00         | 93.00        | 2.24             | 0.67            | 0.00         |
| 41.00        | 2.24             | 0.67            | 0.00         | 94.00        | 2.24             | 0.67            | 0.00         |
| 42.00        | 2.24             | 0.67            | 0.00         | 95.00        | 2.24             | 0.67            | 0.00         |
| 43.00        | 2.24             | 0.67            | 0.00         | 96.00        | 2.24             | 0.67            | 0.00         |
| 44.00        | 2.24             | 0.67            | 0.00         | 97.00        | 2.24             | 0.67            | 0.00         |
| 45.00        | 2.24             | 0.67            | 0.00         | 98.00        | 2.24             | 0.67            | 0.00         |
| 46.00        | 2.24             | 0.67            | 0.00         | 99.00        | 2.24             | 0.67            | 0.00         |
| 47.00        | 2.24             | 0.67            | 0.00         | 100.00       | 2.24             | 0.67            | 0.00         |
| 48.00        | 2.24             | 0.67            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.67            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.67            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.67            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.67            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2bS: Subcat 2b**

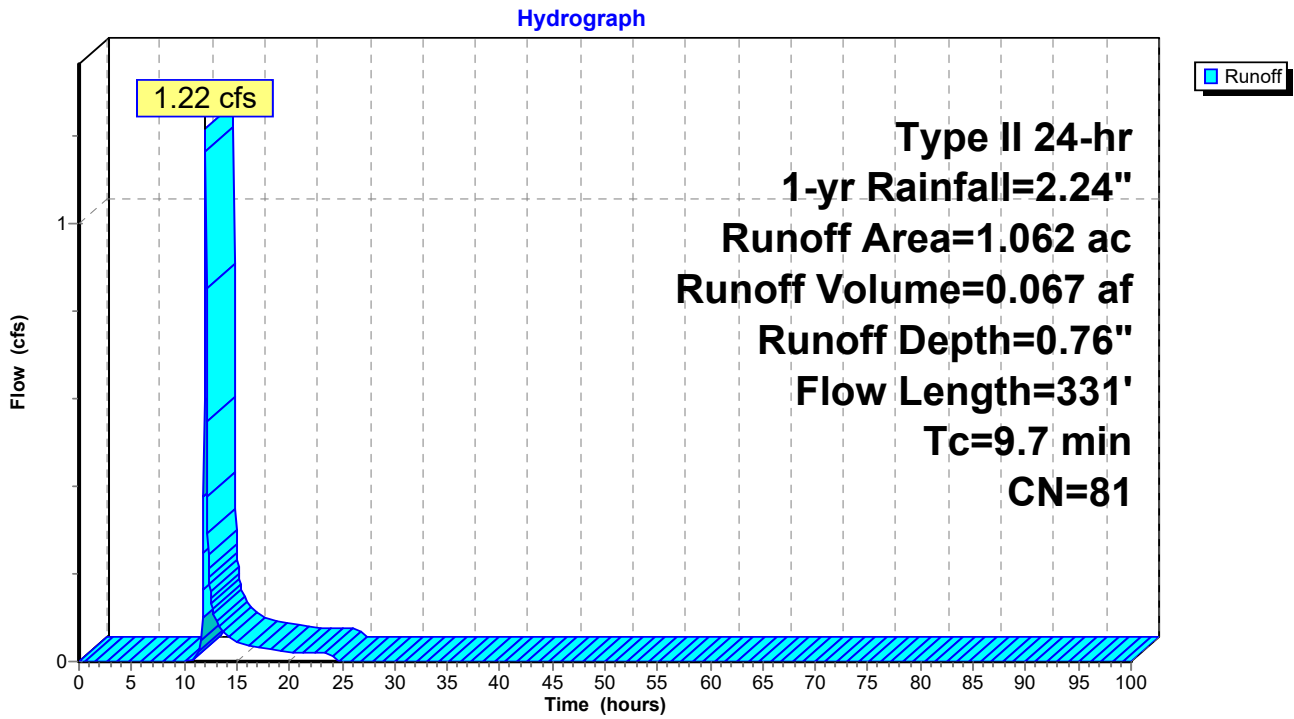
Runoff = 1.22 cfs @ 12.02 hrs, Volume= 0.067 af, Depth= 0.76"  
 Routed to Pond 2ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.590     | 78 | Meadow, non-grazed, HSG D |
| 0.180     | 71 | Meadow, non-grazed, HSG C |
| * 0.148   | 89 | Gravel surface, HSG D     |
| * 0.006   | 98 | Water Surface, HSG D      |
| 0.105     | 98 | Water Surface, HSG C      |
| * 0.033   | 89 | Gravel surface, HSG C     |
| 1.062     | 81 | Weighted Average          |
| 0.951     |    | 89.55% Pervious Area      |
| 0.111     |    | 10.45% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.7      | 38            | 0.0140        | 0.88              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 6.0      | 62            | 0.0260        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.7      | 189           | 0.0280        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 28            | 0.0180        | 2.72              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 9.7      | 331           | Total         |                   |                |   |

Subcatchment 2bS: Subcat 2b



**Hydrograph for Subcatchment 2bS: Subcat 2b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.76            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.76            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.76            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.76            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.76            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.76            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.76            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.76            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.76            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.76            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.76            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.76            | 0.00         |
| 12.00        | 1.49             | 0.31            | <b>1.19</b>  | 65.00        | 2.24             | 0.76            | 0.00         |
| 13.00        | 1.73             | 0.44            | 0.09         | 66.00        | 2.24             | 0.76            | 0.00         |
| 14.00        | 1.84             | 0.50            | 0.06         | 67.00        | 2.24             | 0.76            | 0.00         |
| 15.00        | 1.91             | 0.55            | 0.05         | 68.00        | 2.24             | 0.76            | 0.00         |
| 16.00        | 1.97             | 0.59            | 0.04         | 69.00        | 2.24             | 0.76            | 0.00         |
| 17.00        | 2.02             | 0.62            | 0.03         | 70.00        | 2.24             | 0.76            | 0.00         |
| 18.00        | 2.06             | 0.64            | 0.03         | 71.00        | 2.24             | 0.76            | 0.00         |
| 19.00        | 2.10             | 0.67            | 0.02         | 72.00        | 2.24             | 0.76            | 0.00         |
| 20.00        | 2.13             | 0.69            | 0.02         | 73.00        | 2.24             | 0.76            | 0.00         |
| 21.00        | 2.16             | 0.71            | 0.02         | 74.00        | 2.24             | 0.76            | 0.00         |
| 22.00        | 2.19             | 0.73            | 0.02         | 75.00        | 2.24             | 0.76            | 0.00         |
| 23.00        | 2.21             | 0.74            | 0.02         | 76.00        | 2.24             | 0.76            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.76</b>     | 0.02         | 77.00        | 2.24             | 0.76            | 0.00         |
| 25.00        | 2.24             | 0.76            | 0.00         | 78.00        | 2.24             | 0.76            | 0.00         |
| 26.00        | 2.24             | 0.76            | 0.00         | 79.00        | 2.24             | 0.76            | 0.00         |
| 27.00        | 2.24             | 0.76            | 0.00         | 80.00        | 2.24             | 0.76            | 0.00         |
| 28.00        | 2.24             | 0.76            | 0.00         | 81.00        | 2.24             | 0.76            | 0.00         |
| 29.00        | 2.24             | 0.76            | 0.00         | 82.00        | 2.24             | 0.76            | 0.00         |
| 30.00        | 2.24             | 0.76            | 0.00         | 83.00        | 2.24             | 0.76            | 0.00         |
| 31.00        | 2.24             | 0.76            | 0.00         | 84.00        | 2.24             | 0.76            | 0.00         |
| 32.00        | 2.24             | 0.76            | 0.00         | 85.00        | 2.24             | 0.76            | 0.00         |
| 33.00        | 2.24             | 0.76            | 0.00         | 86.00        | 2.24             | 0.76            | 0.00         |
| 34.00        | 2.24             | 0.76            | 0.00         | 87.00        | 2.24             | 0.76            | 0.00         |
| 35.00        | 2.24             | 0.76            | 0.00         | 88.00        | 2.24             | 0.76            | 0.00         |
| 36.00        | 2.24             | 0.76            | 0.00         | 89.00        | 2.24             | 0.76            | 0.00         |
| 37.00        | 2.24             | 0.76            | 0.00         | 90.00        | 2.24             | 0.76            | 0.00         |
| 38.00        | 2.24             | 0.76            | 0.00         | 91.00        | 2.24             | 0.76            | 0.00         |
| 39.00        | 2.24             | 0.76            | 0.00         | 92.00        | 2.24             | 0.76            | 0.00         |
| 40.00        | 2.24             | 0.76            | 0.00         | 93.00        | 2.24             | 0.76            | 0.00         |
| 41.00        | 2.24             | 0.76            | 0.00         | 94.00        | 2.24             | 0.76            | 0.00         |
| 42.00        | 2.24             | 0.76            | 0.00         | 95.00        | 2.24             | 0.76            | 0.00         |
| 43.00        | 2.24             | 0.76            | 0.00         | 96.00        | 2.24             | 0.76            | 0.00         |
| 44.00        | 2.24             | 0.76            | 0.00         | 97.00        | 2.24             | 0.76            | 0.00         |
| 45.00        | 2.24             | 0.76            | 0.00         | 98.00        | 2.24             | 0.76            | 0.00         |
| 46.00        | 2.24             | 0.76            | 0.00         | 99.00        | 2.24             | 0.76            | 0.00         |
| 47.00        | 2.24             | 0.76            | 0.00         | 100.00       | 2.24             | 0.76            | 0.00         |
| 48.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.10 cfs @ 11.99 hrs, Volume= 0.005 af, Depth= 0.71"  
 Routed to Link AP2 : Analysis Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

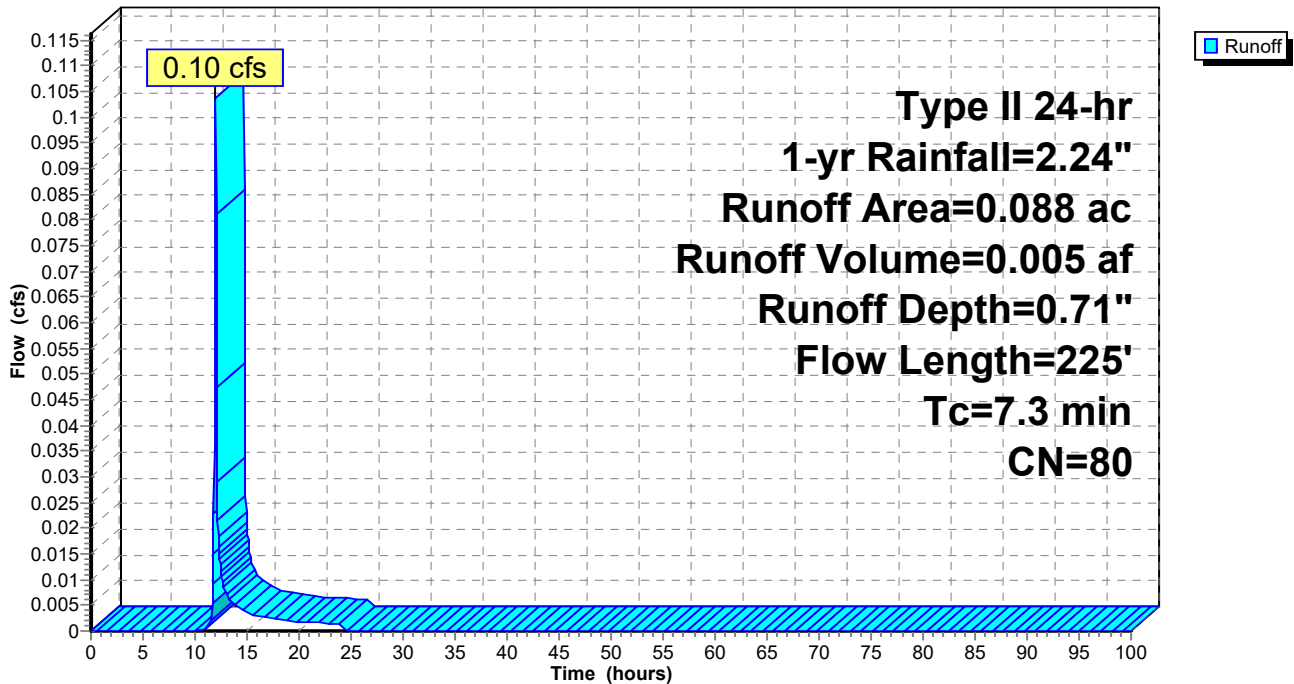
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| * 0.018   | 89 | Gravel surface, HSG A     |
| 0.070     | 78 | Meadow, non-grazed, HSG D |
| 0.088     | 80 | Weighted Average          |
| 0.088     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 3.1      | 12            | 0.0050        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0160        | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.6      | 118           | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.7      | 39            | 0.0030        | 0.38              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 225           | Total         |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**Hydrograph for Subcatchment 3S: Subcat 3**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.71            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.71            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.71            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.71            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.71            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.71            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.71            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.71            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.71            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.71            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.71            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.71            | 0.00         |
| 12.00        | 1.49             | 0.28            | <b>0.10</b>  | 65.00        | 2.24             | 0.71            | 0.00         |
| 13.00        | 1.73             | 0.41            | 0.01         | 66.00        | 2.24             | 0.71            | 0.00         |
| 14.00        | 1.84             | 0.47            | 0.00         | 67.00        | 2.24             | 0.71            | 0.00         |
| 15.00        | 1.91             | 0.51            | 0.00         | 68.00        | 2.24             | 0.71            | 0.00         |
| 16.00        | 1.97             | 0.55            | 0.00         | 69.00        | 2.24             | 0.71            | 0.00         |
| 17.00        | 2.02             | 0.57            | 0.00         | 70.00        | 2.24             | 0.71            | 0.00         |
| 18.00        | 2.06             | 0.60            | 0.00         | 71.00        | 2.24             | 0.71            | 0.00         |
| 19.00        | 2.10             | 0.62            | 0.00         | 72.00        | 2.24             | 0.71            | 0.00         |
| 20.00        | 2.13             | 0.64            | 0.00         | 73.00        | 2.24             | 0.71            | 0.00         |
| 21.00        | 2.16             | 0.66            | 0.00         | 74.00        | 2.24             | 0.71            | 0.00         |
| 22.00        | 2.19             | 0.68            | 0.00         | 75.00        | 2.24             | 0.71            | 0.00         |
| 23.00        | 2.21             | 0.70            | 0.00         | 76.00        | 2.24             | 0.71            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.71</b>     | 0.00         | 77.00        | 2.24             | 0.71            | 0.00         |
| 25.00        | 2.24             | 0.71            | 0.00         | 78.00        | 2.24             | 0.71            | 0.00         |
| 26.00        | 2.24             | 0.71            | 0.00         | 79.00        | 2.24             | 0.71            | 0.00         |
| 27.00        | 2.24             | 0.71            | 0.00         | 80.00        | 2.24             | 0.71            | 0.00         |
| 28.00        | 2.24             | 0.71            | 0.00         | 81.00        | 2.24             | 0.71            | 0.00         |
| 29.00        | 2.24             | 0.71            | 0.00         | 82.00        | 2.24             | 0.71            | 0.00         |
| 30.00        | 2.24             | 0.71            | 0.00         | 83.00        | 2.24             | 0.71            | 0.00         |
| 31.00        | 2.24             | 0.71            | 0.00         | 84.00        | 2.24             | 0.71            | 0.00         |
| 32.00        | 2.24             | 0.71            | 0.00         | 85.00        | 2.24             | 0.71            | 0.00         |
| 33.00        | 2.24             | 0.71            | 0.00         | 86.00        | 2.24             | 0.71            | 0.00         |
| 34.00        | 2.24             | 0.71            | 0.00         | 87.00        | 2.24             | 0.71            | 0.00         |
| 35.00        | 2.24             | 0.71            | 0.00         | 88.00        | 2.24             | 0.71            | 0.00         |
| 36.00        | 2.24             | 0.71            | 0.00         | 89.00        | 2.24             | 0.71            | 0.00         |
| 37.00        | 2.24             | 0.71            | 0.00         | 90.00        | 2.24             | 0.71            | 0.00         |
| 38.00        | 2.24             | 0.71            | 0.00         | 91.00        | 2.24             | 0.71            | 0.00         |
| 39.00        | 2.24             | 0.71            | 0.00         | 92.00        | 2.24             | 0.71            | 0.00         |
| 40.00        | 2.24             | 0.71            | 0.00         | 93.00        | 2.24             | 0.71            | 0.00         |
| 41.00        | 2.24             | 0.71            | 0.00         | 94.00        | 2.24             | 0.71            | 0.00         |
| 42.00        | 2.24             | 0.71            | 0.00         | 95.00        | 2.24             | 0.71            | 0.00         |
| 43.00        | 2.24             | 0.71            | 0.00         | 96.00        | 2.24             | 0.71            | 0.00         |
| 44.00        | 2.24             | 0.71            | 0.00         | 97.00        | 2.24             | 0.71            | 0.00         |
| 45.00        | 2.24             | 0.71            | 0.00         | 98.00        | 2.24             | 0.71            | 0.00         |
| 46.00        | 2.24             | 0.71            | 0.00         | 99.00        | 2.24             | 0.71            | 0.00         |
| 47.00        | 2.24             | 0.71            | 0.00         | 100.00       | 2.24             | 0.71            | 0.00         |
| 48.00        | 2.24             | 0.71            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.71            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.71            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.71            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.71            | 0.00         |              |                  |                 |              |

**Summary for Reach 1R: Existing Swale**

Inflow Area = 4.252 ac, 7.24% Impervious, Inflow Depth = 0.13" for 1-yr event  
 Inflow = 0.76 cfs @ 12.05 hrs, Volume= 0.047 af  
 Outflow = 0.73 cfs @ 12.08 hrs, Volume= 0.047 af, Atten= 4%, Lag= 1.6 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.83 fps, Min. Travel Time= 2.2 min  
 Avg. Velocity = 0.56 fps, Avg. Travel Time= 7.2 min

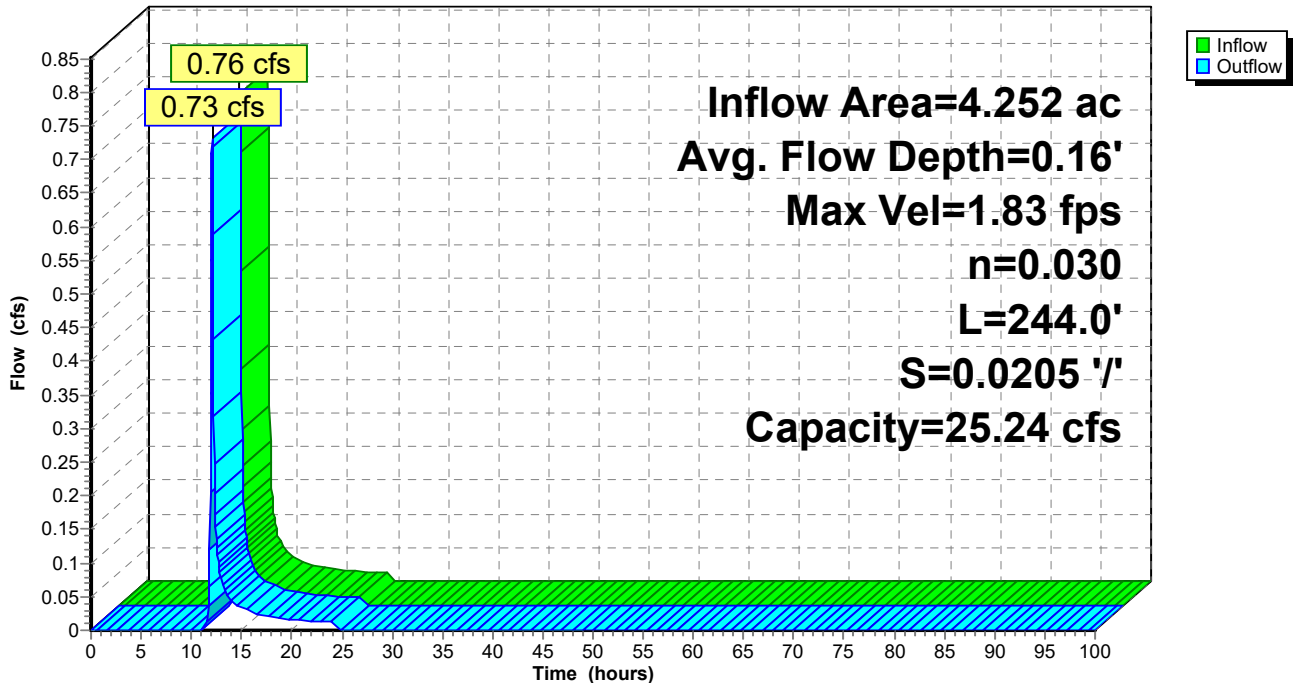
Peak Storage= 97 cf @ 12.08 hrs  
 Average Depth at Peak Storage= 0.16' , Surface Width= 2.96'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 '/  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

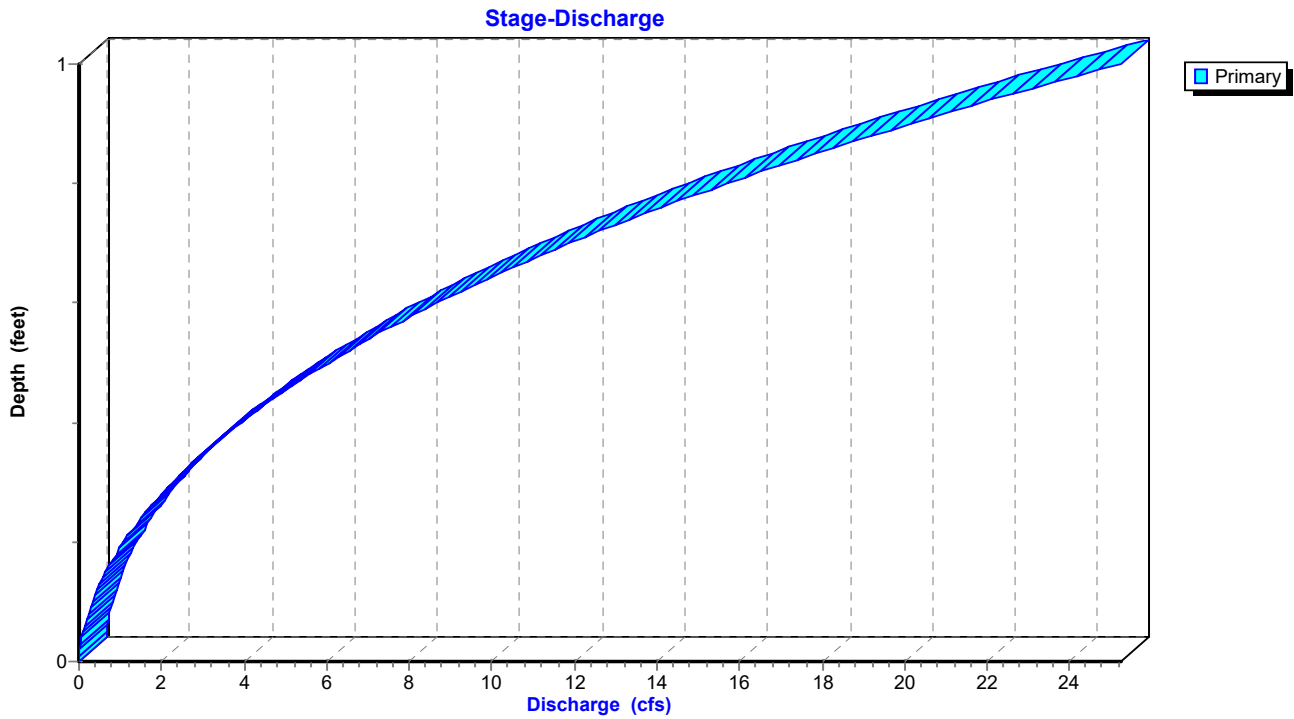


**Reach 1R: Existing Swale**

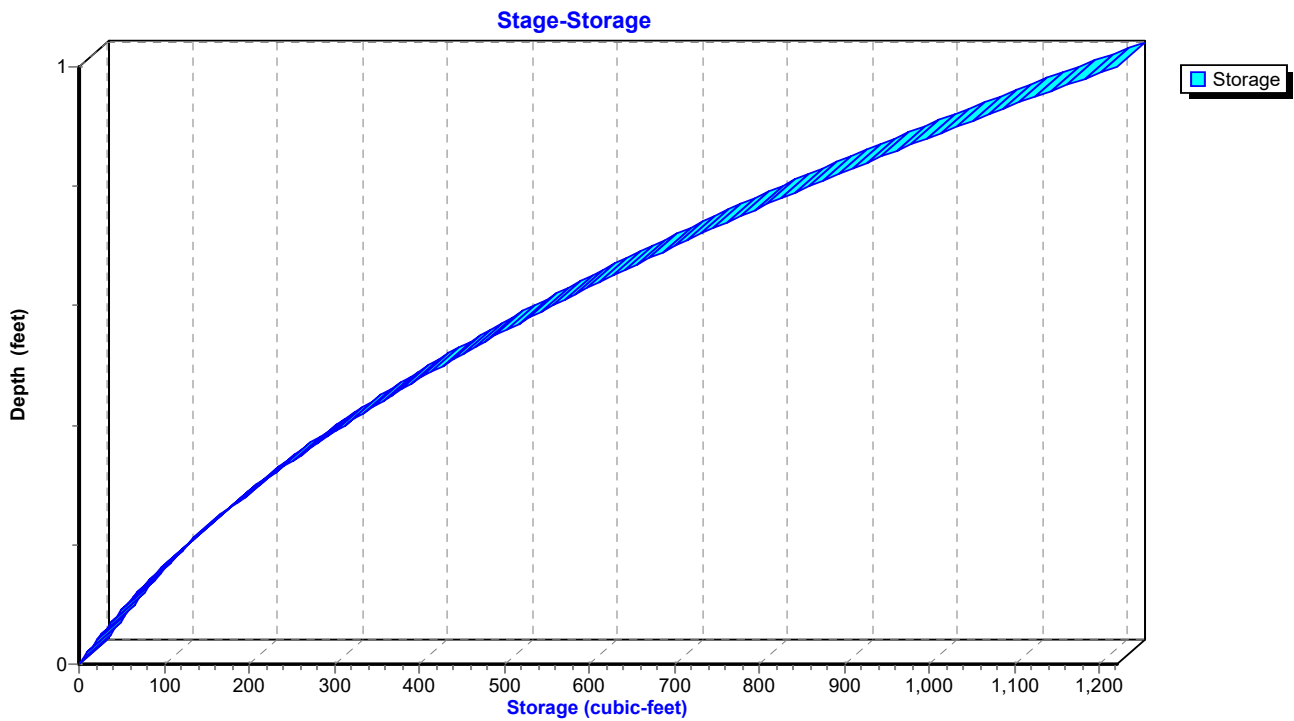
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale





**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>316.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.12</b>  | <b>32</b>            | <b>316.06</b>    | <b>0.14</b>   |
| 15.00        | 0.03         | 13                   | 316.03           | 0.03          |
| 17.50        | 0.02         | 10                   | 316.02           | 0.02          |
| 20.00        | 0.02         | 8                    | 316.02           | 0.02          |
| 22.50        | 0.01         | 8                    | 316.02           | 0.01          |
| 25.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.413 ac, 8.82% Impervious, Inflow Depth = 0.06" for 1-yr event  
 Inflow = 0.03 cfs @ 13.00 hrs, Volume= 0.018 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 315.64' @ 24.60 hrs Surf.Area= 0.131 ac Storage= 0.211 af (0.018 af above start)

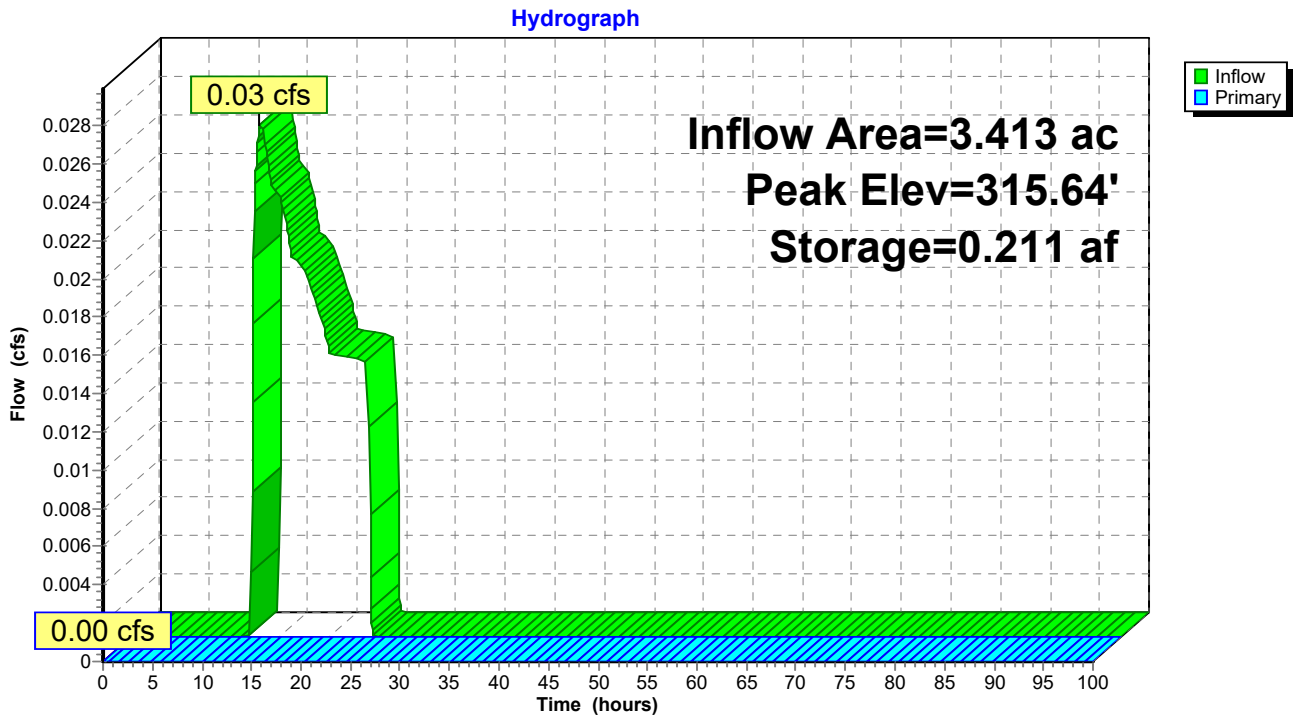
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |
|------------------|-------------------|---------------|--|-----------------------|------------------|
| #1               | 313.83'           | 0.443 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |
| 313.83           | 0.088             | 271.6         | 0.000  | 0.000                 | 0.088            |
| 314.00           | 0.107             | 290.3         | 0.017  | 0.017                 | 0.107            |
| 315.50           | 0.128             | 309.9         | 0.176  | 0.193                 | 0.131            |
| 316.00           | 0.139             | 319.8         | 0.067  | 0.259                 | 0.143            |
| 316.50           | 0.154             | 348.8         | 0.073  | 0.333                 | 0.179            |
| 317.00           | 0.295             | 446.8         | 0.110  | 0.443                 | 0.321            |

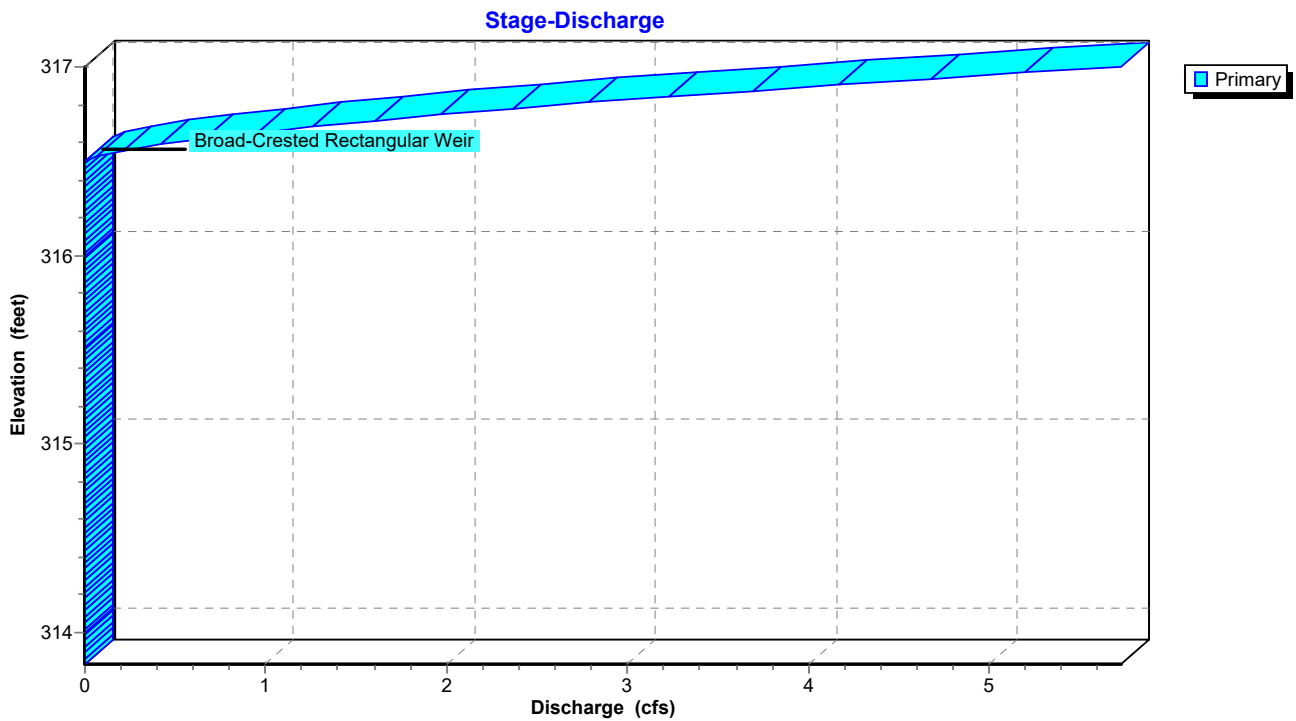
| Device | Routing | Invert  | Outlet Devices  |      |      |      |      |      |      |      |      |
|--------|---------|---------|---|------|------|------|------|------|------|------|------|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |      |      |      |      |      |      |      |      |
|        |         |         | Head (feet)   | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 |
|        |         |         | Coef. (English)   | 2.68 | 2.70 | 2.70 | 2.64 | 2.63 | 2.64 | 2.64 | 2.63 |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=315.50' TW=316.00' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

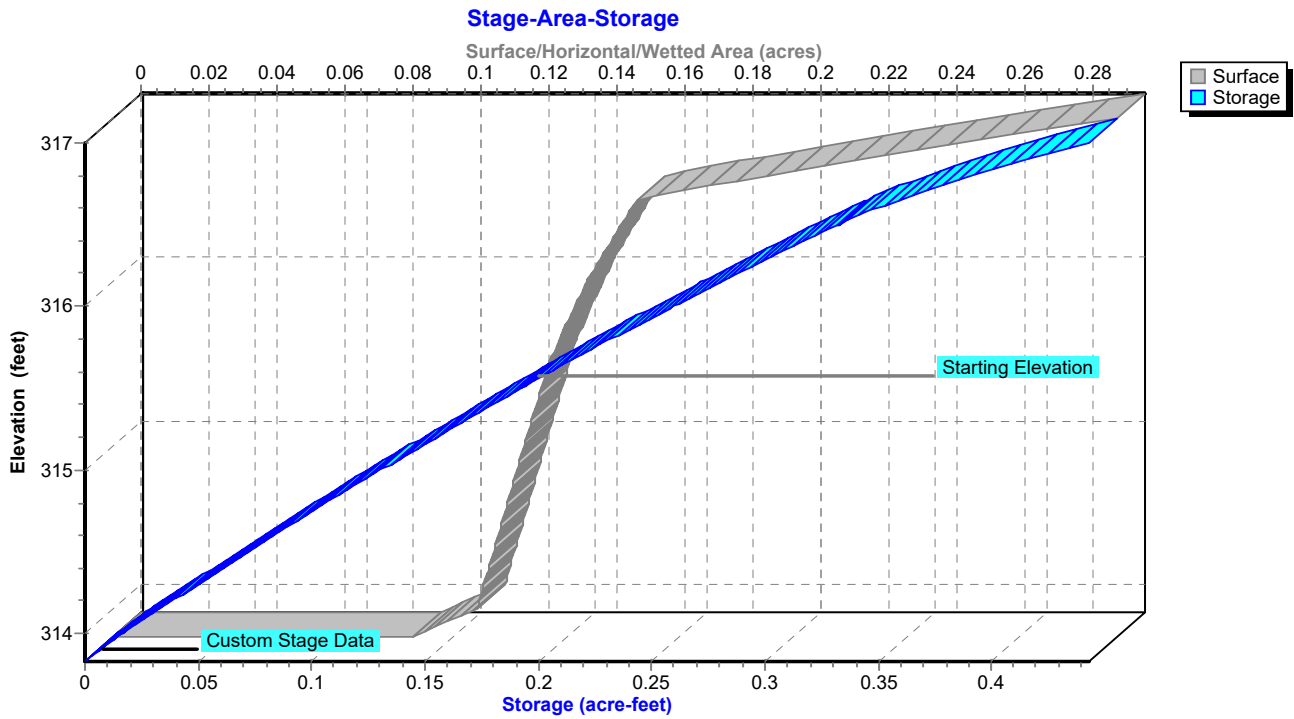
### Pond 1ST: Existing Sediment Trap



### Pond 1ST: Existing Sediment Trap



### Pond 1ST: Existing Sediment Trap



**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.193               | 315.50           | <b>0.00</b>   |
| 2.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 5.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 7.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 10.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 12.50        | <b>0.02</b>  | 0.193               | 315.50           | 0.00          |
| 15.00        | <b>0.02</b>  | 0.198               | 315.54           | 0.00          |
| 17.50        | 0.02         | 0.202               | 315.58           | 0.00          |
| 20.00        | 0.02         | 0.206               | 315.60           | 0.00          |
| 22.50        | 0.01         | <b>0.209</b>        | <b>315.63</b>    | 0.00          |
| 25.00        | 0.00         | <b>0.211</b>        | <b>315.64</b>    | 0.00          |
| 27.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 30.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 32.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 35.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 37.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 40.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 42.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 45.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 47.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 50.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 52.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 55.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 57.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 60.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 62.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 65.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 67.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 70.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 72.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 75.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 77.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 80.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 82.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 85.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 87.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 90.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 92.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 95.00        | 0.00         | 0.211               | 315.64           | 0.00          |
| 97.50        | 0.00         | 0.211               | 315.64           | 0.00          |
| 100.00       | 0.00         | 0.211               | 315.64           | 0.00          |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |



**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 0.26" for 1-yr event  
 Inflow = 1.88 cfs @ 12.04 hrs, Volume= 0.114 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 309.79' @ 29.35 hrs Surf.Area= 0.077 ac Storage= 0.125 af (0.114 af above start)

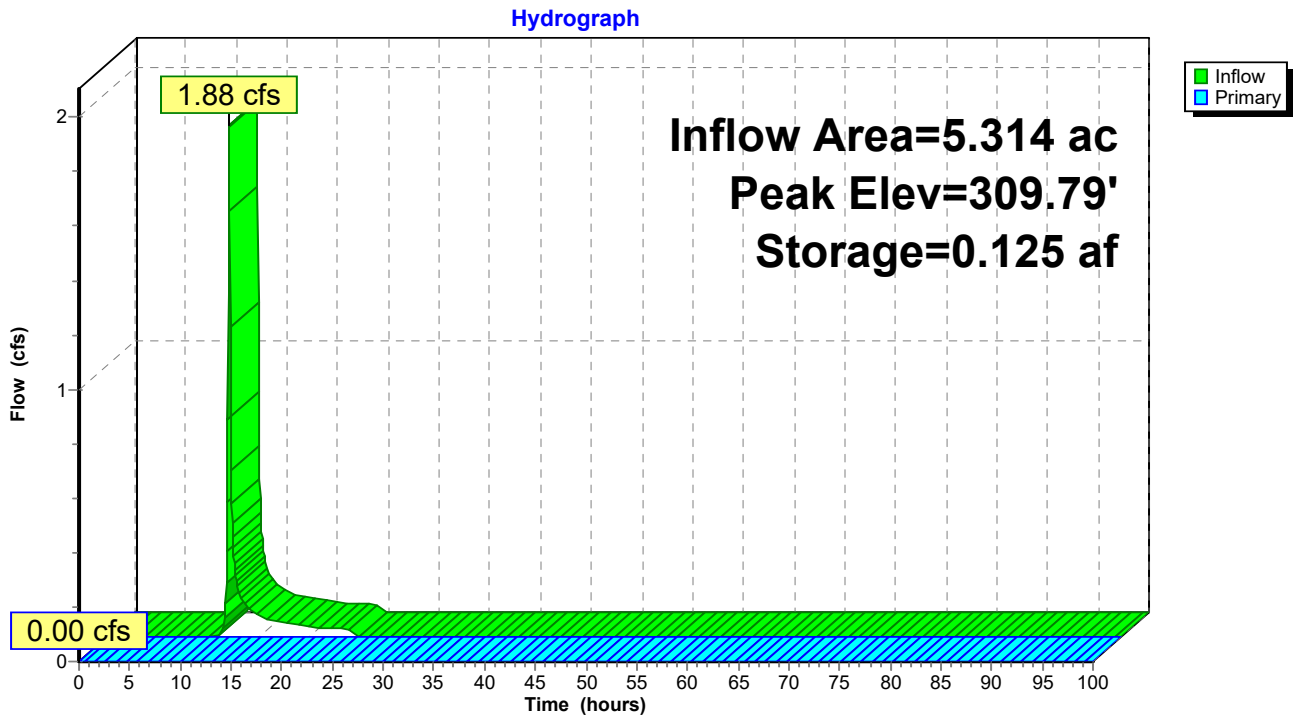
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|
| #1                  | 307.00'              | 0.248 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |
| 307.00              | 0.019                | 188.4            | 0.000  | 0.000                    | 0.019               |
| 307.50              | 0.026                | 206.4            | 0.011  | 0.011                    | 0.032               |
| 308.00              | 0.036                | 232.2            | 0.015  | 0.027                    | 0.053               |
| 309.00              | 0.057                | 269.3            | 0.046  | 0.073                    | 0.087               |
| 310.00              | 0.083                | 316.3            | 0.070  | 0.142                    | 0.138               |
| 311.00              | 0.131                | 434.9            | 0.106  | 0.248                    | 0.301               |

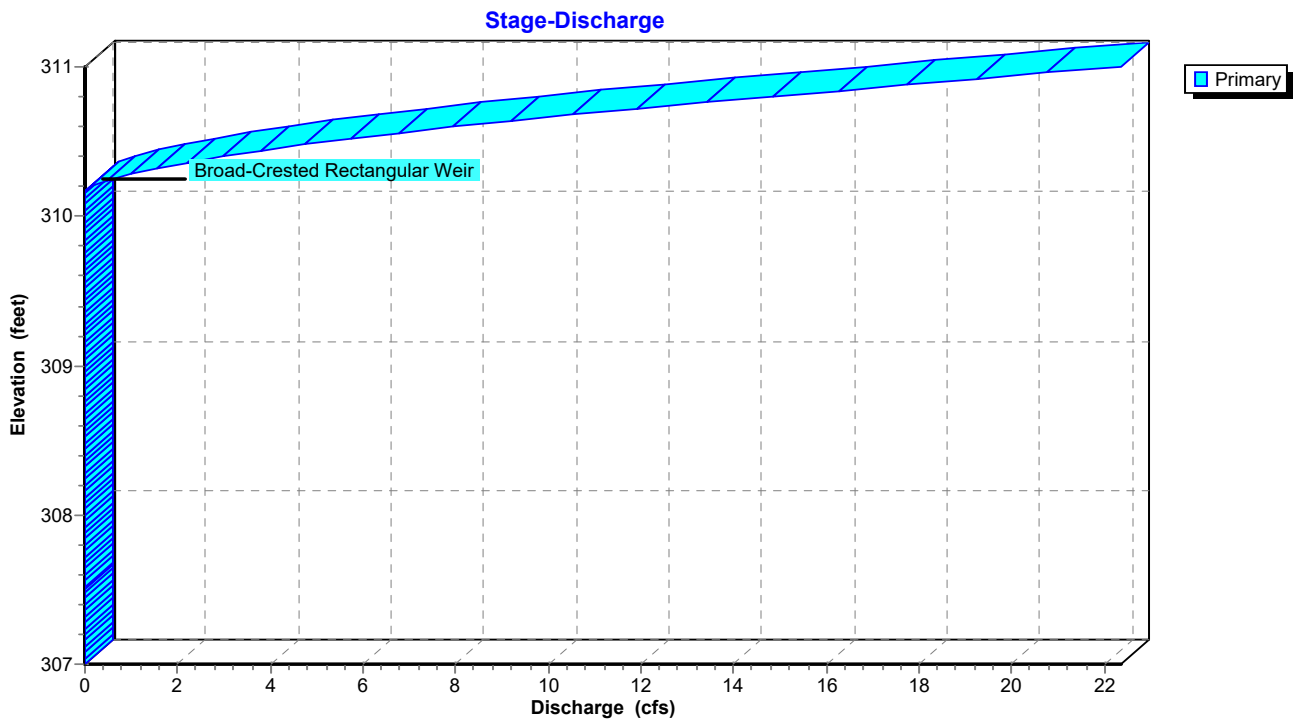
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64    |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74                         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=307.50' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

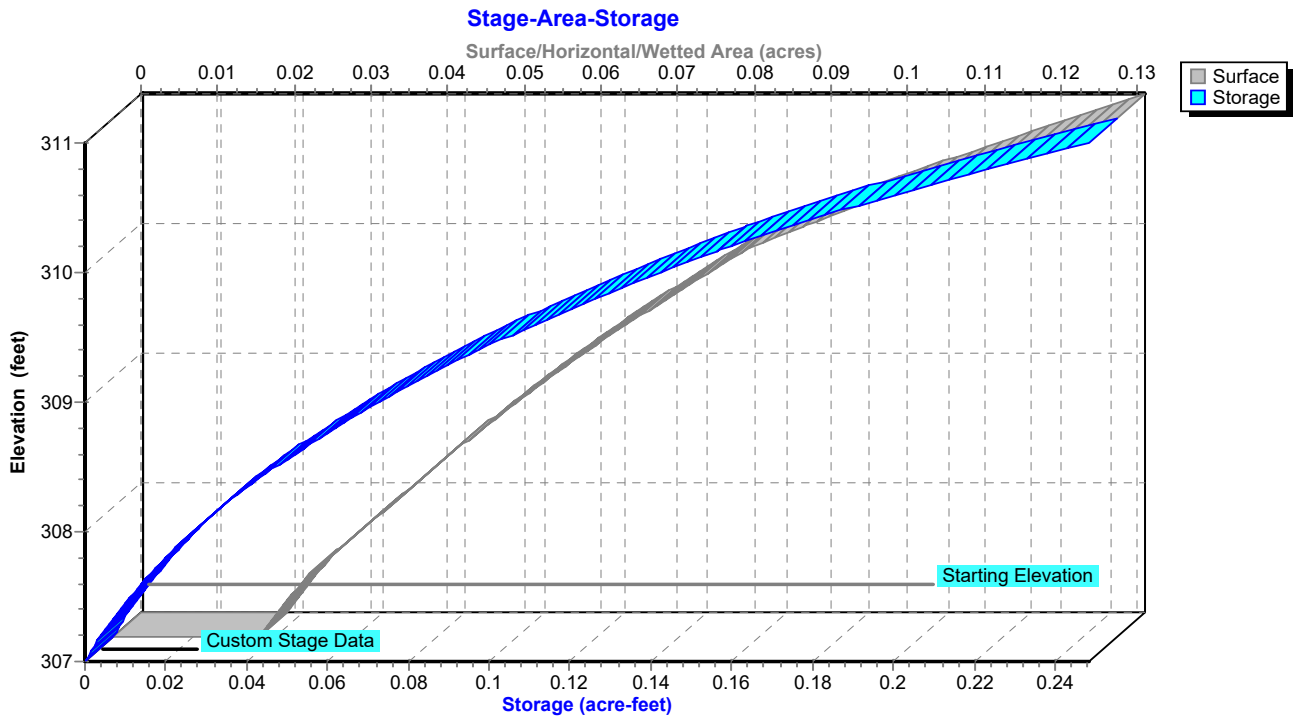
### Pond 2ST: Existing Sediment Trap



### Pond 2ST: Existing Sediment Trap



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.011               | 307.50           | <b>0.00</b>   |
| 2.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 5.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 7.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.011               | 307.50           | 0.00          |
| 12.50        | <b>0.30</b>  | 0.065               | 308.86           | 0.00          |
| 15.00        | 0.08         | 0.091               | 309.31           | 0.00          |
| 17.50        | 0.05         | 0.104               | 309.50           | 0.00          |
| 20.00        | 0.04         | 0.114               | 309.63           | 0.00          |
| 22.50        | 0.03         | 0.121               | 309.73           | 0.00          |
| 25.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 27.50        | 0.00         | 0.125               | <b>309.79</b>    | 0.00          |
| 30.00        | 0.00         | <b>0.125</b>        | <b>309.79</b>    | 0.00          |
| 32.50        | 0.00         | <b>0.125</b>        | 309.79           | 0.00          |
| 35.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 37.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 40.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 42.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 45.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 47.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 50.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 52.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 55.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 57.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 60.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 62.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 65.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 67.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 70.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 72.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 75.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 77.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 80.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 82.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 85.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 87.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 90.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 92.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 95.00        | 0.00         | 0.125               | 309.79           | 0.00          |
| 97.50        | 0.00         | 0.125               | 309.79           | 0.00          |
| 100.00       | 0.00         | 0.125               | 309.79           | 0.00          |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

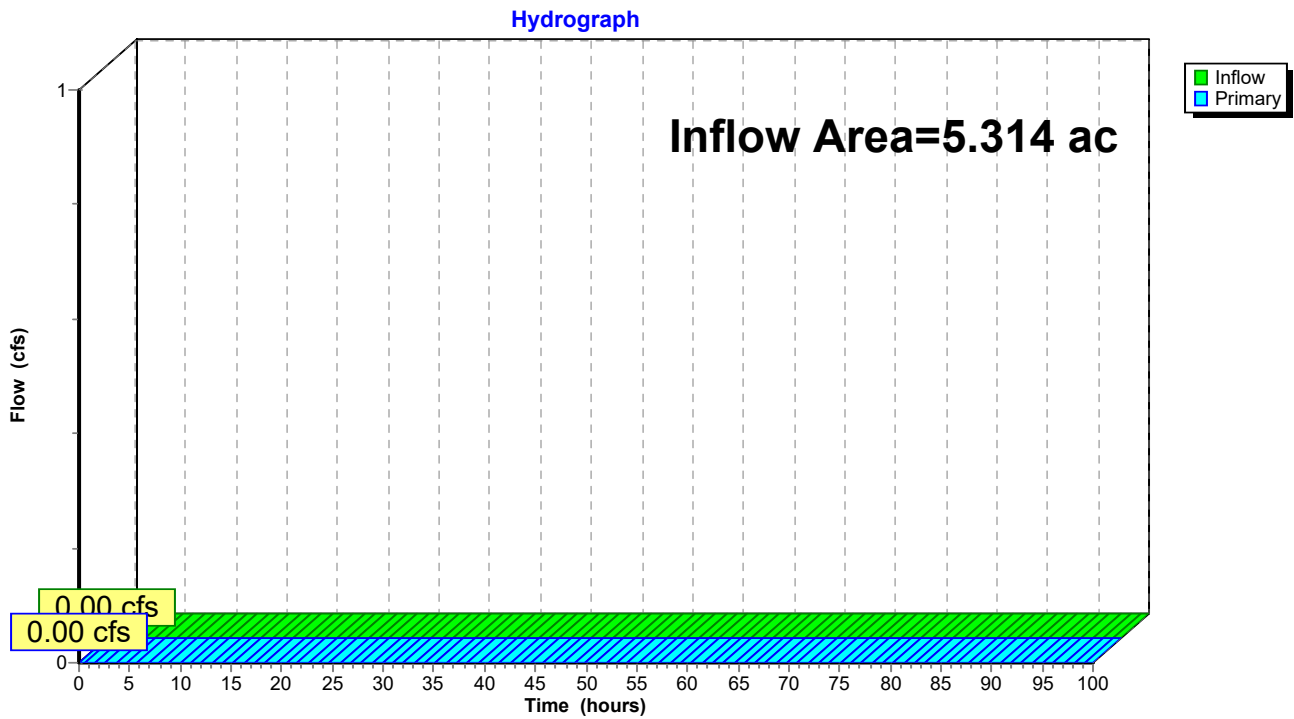
| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 0.00" for 1-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1





**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

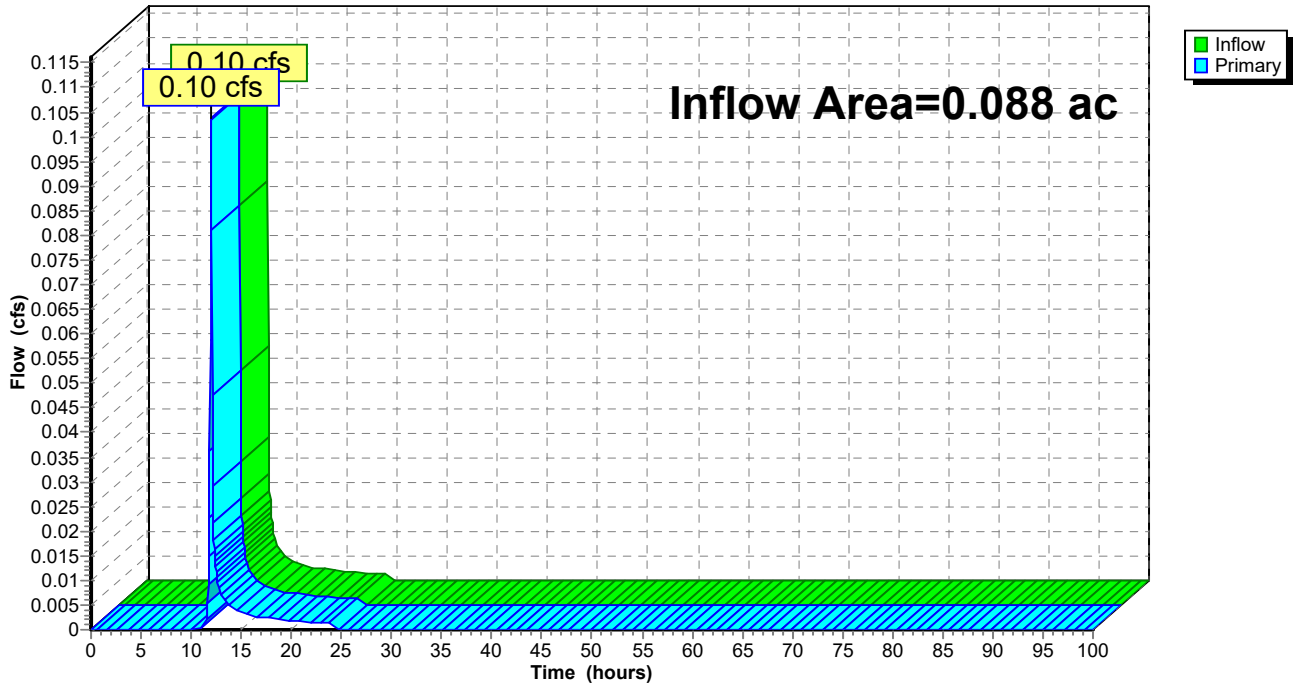
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.088 ac, 0.00% Impervious, Inflow Depth = 0.71" for 1-yr event  
Inflow = 0.10 cfs @ 11.99 hrs, Volume= 0.005 af  
Primary = 0.10 cfs @ 11.99 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.10</b>  | 0.00             | <b>0.10</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.01         | 0.00             | 0.01          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Existing Stormwater Conditions Final D Soils FarmType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |   |
|---|---|
| <b>Subcatchment 1S: Subcat 1</b>        | Runoff Area=3.413 ac 8.82% Impervious Runoff Depth=0.50"<br>Flow Length=499' Tc=10.0 min CN=57 Runoff=1.88 cfs 0.143 af                       |
| <b>Subcatchment 2aS: Subcat 2a</b>      | Runoff Area=0.839 ac 0.83% Impervious Runoff Depth=1.74"<br>Flow Length=211' Tc=12.1 min CN=79 Runoff=2.06 cfs 0.122 af                       |
| <b>Subcatchment 2bS: Subcat 2b</b>      | Runoff Area=1.062 ac 10.45% Impervious Runoff Depth=1.89"<br>Flow Length=331' Tc=9.7 min CN=81 Runoff=3.07 cfs 0.167 af                       |
| <b>Subcatchment 3S: Subcat 3</b>        | Runoff Area=0.088 ac 0.00% Impervious Runoff Depth=1.81"<br>Flow Length=225' Tc=7.3 min CN=80 Runoff=0.27 cfs 0.013 af                        |
| <b>Reach 1R: Existing Swale</b>         | Avg. Flow Depth=0.28' Max Vel=2.52 fps Inflow=2.06 cfs 0.124 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=2.02 cfs 0.124 af |
| <b>Pond 1ST: Existing Sediment Trap</b> | Peak Elev=316.51' Storage=0.334 af Inflow=1.88 cfs 0.143 af<br>Outflow=0.02 cfs 0.003 af  |
| <b>Pond 2ST: Existing Sediment Trap</b> | Peak Elev=310.25' Storage=0.165 af Inflow=4.96 cfs 0.291 af<br>Outflow=0.62 cfs 0.145 af  |
| <b>Link AP1: Analysis Point 1</b>       | Inflow=0.62 cfs 0.145 af<br>Primary=0.62 cfs 0.145 af   |
| <b>Link AP2: Analysis Point 2</b>       | Inflow=0.27 cfs 0.013 af<br>Primary=0.27 cfs 0.013 af   |

**Total Runoff Area = 5.402 ac Runoff Volume = 0.445 af Average Runoff Depth = 0.99"**  
**92.24% Pervious = 4.983 ac 7.76% Impervious = 0.419 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 1.88 cfs @ 12.05 hrs, Volume= 0.143 af, Depth= 0.50"

Routed to Pond 1ST : Existing Sediment Trap

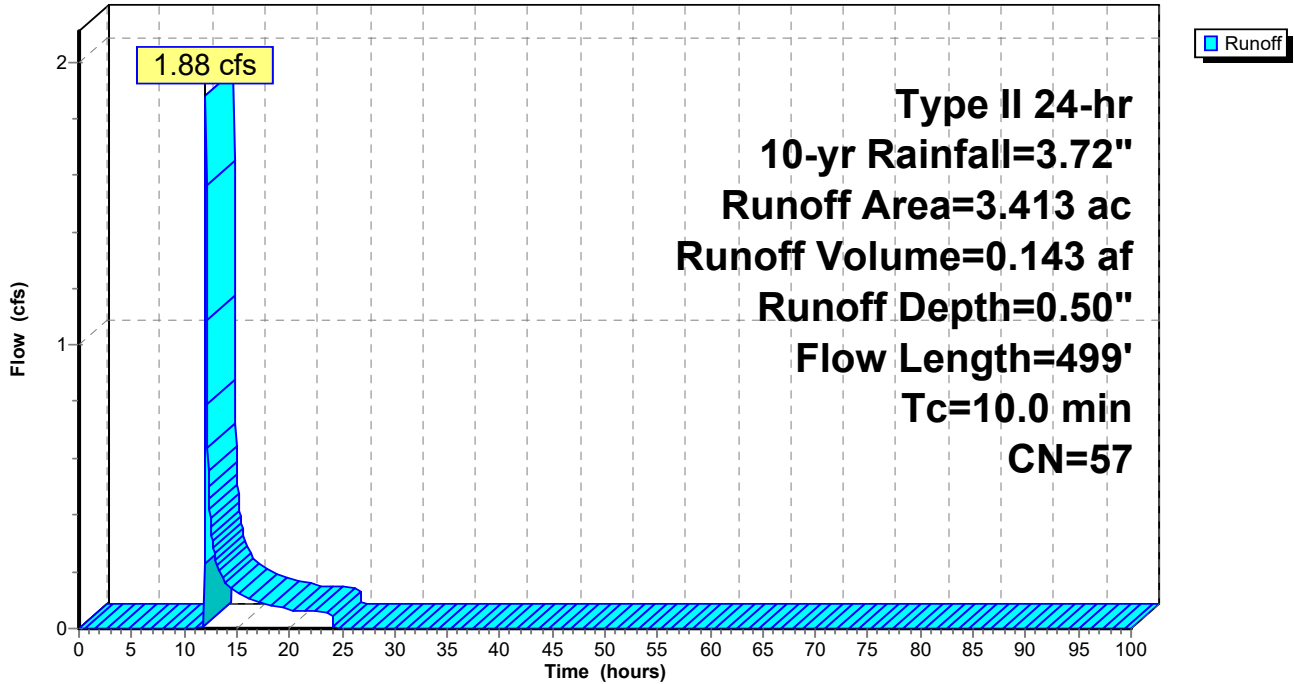
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| * 0.022   | 98 | Roofs, HSG A                        |
| * 0.005   | 98 | Paved parking, HSG A                |
| 0.136     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.252     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 0.876     | 78 | Meadow, non-grazed, HSG D           |
| * 0.438   | 89 | Gravel surface, HSG D               |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.413     | 57 | Weighted Average                    |
| 3.112     |    | 91.18% Pervious Area                |
| 0.301     |    | 8.82% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.2      | 69            | 0.0600        | 4.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.0     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



Hydrograph for Subcatchment 1S: Subcat 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.50            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.50            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.50            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.50            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.50            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.50            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.50            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.50            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.50            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.50            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.50            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.50            | 0.00         |
| 12.00        | 2.47             | 0.11            | <b>1.55</b>  | 65.00        | 3.72             | 0.50            | 0.00         |
| 13.00        | 2.87             | 0.21            | <b>0.24</b>  | 66.00        | 3.72             | 0.50            | 0.00         |
| 14.00        | 3.05             | 0.26            | 0.16         | 67.00        | 3.72             | 0.50            | 0.00         |
| 15.00        | 3.18             | 0.30            | 0.13         | 68.00        | 3.72             | 0.50            | 0.00         |
| 16.00        | 3.27             | 0.33            | 0.11         | 69.00        | 3.72             | 0.50            | 0.00         |
| 17.00        | 3.35             | 0.36            | 0.09         | 70.00        | 3.72             | 0.50            | 0.00         |
| 18.00        | 3.43             | 0.39            | 0.09         | 71.00        | 3.72             | 0.50            | 0.00         |
| 19.00        | 3.49             | 0.41            | 0.08         | 72.00        | 3.72             | 0.50            | 0.00         |
| 20.00        | 3.54             | 0.43            | 0.06         | 73.00        | 3.72             | 0.50            | 0.00         |
| 21.00        | 3.59             | 0.45            | 0.06         | 74.00        | 3.72             | 0.50            | 0.00         |
| 22.00        | 3.63             | 0.47            | 0.06         | 75.00        | 3.72             | 0.50            | 0.00         |
| 23.00        | 3.68             | 0.48            | 0.06         | 76.00        | 3.72             | 0.50            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.50</b>     | 0.06         | 77.00        | 3.72             | 0.50            | 0.00         |
| 25.00        | 3.72             | 0.50            | 0.00         | 78.00        | 3.72             | 0.50            | 0.00         |
| 26.00        | 3.72             | 0.50            | 0.00         | 79.00        | 3.72             | 0.50            | 0.00         |
| 27.00        | 3.72             | 0.50            | 0.00         | 80.00        | 3.72             | 0.50            | 0.00         |
| 28.00        | 3.72             | 0.50            | 0.00         | 81.00        | 3.72             | 0.50            | 0.00         |
| 29.00        | 3.72             | 0.50            | 0.00         | 82.00        | 3.72             | 0.50            | 0.00         |
| 30.00        | 3.72             | 0.50            | 0.00         | 83.00        | 3.72             | 0.50            | 0.00         |
| 31.00        | 3.72             | 0.50            | 0.00         | 84.00        | 3.72             | 0.50            | 0.00         |
| 32.00        | 3.72             | 0.50            | 0.00         | 85.00        | 3.72             | 0.50            | 0.00         |
| 33.00        | 3.72             | 0.50            | 0.00         | 86.00        | 3.72             | 0.50            | 0.00         |
| 34.00        | 3.72             | 0.50            | 0.00         | 87.00        | 3.72             | 0.50            | 0.00         |
| 35.00        | 3.72             | 0.50            | 0.00         | 88.00        | 3.72             | 0.50            | 0.00         |
| 36.00        | 3.72             | 0.50            | 0.00         | 89.00        | 3.72             | 0.50            | 0.00         |
| 37.00        | 3.72             | 0.50            | 0.00         | 90.00        | 3.72             | 0.50            | 0.00         |
| 38.00        | 3.72             | 0.50            | 0.00         | 91.00        | 3.72             | 0.50            | 0.00         |
| 39.00        | 3.72             | 0.50            | 0.00         | 92.00        | 3.72             | 0.50            | 0.00         |
| 40.00        | 3.72             | 0.50            | 0.00         | 93.00        | 3.72             | 0.50            | 0.00         |
| 41.00        | 3.72             | 0.50            | 0.00         | 94.00        | 3.72             | 0.50            | 0.00         |
| 42.00        | 3.72             | 0.50            | 0.00         | 95.00        | 3.72             | 0.50            | 0.00         |
| 43.00        | 3.72             | 0.50            | 0.00         | 96.00        | 3.72             | 0.50            | 0.00         |
| 44.00        | 3.72             | 0.50            | 0.00         | 97.00        | 3.72             | 0.50            | 0.00         |
| 45.00        | 3.72             | 0.50            | 0.00         | 98.00        | 3.72             | 0.50            | 0.00         |
| 46.00        | 3.72             | 0.50            | 0.00         | 99.00        | 3.72             | 0.50            | 0.00         |
| 47.00        | 3.72             | 0.50            | 0.00         | 100.00       | 3.72             | 0.50            | 0.00         |
| 48.00        | 3.72             | 0.50            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.50            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.50            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.50            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.50            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 2.06 cfs @ 12.04 hrs, Volume= 0.122 af, Depth= 1.74"  
 Routed to Reach 1R : Existing Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

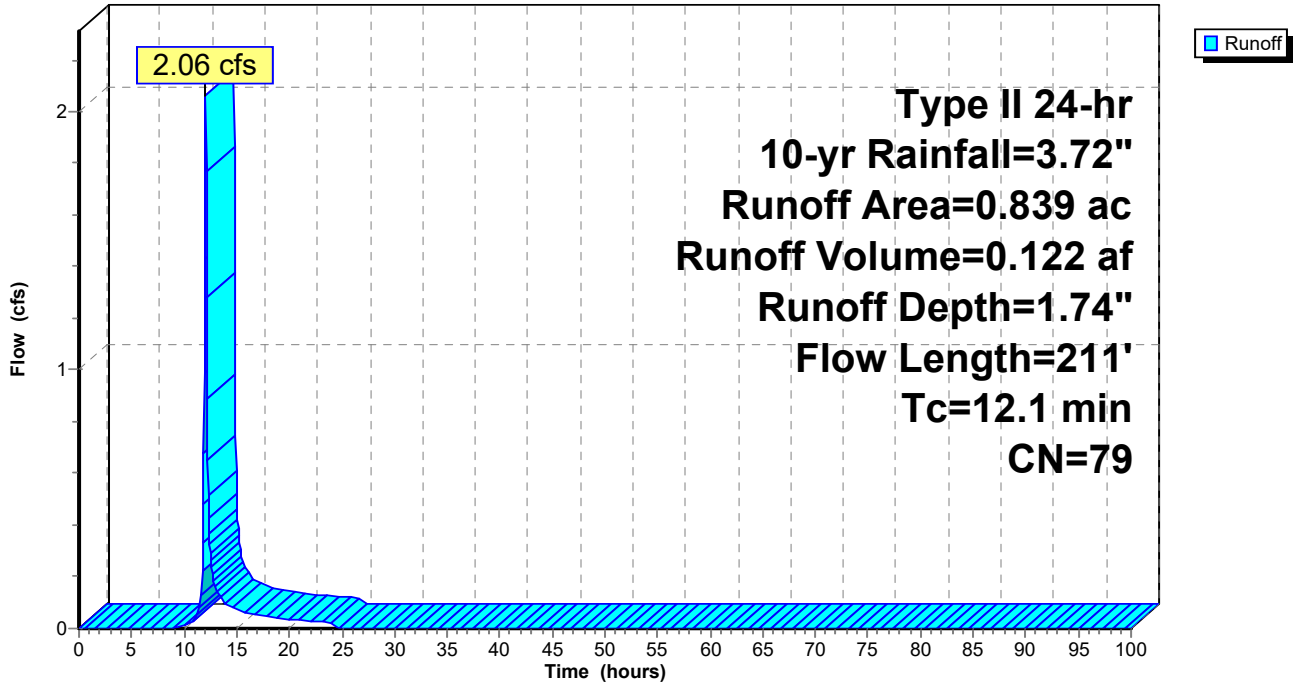
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.727     | 78 | Meadow, non-grazed, HSG D |
| 0.004     | 71 | Meadow, non-grazed, HSG C |
| * 0.101   | 89 | Gravel surface, HSG D     |
| * 0.007   | 98 | Water Surface, HSG D      |
| 0.839     | 79 | Weighted Average          |
| 0.832     |    | 99.17% Pervious Area      |
| 0.007     |    | 0.83% Impervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.0      | 24            | 0.0060        | 0.08              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.7      | 35            | 0.0110        | 0.79              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 5.3      | 41            | 0.0150        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.6      | 35            | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.1      | 27            | 0.0240        | 3.14              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 10            | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 33            | 0.0210        | 2.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 6             | 0.0340        | 1.29              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 12.1     | 211           | Total         |                   |                |   |



Subcatchment 2aS: Subcat 2a

Hydrograph



**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 1.74            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 1.74            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 1.74            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 1.74            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 1.74            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 1.74            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 1.74            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 1.74            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 1.74            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 1.74            | 0.00         |
| 10.00        | 0.67             | 0.01            | 0.01         | 63.00        | 3.72             | 1.74            | 0.00         |
| 11.00        | 0.87             | 0.04            | 0.04         | 64.00        | 3.72             | 1.74            | 0.00         |
| 12.00        | 2.47             | 0.81            | <b>1.90</b>  | 65.00        | 3.72             | 1.74            | 0.00         |
| 13.00        | 2.87             | 1.10            | <b>0.16</b>  | 66.00        | 3.72             | 1.74            | 0.00         |
| 14.00        | 3.05             | 1.23            | 0.09         | 67.00        | 3.72             | 1.74            | 0.00         |
| 15.00        | 3.18             | 1.32            | 0.07         | 68.00        | 3.72             | 1.74            | 0.00         |
| 16.00        | 3.27             | 1.39            | 0.06         | 69.00        | 3.72             | 1.74            | 0.00         |
| 17.00        | 3.35             | 1.45            | 0.05         | 70.00        | 3.72             | 1.74            | 0.00         |
| 18.00        | 3.43             | 1.51            | 0.04         | 71.00        | 3.72             | 1.74            | 0.00         |
| 19.00        | 3.49             | 1.56            | 0.04         | 72.00        | 3.72             | 1.74            | 0.00         |
| 20.00        | 3.54             | 1.60            | 0.03         | 73.00        | 3.72             | 1.74            | 0.00         |
| 21.00        | 3.59             | 1.64            | 0.03         | 74.00        | 3.72             | 1.74            | 0.00         |
| 22.00        | 3.63             | 1.67            | 0.03         | 75.00        | 3.72             | 1.74            | 0.00         |
| 23.00        | 3.68             | 1.71            | 0.03         | 76.00        | 3.72             | 1.74            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>1.74</b>     | 0.03         | 77.00        | 3.72             | 1.74            | 0.00         |
| 25.00        | 3.72             | 1.74            | 0.00         | 78.00        | 3.72             | 1.74            | 0.00         |
| 26.00        | 3.72             | 1.74            | 0.00         | 79.00        | 3.72             | 1.74            | 0.00         |
| 27.00        | 3.72             | 1.74            | 0.00         | 80.00        | 3.72             | 1.74            | 0.00         |
| 28.00        | 3.72             | 1.74            | 0.00         | 81.00        | 3.72             | 1.74            | 0.00         |
| 29.00        | 3.72             | 1.74            | 0.00         | 82.00        | 3.72             | 1.74            | 0.00         |
| 30.00        | 3.72             | 1.74            | 0.00         | 83.00        | 3.72             | 1.74            | 0.00         |
| 31.00        | 3.72             | 1.74            | 0.00         | 84.00        | 3.72             | 1.74            | 0.00         |
| 32.00        | 3.72             | 1.74            | 0.00         | 85.00        | 3.72             | 1.74            | 0.00         |
| 33.00        | 3.72             | 1.74            | 0.00         | 86.00        | 3.72             | 1.74            | 0.00         |
| 34.00        | 3.72             | 1.74            | 0.00         | 87.00        | 3.72             | 1.74            | 0.00         |
| 35.00        | 3.72             | 1.74            | 0.00         | 88.00        | 3.72             | 1.74            | 0.00         |
| 36.00        | 3.72             | 1.74            | 0.00         | 89.00        | 3.72             | 1.74            | 0.00         |
| 37.00        | 3.72             | 1.74            | 0.00         | 90.00        | 3.72             | 1.74            | 0.00         |
| 38.00        | 3.72             | 1.74            | 0.00         | 91.00        | 3.72             | 1.74            | 0.00         |
| 39.00        | 3.72             | 1.74            | 0.00         | 92.00        | 3.72             | 1.74            | 0.00         |
| 40.00        | 3.72             | 1.74            | 0.00         | 93.00        | 3.72             | 1.74            | 0.00         |
| 41.00        | 3.72             | 1.74            | 0.00         | 94.00        | 3.72             | 1.74            | 0.00         |
| 42.00        | 3.72             | 1.74            | 0.00         | 95.00        | 3.72             | 1.74            | 0.00         |
| 43.00        | 3.72             | 1.74            | 0.00         | 96.00        | 3.72             | 1.74            | 0.00         |
| 44.00        | 3.72             | 1.74            | 0.00         | 97.00        | 3.72             | 1.74            | 0.00         |
| 45.00        | 3.72             | 1.74            | 0.00         | 98.00        | 3.72             | 1.74            | 0.00         |
| 46.00        | 3.72             | 1.74            | 0.00         | 99.00        | 3.72             | 1.74            | 0.00         |
| 47.00        | 3.72             | 1.74            | 0.00         | 100.00       | 3.72             | 1.74            | 0.00         |
| 48.00        | 3.72             | 1.74            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 1.74            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 1.74            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 1.74            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 1.74            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2bS: Subcat 2b**

Runoff = 3.07 cfs @ 12.01 hrs, Volume= 0.167 af, Depth= 1.89"  
 Routed to Pond 2ST : Existing Sediment Trap

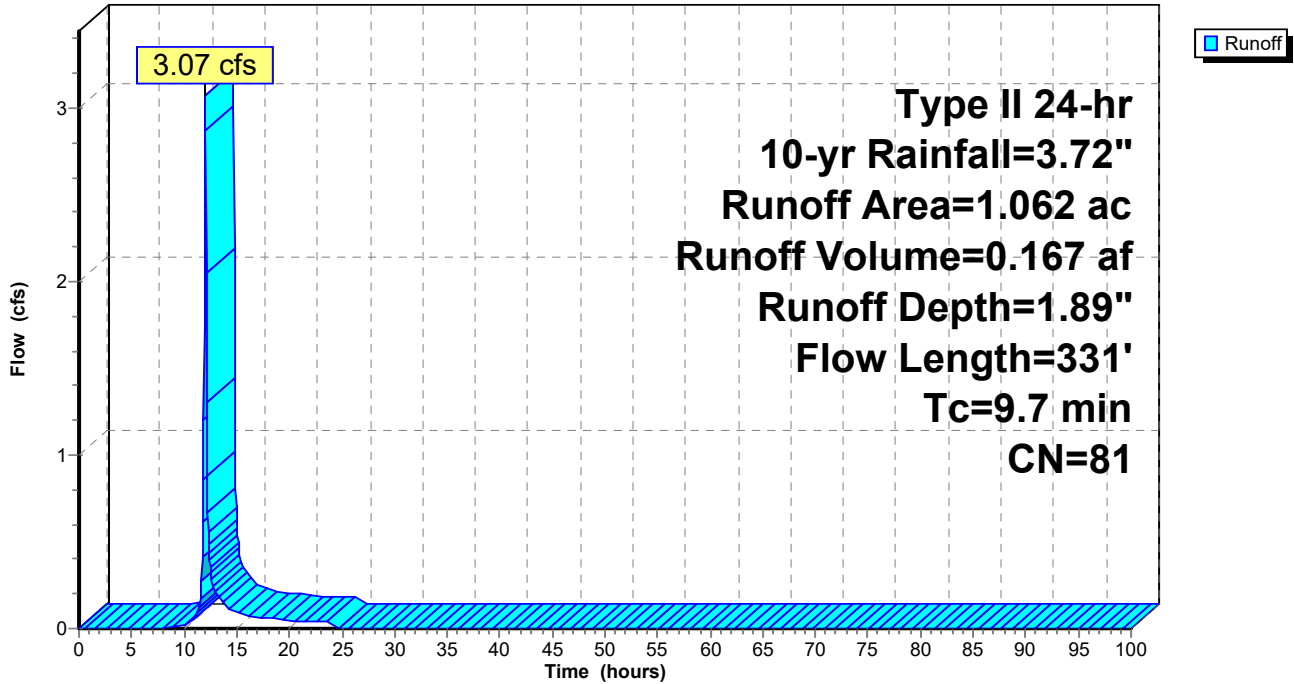
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.590     | 78 | Meadow, non-grazed, HSG D |
| 0.180     | 71 | Meadow, non-grazed, HSG C |
| * 0.148   | 89 | Gravel surface, HSG D     |
| * 0.006   | 98 | Water Surface, HSG D      |
| 0.105     | 98 | Water Surface, HSG C      |
| * 0.033   | 89 | Gravel surface, HSG C     |
| 1.062     | 81 | Weighted Average          |
| 0.951     |    | 89.55% Pervious Area      |
| 0.111     |    | 10.45% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.7      | 38            | 0.0140        | 0.88              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 6.0      | 62            | 0.0260        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.7      | 189           | 0.0280        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 28            | 0.0180        | 2.72              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 9.7      | 331           | Total         |                   |                |   |

### Subcatchment 2bS: Subcat 2b

Hydrograph



**Hydrograph for Subcatchment 2bS: Subcat 2b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 1.89            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 1.89            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 1.89            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 1.89            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 1.89            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 1.89            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 1.89            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 1.89            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 1.89            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.01         | 62.00        | 3.72             | 1.89            | 0.00         |
| 10.00        | 0.67             | 0.02            | 0.02         | 63.00        | 3.72             | 1.89            | 0.00         |
| 11.00        | 0.87             | 0.06            | 0.07         | 64.00        | 3.72             | 1.89            | 0.00         |
| 12.00        | 2.47             | 0.92            | <b>3.05</b>  | 65.00        | 3.72             | 1.89            | 0.00         |
| 13.00        | 2.87             | 1.22            | 0.21         | 66.00        | 3.72             | 1.89            | 0.00         |
| 14.00        | 3.05             | 1.35            | 0.12         | 67.00        | 3.72             | 1.89            | 0.00         |
| 15.00        | 3.18             | 1.45            | 0.10         | 68.00        | 3.72             | 1.89            | 0.00         |
| 16.00        | 3.27             | 1.53            | 0.08         | 69.00        | 3.72             | 1.89            | 0.00         |
| 17.00        | 3.35             | 1.59            | 0.07         | 70.00        | 3.72             | 1.89            | 0.00         |
| 18.00        | 3.43             | 1.65            | 0.06         | 71.00        | 3.72             | 1.89            | 0.00         |
| 19.00        | 3.49             | 1.70            | 0.05         | 72.00        | 3.72             | 1.89            | 0.00         |
| 20.00        | 3.54             | 1.74            | 0.04         | 73.00        | 3.72             | 1.89            | 0.00         |
| 21.00        | 3.59             | 1.78            | 0.04         | 74.00        | 3.72             | 1.89            | 0.00         |
| 22.00        | 3.63             | 1.82            | 0.04         | 75.00        | 3.72             | 1.89            | 0.00         |
| 23.00        | 3.68             | 1.85            | 0.04         | 76.00        | 3.72             | 1.89            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>1.89</b>     | 0.04         | 77.00        | 3.72             | 1.89            | 0.00         |
| 25.00        | 3.72             | 1.89            | 0.00         | 78.00        | 3.72             | 1.89            | 0.00         |
| 26.00        | 3.72             | 1.89            | 0.00         | 79.00        | 3.72             | 1.89            | 0.00         |
| 27.00        | 3.72             | 1.89            | 0.00         | 80.00        | 3.72             | 1.89            | 0.00         |
| 28.00        | 3.72             | 1.89            | 0.00         | 81.00        | 3.72             | 1.89            | 0.00         |
| 29.00        | 3.72             | 1.89            | 0.00         | 82.00        | 3.72             | 1.89            | 0.00         |
| 30.00        | 3.72             | 1.89            | 0.00         | 83.00        | 3.72             | 1.89            | 0.00         |
| 31.00        | 3.72             | 1.89            | 0.00         | 84.00        | 3.72             | 1.89            | 0.00         |
| 32.00        | 3.72             | 1.89            | 0.00         | 85.00        | 3.72             | 1.89            | 0.00         |
| 33.00        | 3.72             | 1.89            | 0.00         | 86.00        | 3.72             | 1.89            | 0.00         |
| 34.00        | 3.72             | 1.89            | 0.00         | 87.00        | 3.72             | 1.89            | 0.00         |
| 35.00        | 3.72             | 1.89            | 0.00         | 88.00        | 3.72             | 1.89            | 0.00         |
| 36.00        | 3.72             | 1.89            | 0.00         | 89.00        | 3.72             | 1.89            | 0.00         |
| 37.00        | 3.72             | 1.89            | 0.00         | 90.00        | 3.72             | 1.89            | 0.00         |
| 38.00        | 3.72             | 1.89            | 0.00         | 91.00        | 3.72             | 1.89            | 0.00         |
| 39.00        | 3.72             | 1.89            | 0.00         | 92.00        | 3.72             | 1.89            | 0.00         |
| 40.00        | 3.72             | 1.89            | 0.00         | 93.00        | 3.72             | 1.89            | 0.00         |
| 41.00        | 3.72             | 1.89            | 0.00         | 94.00        | 3.72             | 1.89            | 0.00         |
| 42.00        | 3.72             | 1.89            | 0.00         | 95.00        | 3.72             | 1.89            | 0.00         |
| 43.00        | 3.72             | 1.89            | 0.00         | 96.00        | 3.72             | 1.89            | 0.00         |
| 44.00        | 3.72             | 1.89            | 0.00         | 97.00        | 3.72             | 1.89            | 0.00         |
| 45.00        | 3.72             | 1.89            | 0.00         | 98.00        | 3.72             | 1.89            | 0.00         |
| 46.00        | 3.72             | 1.89            | 0.00         | 99.00        | 3.72             | 1.89            | 0.00         |
| 47.00        | 3.72             | 1.89            | 0.00         | 100.00       | 3.72             | 1.89            | 0.00         |
| 48.00        | 3.72             | 1.89            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 1.89            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 1.89            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 1.89            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 1.89            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.27 cfs @ 11.99 hrs, Volume= 0.013 af, Depth= 1.81"  
 Routed to Link AP2 : Analysis Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

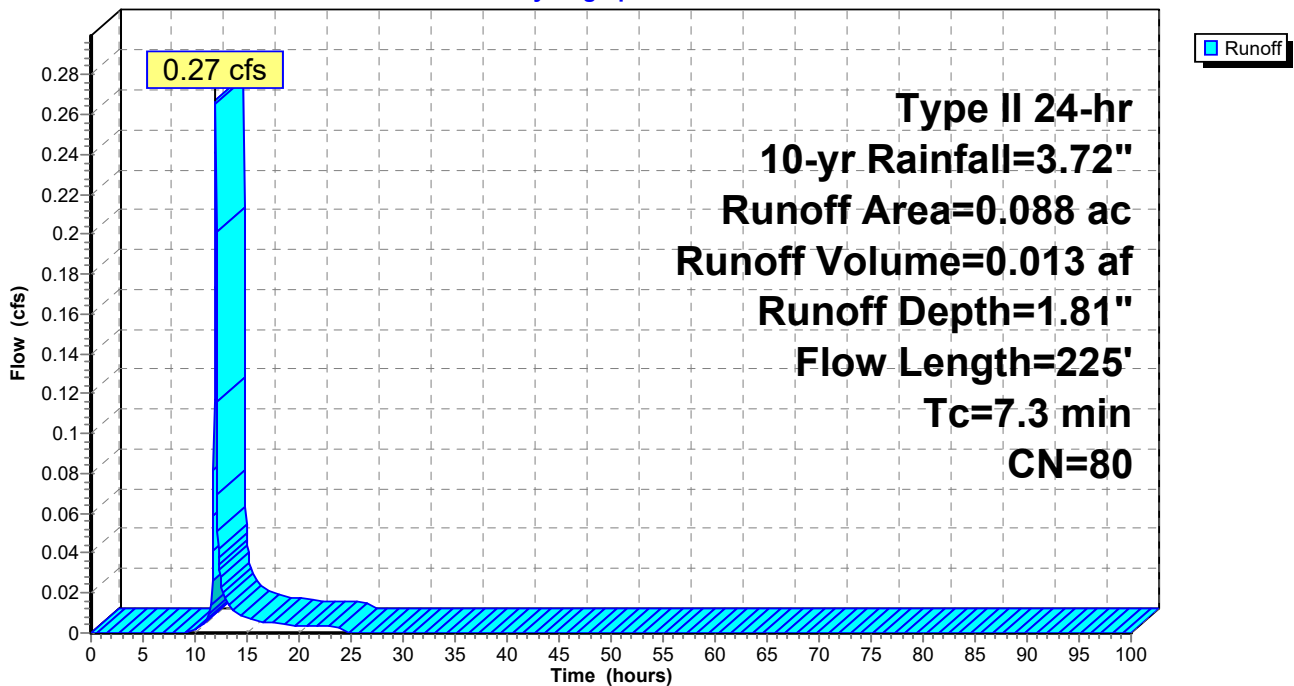
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| * 0.018   | 89 | Gravel surface, HSG A     |
| 0.070     | 78 | Meadow, non-grazed, HSG D |
| 0.088     | 80 | Weighted Average          |
| 0.088     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 3.1      | 12            | 0.0050        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0160        | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.6      | 118           | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.7      | 39            | 0.0030        | 0.38              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 225           | Total         |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**Hydrograph for Subcatchment 3S: Subcat 3**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 1.81            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 1.81            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 1.81            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 1.81            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 1.81            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 1.81            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 1.81            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 1.81            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 1.81            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 1.81            | 0.00         |
| 10.00        | 0.67             | 0.01            | 0.00         | 63.00        | 3.72             | 1.81            | 0.00         |
| 11.00        | 0.87             | 0.05            | 0.01         | 64.00        | 3.72             | 1.81            | 0.00         |
| 12.00        | 2.47             | 0.87            | <b>0.27</b>  | 65.00        | 3.72             | 1.81            | 0.00         |
| 13.00        | 2.87             | 1.15            | 0.02         | 66.00        | 3.72             | 1.81            | 0.00         |
| 14.00        | 3.05             | 1.29            | 0.01         | 67.00        | 3.72             | 1.81            | 0.00         |
| 15.00        | 3.18             | 1.38            | 0.01         | 68.00        | 3.72             | 1.81            | 0.00         |
| 16.00        | 3.27             | 1.46            | 0.01         | 69.00        | 3.72             | 1.81            | 0.00         |
| 17.00        | 3.35             | 1.52            | 0.01         | 70.00        | 3.72             | 1.81            | 0.00         |
| 18.00        | 3.43             | 1.58            | 0.00         | 71.00        | 3.72             | 1.81            | 0.00         |
| 19.00        | 3.49             | 1.63            | 0.00         | 72.00        | 3.72             | 1.81            | 0.00         |
| 20.00        | 3.54             | 1.67            | 0.00         | 73.00        | 3.72             | 1.81            | 0.00         |
| 21.00        | 3.59             | 1.71            | 0.00         | 74.00        | 3.72             | 1.81            | 0.00         |
| 22.00        | 3.63             | 1.74            | 0.00         | 75.00        | 3.72             | 1.81            | 0.00         |
| 23.00        | 3.68             | 1.78            | 0.00         | 76.00        | 3.72             | 1.81            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>1.81</b>     | 0.00         | 77.00        | 3.72             | 1.81            | 0.00         |
| 25.00        | 3.72             | 1.81            | 0.00         | 78.00        | 3.72             | 1.81            | 0.00         |
| 26.00        | 3.72             | 1.81            | 0.00         | 79.00        | 3.72             | 1.81            | 0.00         |
| 27.00        | 3.72             | 1.81            | 0.00         | 80.00        | 3.72             | 1.81            | 0.00         |
| 28.00        | 3.72             | 1.81            | 0.00         | 81.00        | 3.72             | 1.81            | 0.00         |
| 29.00        | 3.72             | 1.81            | 0.00         | 82.00        | 3.72             | 1.81            | 0.00         |
| 30.00        | 3.72             | 1.81            | 0.00         | 83.00        | 3.72             | 1.81            | 0.00         |
| 31.00        | 3.72             | 1.81            | 0.00         | 84.00        | 3.72             | 1.81            | 0.00         |
| 32.00        | 3.72             | 1.81            | 0.00         | 85.00        | 3.72             | 1.81            | 0.00         |
| 33.00        | 3.72             | 1.81            | 0.00         | 86.00        | 3.72             | 1.81            | 0.00         |
| 34.00        | 3.72             | 1.81            | 0.00         | 87.00        | 3.72             | 1.81            | 0.00         |
| 35.00        | 3.72             | 1.81            | 0.00         | 88.00        | 3.72             | 1.81            | 0.00         |
| 36.00        | 3.72             | 1.81            | 0.00         | 89.00        | 3.72             | 1.81            | 0.00         |
| 37.00        | 3.72             | 1.81            | 0.00         | 90.00        | 3.72             | 1.81            | 0.00         |
| 38.00        | 3.72             | 1.81            | 0.00         | 91.00        | 3.72             | 1.81            | 0.00         |
| 39.00        | 3.72             | 1.81            | 0.00         | 92.00        | 3.72             | 1.81            | 0.00         |
| 40.00        | 3.72             | 1.81            | 0.00         | 93.00        | 3.72             | 1.81            | 0.00         |
| 41.00        | 3.72             | 1.81            | 0.00         | 94.00        | 3.72             | 1.81            | 0.00         |
| 42.00        | 3.72             | 1.81            | 0.00         | 95.00        | 3.72             | 1.81            | 0.00         |
| 43.00        | 3.72             | 1.81            | 0.00         | 96.00        | 3.72             | 1.81            | 0.00         |
| 44.00        | 3.72             | 1.81            | 0.00         | 97.00        | 3.72             | 1.81            | 0.00         |
| 45.00        | 3.72             | 1.81            | 0.00         | 98.00        | 3.72             | 1.81            | 0.00         |
| 46.00        | 3.72             | 1.81            | 0.00         | 99.00        | 3.72             | 1.81            | 0.00         |
| 47.00        | 3.72             | 1.81            | 0.00         | 100.00       | 3.72             | 1.81            | 0.00         |
| 48.00        | 3.72             | 1.81            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 1.81            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 1.81            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 1.81            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 1.81            | 0.00         |              |                  |                 |              |

**Summary for Reach 1R: Existing Swale**

Inflow Area = 4.252 ac, 7.24% Impervious, Inflow Depth = 0.35" for 10-yr event  
 Inflow = 2.06 cfs @ 12.04 hrs, Volume= 0.124 af  
 Outflow = 2.02 cfs @ 12.06 hrs, Volume= 0.124 af, Atten= 2%, Lag= 1.1 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 2.52 fps, Min. Travel Time= 1.6 min  
 Avg. Velocity = 0.52 fps, Avg. Travel Time= 7.7 min

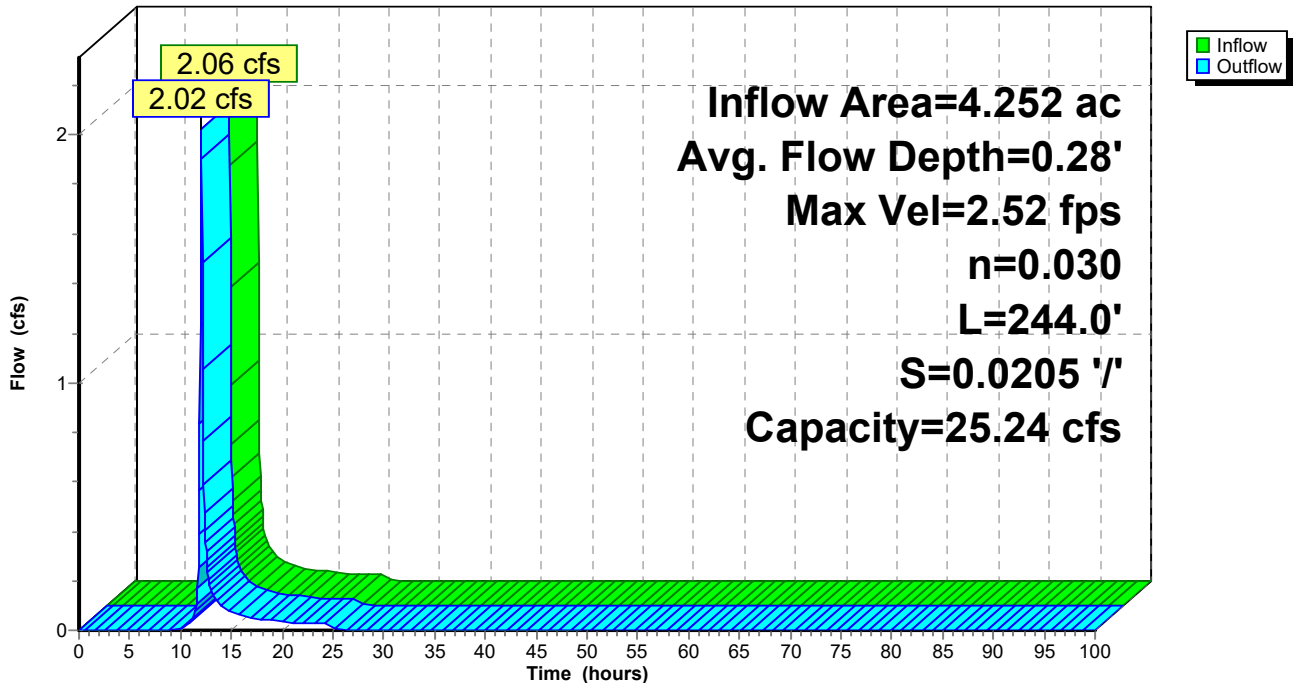
Peak Storage= 196 cf @ 12.06 hrs  
 Average Depth at Peak Storage= 0.28' , Surface Width= 3.69'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 '/  
 Inlet Invert= 316.00', Outlet Invert= 311.00'



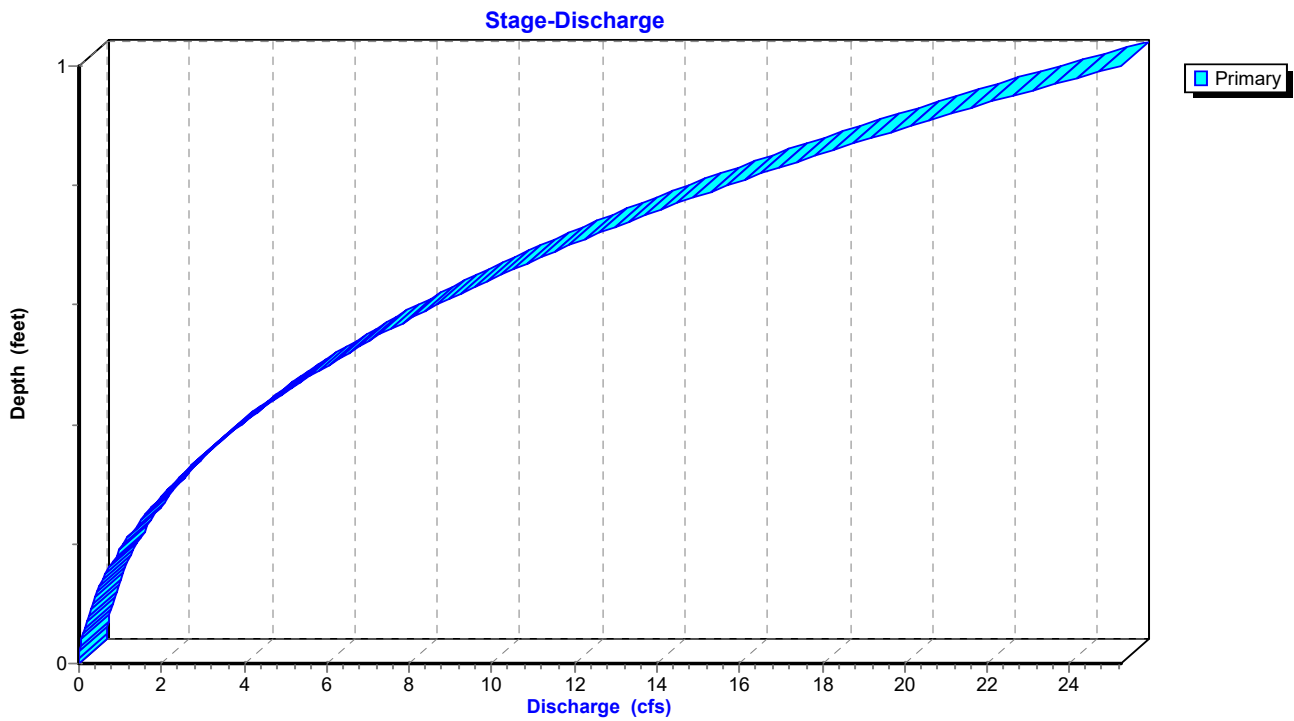
**Reach 1R: Existing Swale**

Hydrograph

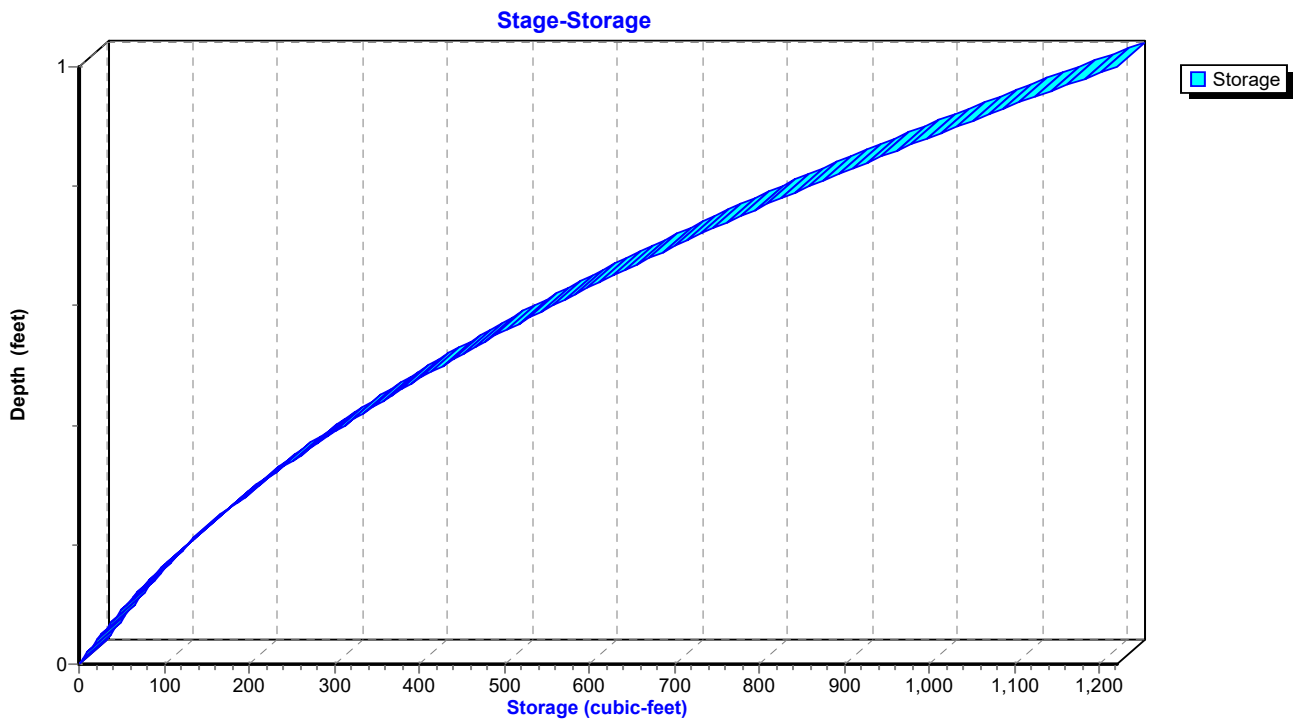




### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 316.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 316.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 316.00              | 0.00             |
| 7.50            | 0.00            | 0                       | 316.00              | 0.00             |
| 10.00           | <b>0.01</b>     | <b>5</b>                | <b>316.01</b>       | <b>0.01</b>      |
| 12.50           | <b>0.29</b>     | <b>55</b>               | <b>316.10</b>       | <b>0.31</b>      |
| 15.00           | 0.07            | 22                      | 316.04              | 0.07             |
| 17.50           | 0.05            | 17                      | 316.03              | 0.05             |
| 20.00           | 0.03            | 13                      | 316.03              | 0.03             |
| 22.50           | 0.03            | 12                      | 316.02              | 0.03             |
| 25.00           | 0.01            | 6                       | 316.01              | 0.01             |
| 27.50           | 0.00            | 1                       | 316.00              | 0.00             |
| 30.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 316.00              | 0.00             |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.413 ac, 8.82% Impervious, Inflow Depth = 0.50" for 10-yr event  
 Inflow = 1.88 cfs @ 12.05 hrs, Volume= 0.143 af  
 Outflow = 0.02 cfs @ 24.16 hrs, Volume= 0.003 af, Atten= 99%, Lag= 726.8 min  
 Primary = 0.02 cfs @ 24.16 hrs, Volume= 0.003 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 316.51' @ 24.16 hrs Surf.Area= 0.157 ac Storage= 0.334 af (0.142 af above start)

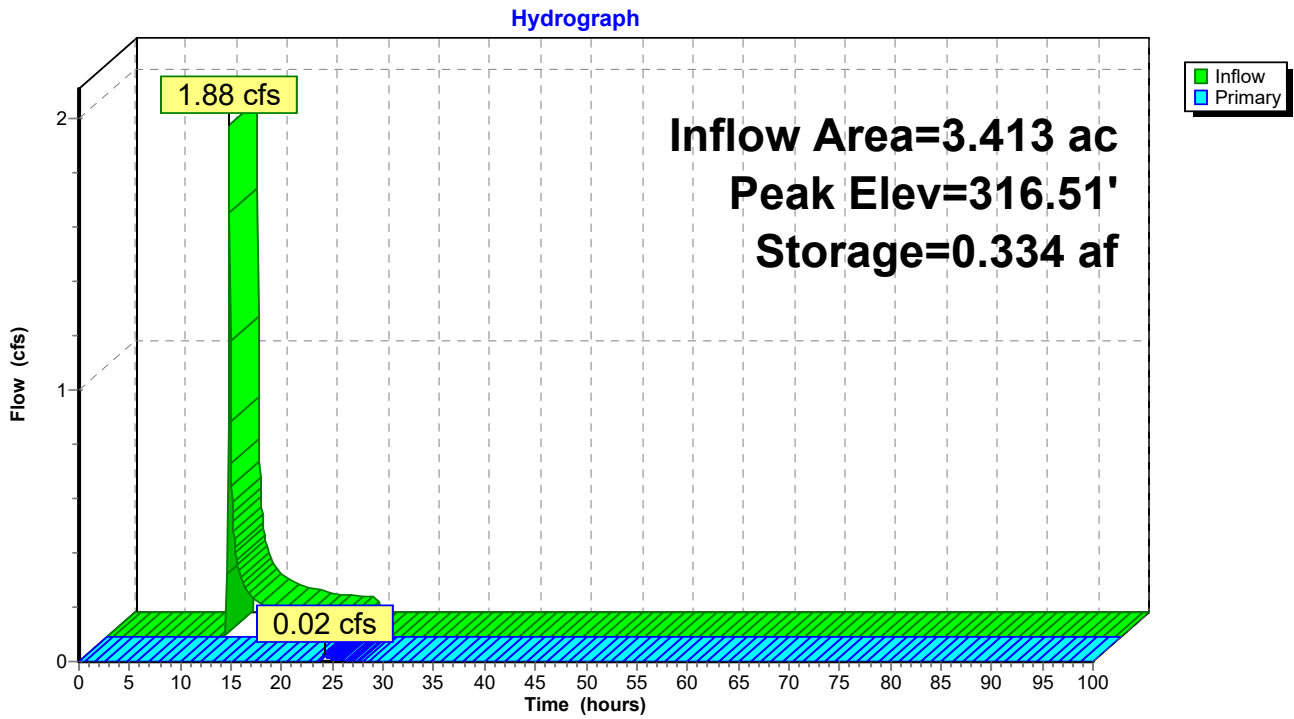
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 617.8 min ( 1,537.0 - 919.1 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 313.83'              | 0.443 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 313.83              | 0.088                | 271.6            | 0.000  | 0.000                    | 0.088               |  |
| 314.00              | 0.107                | 290.3            | 0.017  | 0.017                    | 0.107               |  |
| 315.50              | 0.128                | 309.9            | 0.176  | 0.193                    | 0.131               |  |
| 316.00              | 0.139                | 319.8            | 0.067  | 0.259                    | 0.143               |  |
| 316.50              | 0.154                | 348.8            | 0.073  | 0.333                    | 0.179               |  |
| 317.00              | 0.295                | 446.8            | 0.110  | 0.443                    | 0.321               |  |

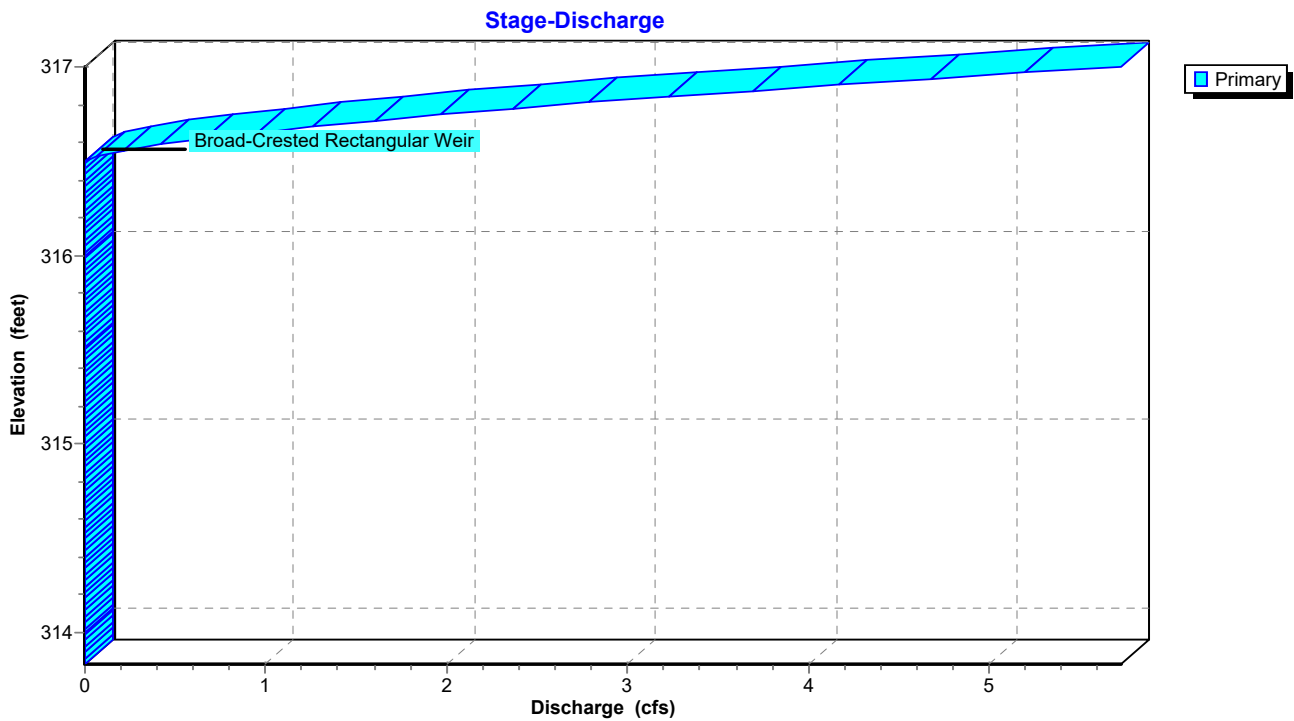
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60             |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.02 cfs @ 24.16 hrs HW=316.51' TW=316.03' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.02 cfs @ 0.30 fps)

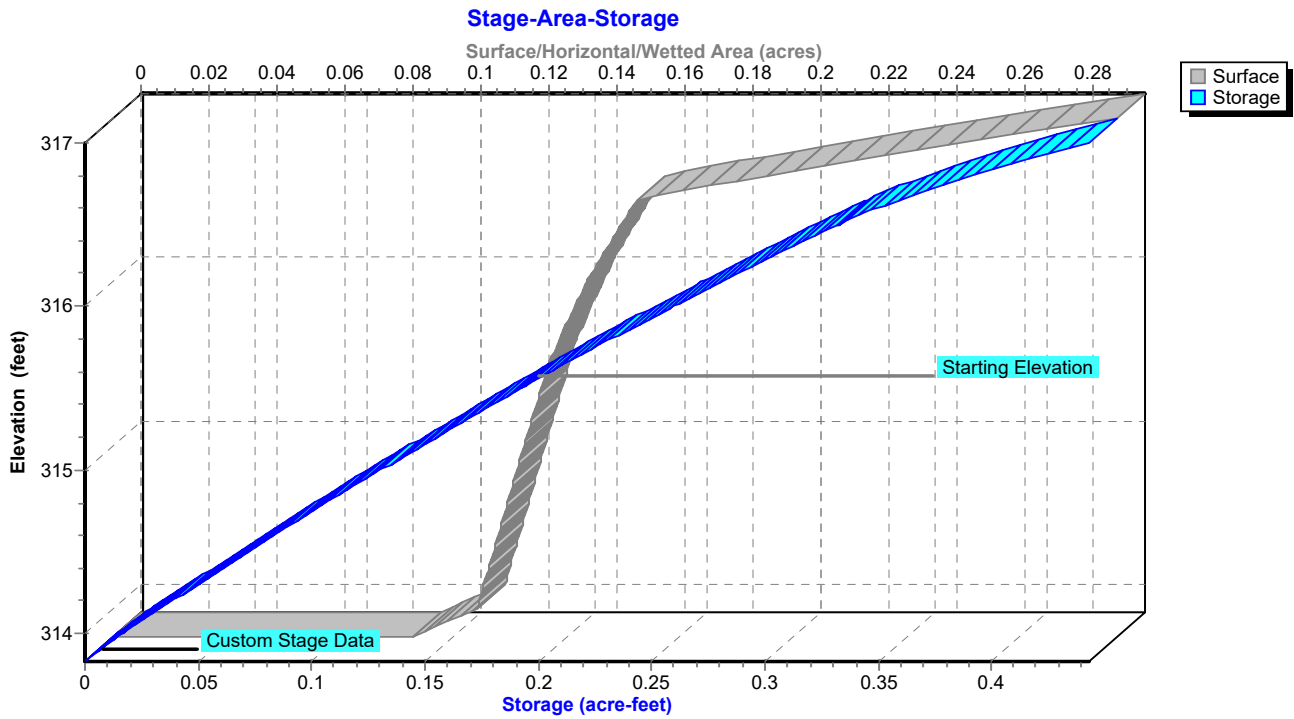
**Pond 1ST: Existing Sediment Trap**



**Pond 1ST: Existing Sediment Trap**



### Pond 1ST: Existing Sediment Trap



**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 2.50            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 5.00            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 7.50            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 10.00           | <b>0.00</b>     | 0.193                  | 315.50              | 0.00             |
| 12.50           | <b>0.39</b>     | 0.237                  | 315.84              | 0.00             |
| 15.00           | 0.13            | 0.277                  | 316.12              | 0.00             |
| 17.50           | 0.09            | 0.298                  | 316.27              | 0.00             |
| 20.00           | 0.06            | 0.314                  | 316.38              | 0.00             |
| 22.50           | 0.06            | <b>0.327</b>           | <b>316.47</b>       | <b>0.00</b>      |
| 25.00           | 0.00            | <b>0.334</b>           | <b>316.51</b>       | <b>0.01</b>      |
| 27.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 30.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 32.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 35.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 37.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 40.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 42.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 45.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 47.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 50.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 52.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 55.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 57.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 60.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 62.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 65.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 67.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 70.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 72.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 75.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 77.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 80.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 82.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 85.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 87.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 90.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 92.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 95.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 97.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 100.00          | 0.00            | 0.333                  | 316.50              | 0.00             |



**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 0.66" for 10-yr event  
 Inflow = 4.96 cfs @ 12.03 hrs, Volume= 0.291 af  
 Outflow = 0.62 cfs @ 12.54 hrs, Volume= 0.145 af, Atten= 87%, Lag= 30.8 min  
 Primary = 0.62 cfs @ 12.54 hrs, Volume= 0.145 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.25' @ 12.54 hrs Surf.Area= 0.094 ac Storage= 0.165 af (0.153 af above start)

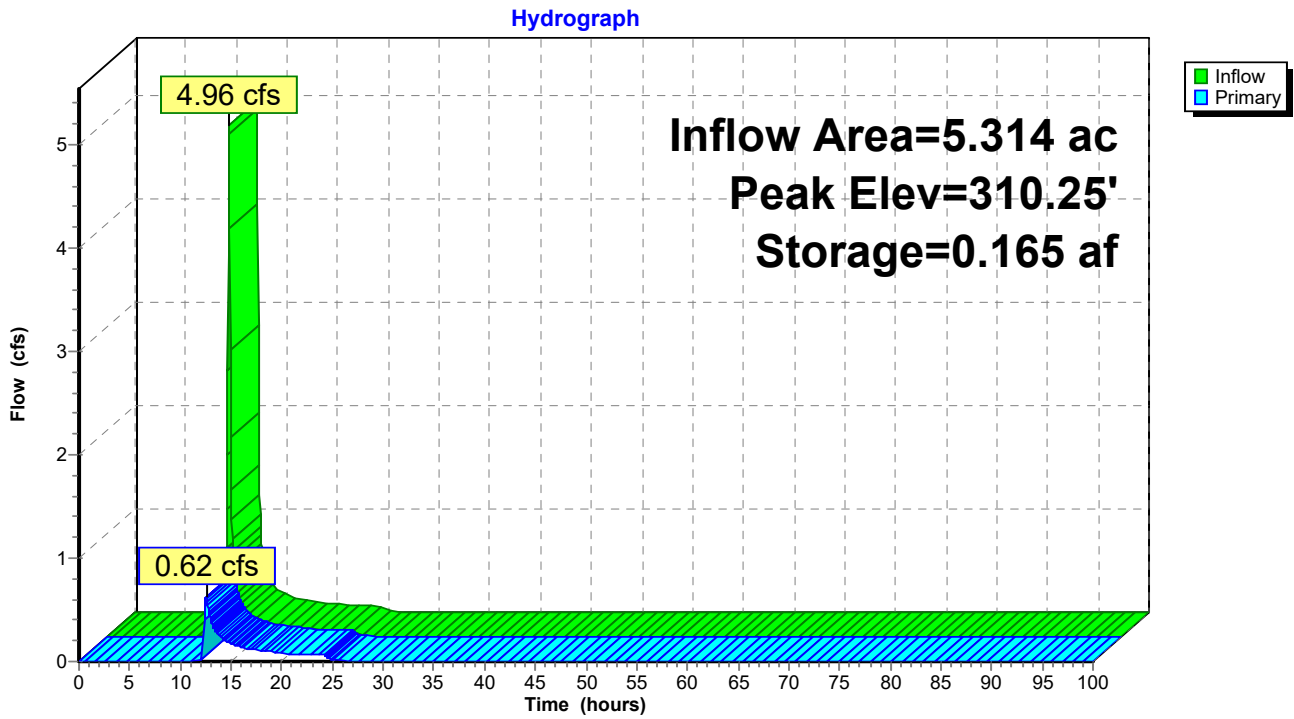
Plug-Flow detention time= 294.2 min calculated for 0.134 af (46% of inflow)  
 Center-of-Mass det. time= 143.8 min ( 987.7 - 843.8 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 307.00'              | 0.248 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 307.00              | 0.019                | 188.4            | 0.000  | 0.000                    | 0.019               |  |
| 307.50              | 0.026                | 206.4            | 0.011  | 0.011                    | 0.032               |  |
| 308.00              | 0.036                | 232.2            | 0.015  | 0.027                    | 0.053               |  |
| 309.00              | 0.057                | 269.3            | 0.046  | 0.073                    | 0.087               |  |
| 310.00              | 0.083                | 316.3            | 0.070  | 0.142                    | 0.138               |  |
| 311.00              | 0.131                | 434.9            | 0.106  | 0.248                    | 0.301               |  |

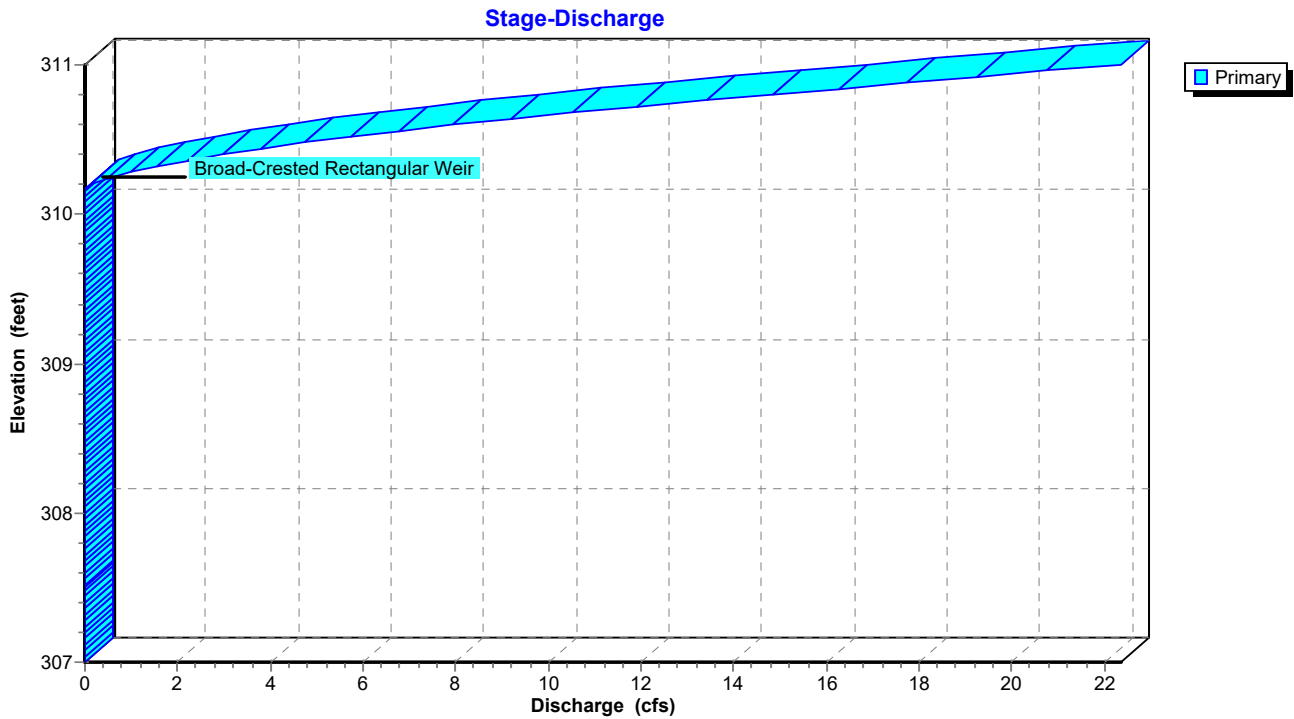
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64    |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74                         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.62 cfs @ 12.54 hrs HW=310.25' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.62 cfs @ 0.69 fps)

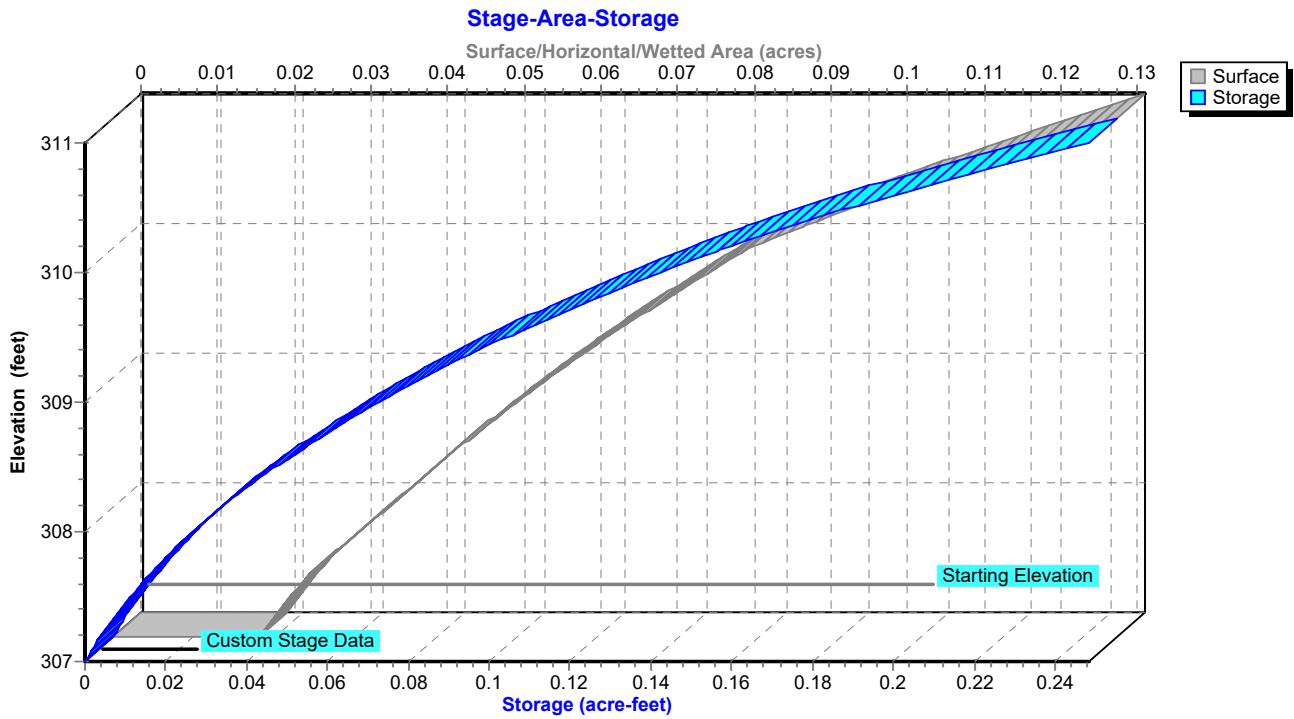
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 2.50            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 5.00            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 7.50            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 10.00           | <b>0.03</b>     | 0.013                  | 307.55              | 0.00             |
| 12.50           | <b>0.67</b>     | <b>0.164</b>           | <b>310.25</b>       | <b>0.61</b>      |
| 15.00           | 0.17            | <b>0.160</b>           | <b>310.21</b>       | <b>0.18</b>      |
| 17.50           | 0.11            | 0.159                  | 310.20              | 0.11             |
| 20.00           | 0.08            | 0.159                  | 310.19              | 0.08             |
| 22.50           | 0.07            | 0.159                  | 310.19              | 0.07             |
| 25.00           | 0.01            | 0.158                  | 310.18              | 0.02             |
| 27.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 30.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 32.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 35.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 37.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 40.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 42.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 45.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 47.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 50.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 52.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 55.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 57.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 60.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 62.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 65.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 67.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 70.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 72.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 75.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 77.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 80.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 82.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 85.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 87.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 90.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 92.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 95.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 97.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 100.00          | 0.00            | 0.157                  | 310.17              | 0.00             |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |



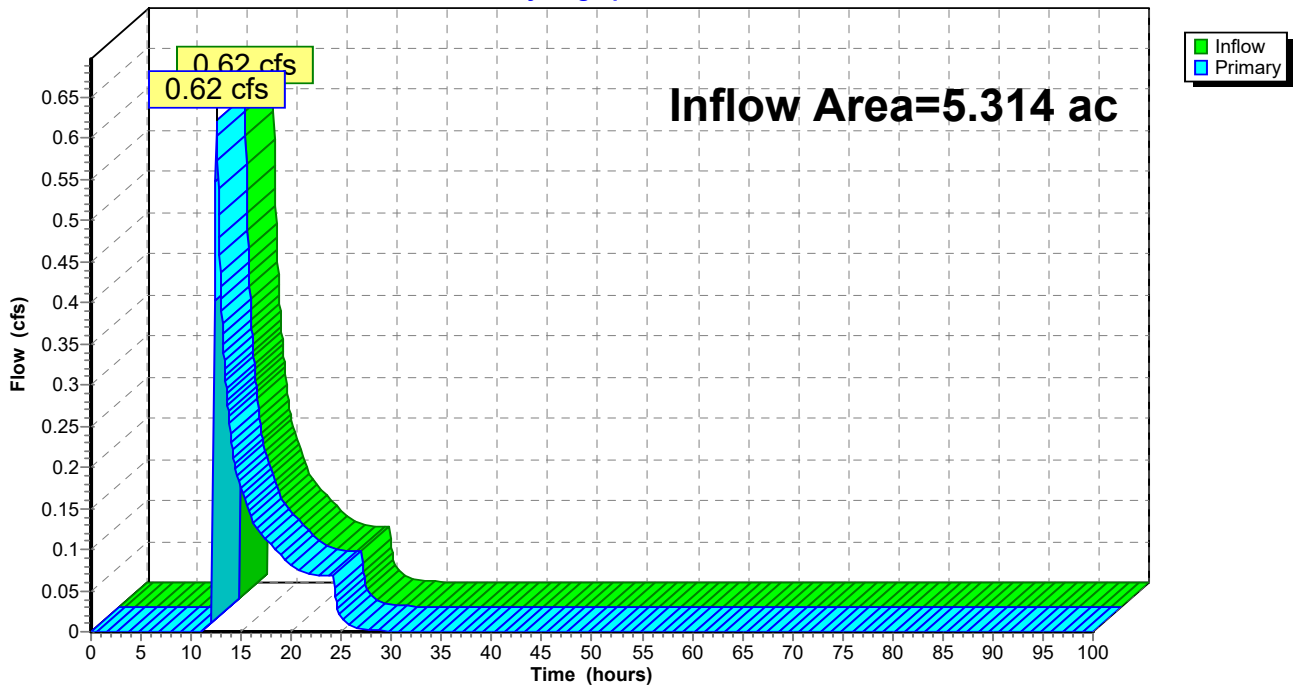
### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 0.33" for 10-yr event  
Inflow = 0.62 cfs @ 12.54 hrs, Volume= 0.145 af  
Primary = 0.62 cfs @ 12.54 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1

Hydrograph



**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.40</b>  | 0.00             | <b>0.40</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.23         | 0.00             | 0.23          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.18         | 0.00             | 0.18          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.14         | 0.00             | 0.14          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.12         | 0.00             | 0.12          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.11         | 0.00             | 0.11          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.09         | 0.00             | 0.09          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.08         | 0.00             | 0.08          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.07         | 0.00             | 0.07          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.07         | 0.00             | 0.07          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.07         | 0.00             | 0.07          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.07         | 0.00             | 0.07          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.02         | 0.00             | 0.02          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.01         | 0.00             | 0.01          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

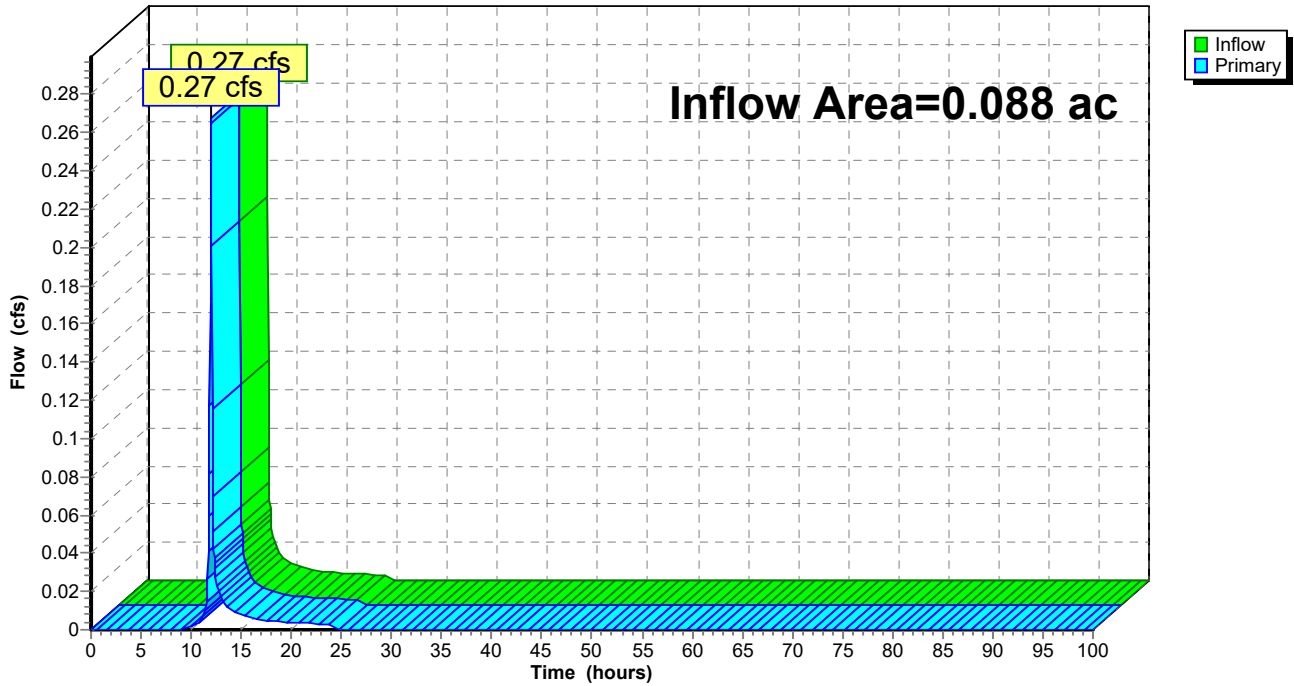
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.088 ac, 0.00% Impervious, Inflow Depth = 1.81" for 10-yr event  
Inflow = 0.27 cfs @ 11.99 hrs, Volume= 0.013 af  
Primary = 0.27 cfs @ 11.99 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.01         | 0.00             | 0.01          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.27</b>  | 0.00             | <b>0.27</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.02         | 0.00             | 0.02          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.01         | 0.00             | 0.01          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.01         | 0.00             | 0.01          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.01         | 0.00             | 0.01          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.01         | 0.00             | 0.01          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Existing Stormwater Conditions Final D Soils FarmType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |   |
|---|---|
| <b>Subcatchment 1S: Subcat 1</b>        | Runoff Area=3.413 ac 8.82% Impervious Runoff Depth=0.88"<br>Flow Length=499' Tc=10.0 min CN=57 Runoff=3.93 cfs 0.250 af                       |
| <b>Subcatchment 2aS: Subcat 2a</b>      | Runoff Area=0.839 ac 0.83% Impervious Runoff Depth=2.43"<br>Flow Length=211' Tc=12.1 min CN=79 Runoff=2.88 cfs 0.170 af                       |
| <b>Subcatchment 2bS: Subcat 2b</b>      | Runoff Area=1.062 ac 10.45% Impervious Runoff Depth=2.60"<br>Flow Length=331' Tc=9.7 min CN=81 Runoff=4.21 cfs 0.230 af                       |
| <b>Subcatchment 3S: Subcat 3</b>        | Runoff Area=0.088 ac 0.00% Impervious Runoff Depth=2.51"<br>Flow Length=225' Tc=7.3 min CN=80 Runoff=0.37 cfs 0.018 af                        |
| <b>Reach 1R: Existing Swale</b>         | Avg. Flow Depth=0.34' Max Vel=2.78 fps Inflow=2.88 cfs 0.280 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=2.84 cfs 0.280 af |
| <b>Pond 1ST: Existing Sediment Trap</b> | Peak Elev=316.55' Storage=0.341 af Inflow=3.93 cfs 0.250 af<br>Outflow=0.20 cfs 0.110 af  |
| <b>Pond 2ST: Existing Sediment Trap</b> | Peak Elev=310.41' Storage=0.180 af Inflow=6.87 cfs 0.510 af<br>Outflow=3.25 cfs 0.364 af  |
| <b>Link AP1: Analysis Point 1</b>       | Inflow=3.25 cfs 0.364 af<br>Primary=3.25 cfs 0.364 af   |
| <b>Link AP2: Analysis Point 2</b>       | Inflow=0.37 cfs 0.018 af<br>Primary=0.37 cfs 0.018 af   |

**Total Runoff Area = 5.402 ac Runoff Volume = 0.668 af Average Runoff Depth = 1.48"**  
**92.24% Pervious = 4.983 ac 7.76% Impervious = 0.419 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 3.93 cfs @ 12.04 hrs, Volume= 0.250 af, Depth= 0.88"  
 Routed to Pond 1ST : Existing Sediment Trap

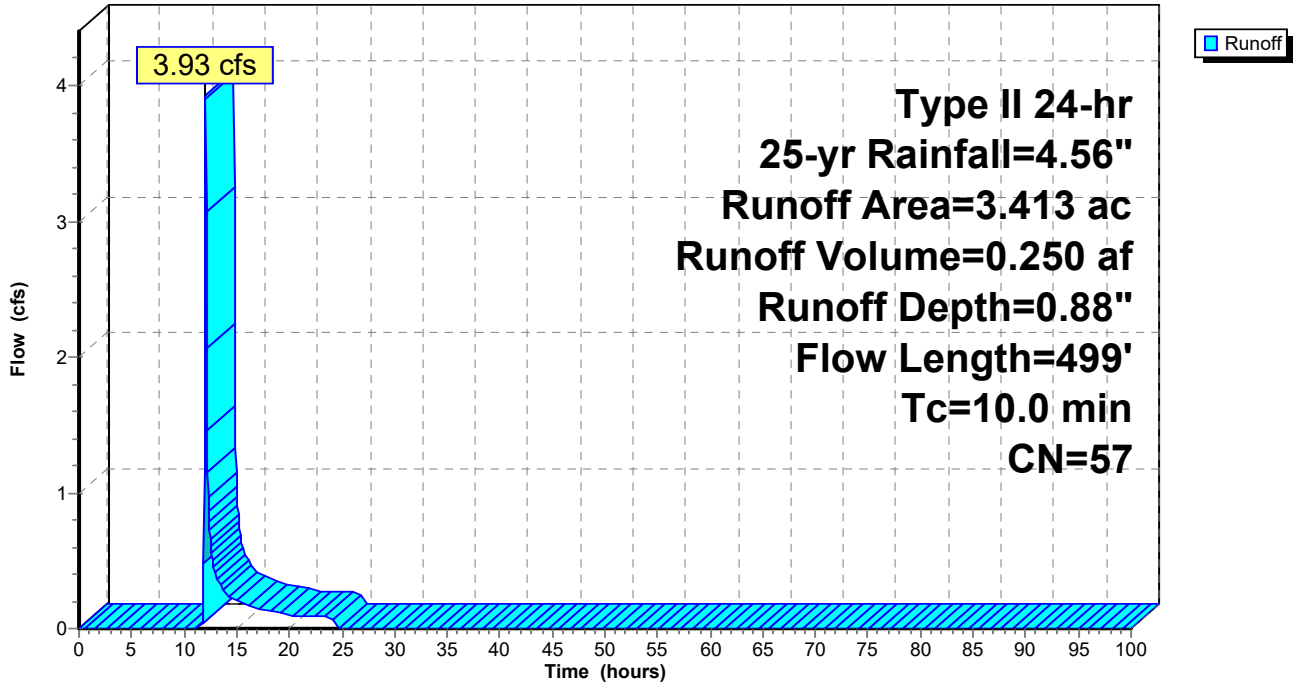
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| * 0.022   | 98 | Roofs, HSG A                        |
| * 0.005   | 98 | Paved parking, HSG A                |
| 0.136     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.252     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 0.876     | 78 | Meadow, non-grazed, HSG D           |
| * 0.438   | 89 | Gravel surface, HSG D               |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.413     | 57 | Weighted Average                    |
| 3.112     |    | 91.18% Pervious Area                |
| 0.301     |    | 8.82% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.2      | 69            | 0.0600        | 4.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.0     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



Hydrograph for Subcatchment 1S: Subcat 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 0.88            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 0.88            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 0.88            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 0.88            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 0.88            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 0.88            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 0.88            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 0.88            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 0.88            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 0.88            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 0.88            | 0.00         |
| 11.00        | 1.07             | 0.00            | 0.00         | 64.00        | 4.56             | 0.88            | 0.00         |
| 12.00        | 3.02             | 0.25            | <b>3.59</b>  | 65.00        | 4.56             | 0.88            | 0.00         |
| 13.00        | 3.52             | 0.42            | <b>0.40</b>  | 66.00        | 4.56             | 0.88            | 0.00         |
| 14.00        | 3.74             | 0.51            | 0.25         | 67.00        | 4.56             | 0.88            | 0.00         |
| 15.00        | 3.89             | 0.57            | 0.20         | 68.00        | 4.56             | 0.88            | 0.00         |
| 16.00        | 4.01             | 0.62            | 0.16         | 69.00        | 4.56             | 0.88            | 0.00         |
| 17.00        | 4.11             | 0.67            | 0.15         | 70.00        | 4.56             | 0.88            | 0.00         |
| 18.00        | 4.20             | 0.71            | 0.13         | 71.00        | 4.56             | 0.88            | 0.00         |
| 19.00        | 4.28             | 0.74            | 0.12         | 72.00        | 4.56             | 0.88            | 0.00         |
| 20.00        | 4.34             | 0.77            | 0.10         | 73.00        | 4.56             | 0.88            | 0.00         |
| 21.00        | 4.40             | 0.80            | 0.09         | 74.00        | 4.56             | 0.88            | 0.00         |
| 22.00        | 4.46             | 0.83            | 0.09         | 75.00        | 4.56             | 0.88            | 0.00         |
| 23.00        | 4.51             | 0.85            | 0.09         | 76.00        | 4.56             | 0.88            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>0.88</b>     | 0.09         | 77.00        | 4.56             | 0.88            | 0.00         |
| 25.00        | 4.56             | 0.88            | 0.00         | 78.00        | 4.56             | 0.88            | 0.00         |
| 26.00        | 4.56             | 0.88            | 0.00         | 79.00        | 4.56             | 0.88            | 0.00         |
| 27.00        | 4.56             | 0.88            | 0.00         | 80.00        | 4.56             | 0.88            | 0.00         |
| 28.00        | 4.56             | 0.88            | 0.00         | 81.00        | 4.56             | 0.88            | 0.00         |
| 29.00        | 4.56             | 0.88            | 0.00         | 82.00        | 4.56             | 0.88            | 0.00         |
| 30.00        | 4.56             | 0.88            | 0.00         | 83.00        | 4.56             | 0.88            | 0.00         |
| 31.00        | 4.56             | 0.88            | 0.00         | 84.00        | 4.56             | 0.88            | 0.00         |
| 32.00        | 4.56             | 0.88            | 0.00         | 85.00        | 4.56             | 0.88            | 0.00         |
| 33.00        | 4.56             | 0.88            | 0.00         | 86.00        | 4.56             | 0.88            | 0.00         |
| 34.00        | 4.56             | 0.88            | 0.00         | 87.00        | 4.56             | 0.88            | 0.00         |
| 35.00        | 4.56             | 0.88            | 0.00         | 88.00        | 4.56             | 0.88            | 0.00         |
| 36.00        | 4.56             | 0.88            | 0.00         | 89.00        | 4.56             | 0.88            | 0.00         |
| 37.00        | 4.56             | 0.88            | 0.00         | 90.00        | 4.56             | 0.88            | 0.00         |
| 38.00        | 4.56             | 0.88            | 0.00         | 91.00        | 4.56             | 0.88            | 0.00         |
| 39.00        | 4.56             | 0.88            | 0.00         | 92.00        | 4.56             | 0.88            | 0.00         |
| 40.00        | 4.56             | 0.88            | 0.00         | 93.00        | 4.56             | 0.88            | 0.00         |
| 41.00        | 4.56             | 0.88            | 0.00         | 94.00        | 4.56             | 0.88            | 0.00         |
| 42.00        | 4.56             | 0.88            | 0.00         | 95.00        | 4.56             | 0.88            | 0.00         |
| 43.00        | 4.56             | 0.88            | 0.00         | 96.00        | 4.56             | 0.88            | 0.00         |
| 44.00        | 4.56             | 0.88            | 0.00         | 97.00        | 4.56             | 0.88            | 0.00         |
| 45.00        | 4.56             | 0.88            | 0.00         | 98.00        | 4.56             | 0.88            | 0.00         |
| 46.00        | 4.56             | 0.88            | 0.00         | 99.00        | 4.56             | 0.88            | 0.00         |
| 47.00        | 4.56             | 0.88            | 0.00         | 100.00       | 4.56             | 0.88            | 0.00         |
| 48.00        | 4.56             | 0.88            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 0.88            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 0.88            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 0.88            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 0.88            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 2.88 cfs @ 12.04 hrs, Volume= 0.170 af, Depth= 2.43"  
 Routed to Reach 1R : Existing Swale

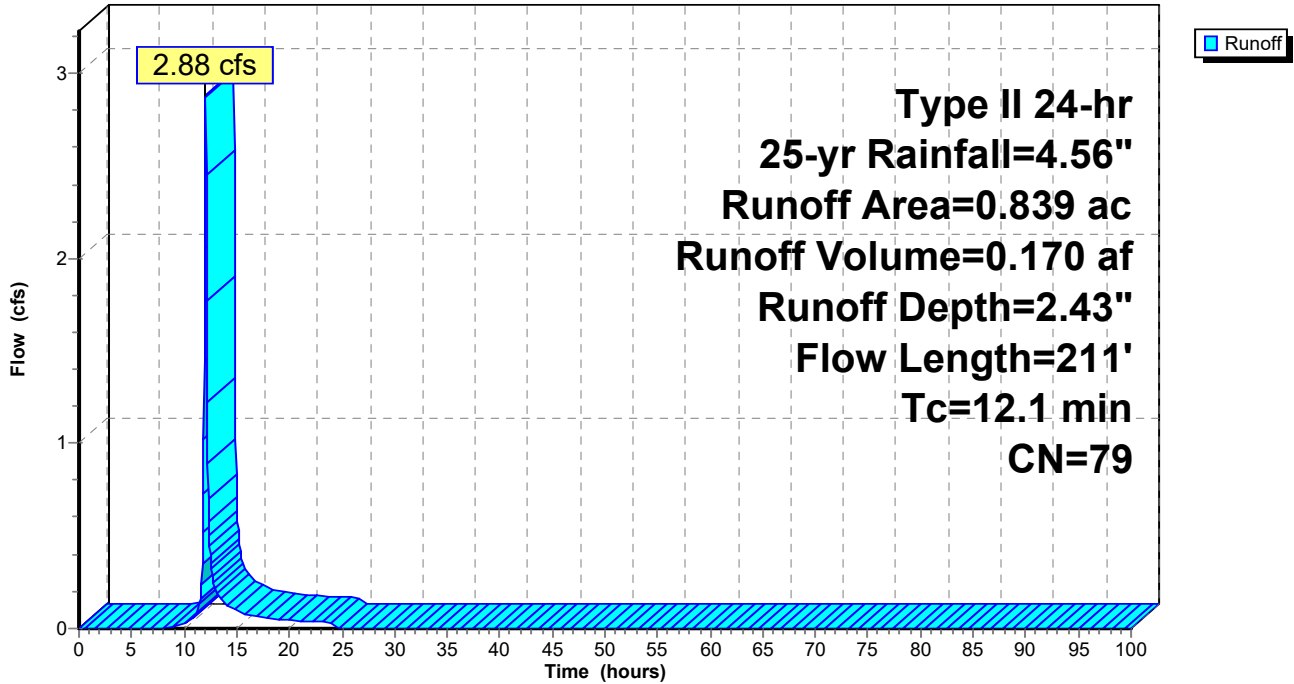
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.727     | 78 | Meadow, non-grazed, HSG D |
| 0.004     | 71 | Meadow, non-grazed, HSG C |
| * 0.101   | 89 | Gravel surface, HSG D     |
| * 0.007   | 98 | Water Surface, HSG D      |
| 0.839     | 79 | Weighted Average          |
| 0.832     |    | 99.17% Pervious Area      |
| 0.007     |    | 0.83% Impervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.0      | 24            | 0.0060        | 0.08              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.7      | 35            | 0.0110        | 0.79              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 5.3      | 41            | 0.0150        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.6      | 35            | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.1      | 27            | 0.0240        | 3.14              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 10            | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 33            | 0.0210        | 2.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 6             | 0.0340        | 1.29              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 12.1     | 211           | Total         |                   |                |   |

### Subcatchment 2aS: Subcat 2a

Hydrograph



**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 2.43               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 2.43               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 2.43               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 2.43               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 2.43               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 2.43               | 0.00            |
| 6.00            | 0.36                | 0.00               | 0.00            | 59.00           | 4.56                | 2.43               | 0.00            |
| 7.00            | 0.45                | 0.00               | 0.00            | 60.00           | 4.56                | 2.43               | 0.00            |
| 8.00            | 0.55                | 0.00               | 0.00            | 61.00           | 4.56                | 2.43               | 0.00            |
| 9.00            | 0.67                | 0.01               | 0.01            | 62.00           | 4.56                | 2.43               | 0.00            |
| 10.00           | 0.83                | 0.03               | 0.02            | 63.00           | 4.56                | 2.43               | 0.00            |
| 11.00           | 1.07                | 0.09               | 0.07            | 64.00           | 4.56                | 2.43               | 0.00            |
| 12.00           | 3.02                | 1.21               | <b>2.68</b>     | 65.00           | 4.56                | 2.43               | 0.00            |
| 13.00           | 3.52                | 1.58               | <b>0.21</b>     | 66.00           | 4.56                | 2.43               | 0.00            |
| 14.00           | 3.74                | 1.75               | 0.12            | 67.00           | 4.56                | 2.43               | 0.00            |
| 15.00           | 3.89                | 1.88               | 0.10            | 68.00           | 4.56                | 2.43               | 0.00            |
| 16.00           | 4.01                | 1.97               | 0.08            | 69.00           | 4.56                | 2.43               | 0.00            |
| 17.00           | 4.11                | 2.05               | 0.07            | 70.00           | 4.56                | 2.43               | 0.00            |
| 18.00           | 4.20                | 2.13               | 0.06            | 71.00           | 4.56                | 2.43               | 0.00            |
| 19.00           | 4.28                | 2.19               | 0.05            | 72.00           | 4.56                | 2.43               | 0.00            |
| 20.00           | 4.34                | 2.24               | 0.04            | 73.00           | 4.56                | 2.43               | 0.00            |
| 21.00           | 4.40                | 2.29               | 0.04            | 74.00           | 4.56                | 2.43               | 0.00            |
| 22.00           | 4.46                | 2.34               | 0.04            | 75.00           | 4.56                | 2.43               | 0.00            |
| 23.00           | 4.51                | 2.38               | 0.04            | 76.00           | 4.56                | 2.43               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>2.43</b>        | 0.04            | 77.00           | 4.56                | 2.43               | 0.00            |
| 25.00           | 4.56                | 2.43               | 0.00            | 78.00           | 4.56                | 2.43               | 0.00            |
| 26.00           | 4.56                | 2.43               | 0.00            | 79.00           | 4.56                | 2.43               | 0.00            |
| 27.00           | 4.56                | 2.43               | 0.00            | 80.00           | 4.56                | 2.43               | 0.00            |
| 28.00           | 4.56                | 2.43               | 0.00            | 81.00           | 4.56                | 2.43               | 0.00            |
| 29.00           | 4.56                | 2.43               | 0.00            | 82.00           | 4.56                | 2.43               | 0.00            |
| 30.00           | 4.56                | 2.43               | 0.00            | 83.00           | 4.56                | 2.43               | 0.00            |
| 31.00           | 4.56                | 2.43               | 0.00            | 84.00           | 4.56                | 2.43               | 0.00            |
| 32.00           | 4.56                | 2.43               | 0.00            | 85.00           | 4.56                | 2.43               | 0.00            |
| 33.00           | 4.56                | 2.43               | 0.00            | 86.00           | 4.56                | 2.43               | 0.00            |
| 34.00           | 4.56                | 2.43               | 0.00            | 87.00           | 4.56                | 2.43               | 0.00            |
| 35.00           | 4.56                | 2.43               | 0.00            | 88.00           | 4.56                | 2.43               | 0.00            |
| 36.00           | 4.56                | 2.43               | 0.00            | 89.00           | 4.56                | 2.43               | 0.00            |
| 37.00           | 4.56                | 2.43               | 0.00            | 90.00           | 4.56                | 2.43               | 0.00            |
| 38.00           | 4.56                | 2.43               | 0.00            | 91.00           | 4.56                | 2.43               | 0.00            |
| 39.00           | 4.56                | 2.43               | 0.00            | 92.00           | 4.56                | 2.43               | 0.00            |
| 40.00           | 4.56                | 2.43               | 0.00            | 93.00           | 4.56                | 2.43               | 0.00            |
| 41.00           | 4.56                | 2.43               | 0.00            | 94.00           | 4.56                | 2.43               | 0.00            |
| 42.00           | 4.56                | 2.43               | 0.00            | 95.00           | 4.56                | 2.43               | 0.00            |
| 43.00           | 4.56                | 2.43               | 0.00            | 96.00           | 4.56                | 2.43               | 0.00            |
| 44.00           | 4.56                | 2.43               | 0.00            | 97.00           | 4.56                | 2.43               | 0.00            |
| 45.00           | 4.56                | 2.43               | 0.00            | 98.00           | 4.56                | 2.43               | 0.00            |
| 46.00           | 4.56                | 2.43               | 0.00            | 99.00           | 4.56                | 2.43               | 0.00            |
| 47.00           | 4.56                | 2.43               | 0.00            | 100.00          | 4.56                | 2.43               | 0.00            |
| 48.00           | 4.56                | 2.43               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 2.43               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 2.43               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 2.43               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 2.43               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2bS: Subcat 2b**

Runoff = 4.21 cfs @ 12.01 hrs, Volume= 0.230 af, Depth= 2.60"  
 Routed to Pond 2ST : Existing Sediment Trap

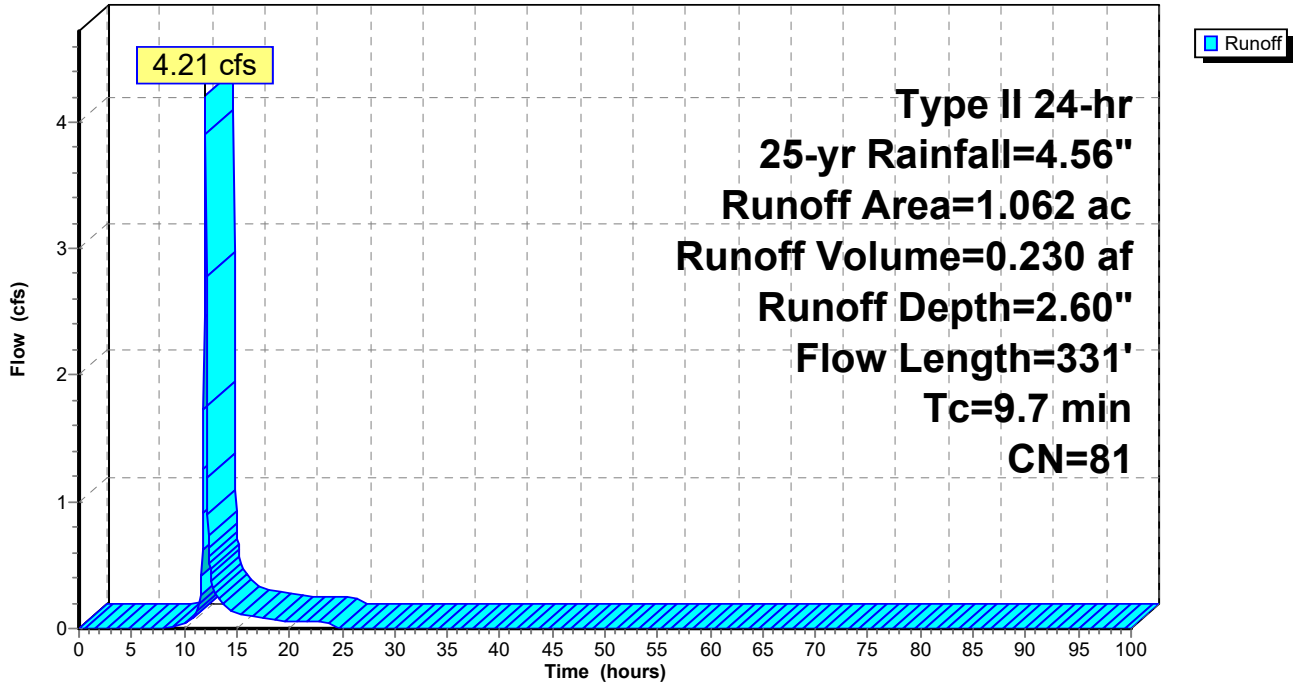
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.590     | 78 | Meadow, non-grazed, HSG D |
| 0.180     | 71 | Meadow, non-grazed, HSG C |
| * 0.148   | 89 | Gravel surface, HSG D     |
| * 0.006   | 98 | Water Surface, HSG D      |
| 0.105     | 98 | Water Surface, HSG C      |
| * 0.033   | 89 | Gravel surface, HSG C     |
| 1.062     | 81 | Weighted Average          |
| 0.951     |    | 89.55% Pervious Area      |
| 0.111     |    | 10.45% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.7      | 38            | 0.0140        | 0.88              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 6.0      | 62            | 0.0260        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.7      | 189           | 0.0280        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 28            | 0.0180        | 2.72              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 9.7      | 331           | Total         |                   |                |   |

Subcatchment 2bS: Subcat 2b

Hydrograph



**Hydrograph for Subcatchment 2bS: Subcat 2b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.60            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.60            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.60            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.60            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.60            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.60            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.60            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 2.60            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.01         | 61.00        | 4.56             | 2.60            | 0.00         |
| 9.00         | 0.67             | 0.02            | 0.02         | 62.00        | 4.56             | 2.60            | 0.00         |
| 10.00        | 0.83             | 0.05            | 0.04         | 63.00        | 4.56             | 2.60            | 0.00         |
| 11.00        | 1.07             | 0.12            | 0.11         | 64.00        | 4.56             | 2.60            | 0.00         |
| 12.00        | 3.02             | 1.33            | <b>4.19</b>  | 65.00        | 4.56             | 2.60            | 0.00         |
| 13.00        | 3.52             | 1.73            | 0.27         | 66.00        | 4.56             | 2.60            | 0.00         |
| 14.00        | 3.74             | 1.90            | 0.16         | 67.00        | 4.56             | 2.60            | 0.00         |
| 15.00        | 3.89             | 2.03            | 0.13         | 68.00        | 4.56             | 2.60            | 0.00         |
| 16.00        | 4.01             | 2.13            | 0.10         | 69.00        | 4.56             | 2.60            | 0.00         |
| 17.00        | 4.11             | 2.22            | 0.09         | 70.00        | 4.56             | 2.60            | 0.00         |
| 18.00        | 4.20             | 2.29            | 0.08         | 71.00        | 4.56             | 2.60            | 0.00         |
| 19.00        | 4.28             | 2.36            | 0.07         | 72.00        | 4.56             | 2.60            | 0.00         |
| 20.00        | 4.34             | 2.41            | 0.06         | 73.00        | 4.56             | 2.60            | 0.00         |
| 21.00        | 4.40             | 2.46            | 0.05         | 74.00        | 4.56             | 2.60            | 0.00         |
| 22.00        | 4.46             | 2.51            | 0.05         | 75.00        | 4.56             | 2.60            | 0.00         |
| 23.00        | 4.51             | 2.56            | 0.05         | 76.00        | 4.56             | 2.60            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.60</b>     | 0.05         | 77.00        | 4.56             | 2.60            | 0.00         |
| 25.00        | 4.56             | 2.60            | 0.00         | 78.00        | 4.56             | 2.60            | 0.00         |
| 26.00        | 4.56             | 2.60            | 0.00         | 79.00        | 4.56             | 2.60            | 0.00         |
| 27.00        | 4.56             | 2.60            | 0.00         | 80.00        | 4.56             | 2.60            | 0.00         |
| 28.00        | 4.56             | 2.60            | 0.00         | 81.00        | 4.56             | 2.60            | 0.00         |
| 29.00        | 4.56             | 2.60            | 0.00         | 82.00        | 4.56             | 2.60            | 0.00         |
| 30.00        | 4.56             | 2.60            | 0.00         | 83.00        | 4.56             | 2.60            | 0.00         |
| 31.00        | 4.56             | 2.60            | 0.00         | 84.00        | 4.56             | 2.60            | 0.00         |
| 32.00        | 4.56             | 2.60            | 0.00         | 85.00        | 4.56             | 2.60            | 0.00         |
| 33.00        | 4.56             | 2.60            | 0.00         | 86.00        | 4.56             | 2.60            | 0.00         |
| 34.00        | 4.56             | 2.60            | 0.00         | 87.00        | 4.56             | 2.60            | 0.00         |
| 35.00        | 4.56             | 2.60            | 0.00         | 88.00        | 4.56             | 2.60            | 0.00         |
| 36.00        | 4.56             | 2.60            | 0.00         | 89.00        | 4.56             | 2.60            | 0.00         |
| 37.00        | 4.56             | 2.60            | 0.00         | 90.00        | 4.56             | 2.60            | 0.00         |
| 38.00        | 4.56             | 2.60            | 0.00         | 91.00        | 4.56             | 2.60            | 0.00         |
| 39.00        | 4.56             | 2.60            | 0.00         | 92.00        | 4.56             | 2.60            | 0.00         |
| 40.00        | 4.56             | 2.60            | 0.00         | 93.00        | 4.56             | 2.60            | 0.00         |
| 41.00        | 4.56             | 2.60            | 0.00         | 94.00        | 4.56             | 2.60            | 0.00         |
| 42.00        | 4.56             | 2.60            | 0.00         | 95.00        | 4.56             | 2.60            | 0.00         |
| 43.00        | 4.56             | 2.60            | 0.00         | 96.00        | 4.56             | 2.60            | 0.00         |
| 44.00        | 4.56             | 2.60            | 0.00         | 97.00        | 4.56             | 2.60            | 0.00         |
| 45.00        | 4.56             | 2.60            | 0.00         | 98.00        | 4.56             | 2.60            | 0.00         |
| 46.00        | 4.56             | 2.60            | 0.00         | 99.00        | 4.56             | 2.60            | 0.00         |
| 47.00        | 4.56             | 2.60            | 0.00         | 100.00       | 4.56             | 2.60            | 0.00         |
| 48.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.37 cfs @ 11.99 hrs, Volume= 0.018 af, Depth= 2.51"  
 Routed to Link AP2 : Analysis Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

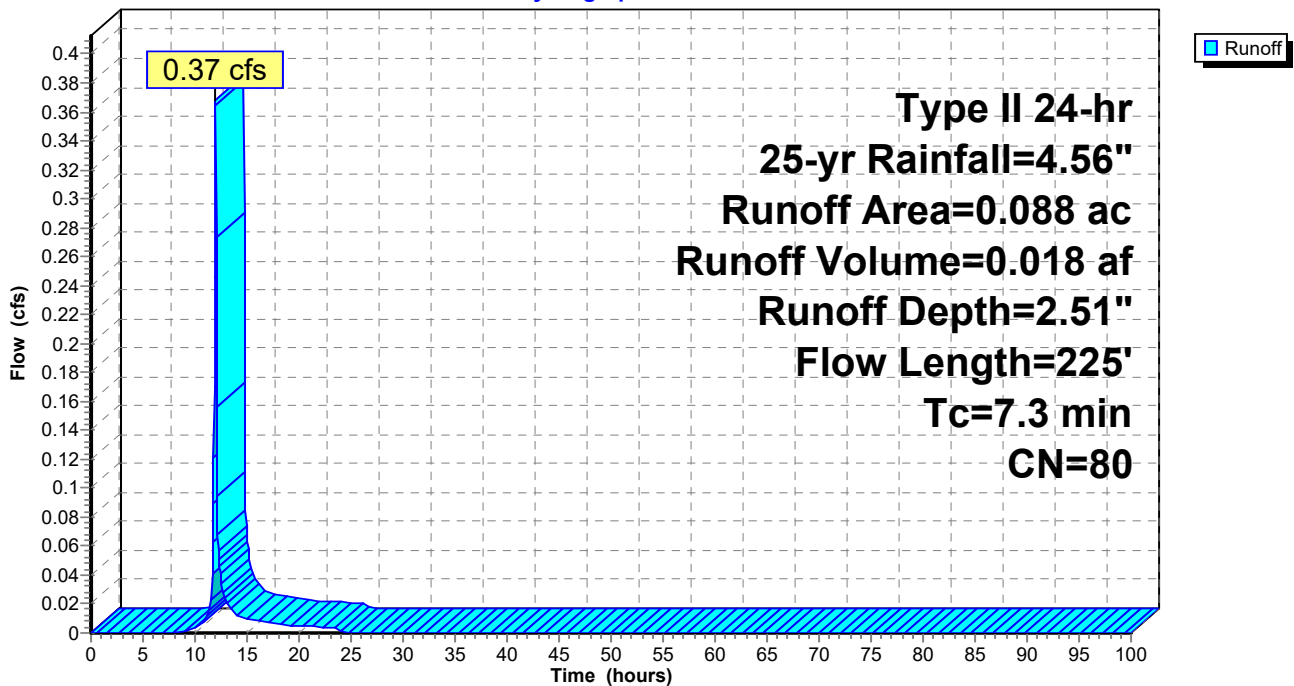
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| * 0.018   | 89 | Gravel surface, HSG A     |
| 0.070     | 78 | Meadow, non-grazed, HSG D |
| 0.088     | 80 | Weighted Average          |
| 0.088     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 3.1      | 12            | 0.0050        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0160        | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.6      | 118           | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.7      | 39            | 0.0030        | 0.38              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 225           | Total         |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**Hydrograph for Subcatchment 3S: Subcat 3**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.51            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.51            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.51            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.51            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.51            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.51            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.51            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 2.51            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 2.51            | 0.00         |
| 9.00         | 0.67             | 0.01            | 0.00         | 62.00        | 4.56             | 2.51            | 0.00         |
| 10.00        | 0.83             | 0.04            | 0.00         | 63.00        | 4.56             | 2.51            | 0.00         |
| 11.00        | 1.07             | 0.11            | 0.01         | 64.00        | 4.56             | 2.51            | 0.00         |
| 12.00        | 3.02             | 1.27            | <b>0.36</b>  | 65.00        | 4.56             | 2.51            | 0.00         |
| 13.00        | 3.52             | 1.65            | 0.02         | 66.00        | 4.56             | 2.51            | 0.00         |
| 14.00        | 3.74             | 1.83            | 0.01         | 67.00        | 4.56             | 2.51            | 0.00         |
| 15.00        | 3.89             | 1.95            | 0.01         | 68.00        | 4.56             | 2.51            | 0.00         |
| 16.00        | 4.01             | 2.05            | 0.01         | 69.00        | 4.56             | 2.51            | 0.00         |
| 17.00        | 4.11             | 2.13            | 0.01         | 70.00        | 4.56             | 2.51            | 0.00         |
| 18.00        | 4.20             | 2.21            | 0.01         | 71.00        | 4.56             | 2.51            | 0.00         |
| 19.00        | 4.28             | 2.27            | 0.01         | 72.00        | 4.56             | 2.51            | 0.00         |
| 20.00        | 4.34             | 2.33            | 0.00         | 73.00        | 4.56             | 2.51            | 0.00         |
| 21.00        | 4.40             | 2.38            | 0.00         | 74.00        | 4.56             | 2.51            | 0.00         |
| 22.00        | 4.46             | 2.42            | 0.00         | 75.00        | 4.56             | 2.51            | 0.00         |
| 23.00        | 4.51             | 2.47            | 0.00         | 76.00        | 4.56             | 2.51            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.51</b>     | 0.00         | 77.00        | 4.56             | 2.51            | 0.00         |
| 25.00        | 4.56             | 2.51            | 0.00         | 78.00        | 4.56             | 2.51            | 0.00         |
| 26.00        | 4.56             | 2.51            | 0.00         | 79.00        | 4.56             | 2.51            | 0.00         |
| 27.00        | 4.56             | 2.51            | 0.00         | 80.00        | 4.56             | 2.51            | 0.00         |
| 28.00        | 4.56             | 2.51            | 0.00         | 81.00        | 4.56             | 2.51            | 0.00         |
| 29.00        | 4.56             | 2.51            | 0.00         | 82.00        | 4.56             | 2.51            | 0.00         |
| 30.00        | 4.56             | 2.51            | 0.00         | 83.00        | 4.56             | 2.51            | 0.00         |
| 31.00        | 4.56             | 2.51            | 0.00         | 84.00        | 4.56             | 2.51            | 0.00         |
| 32.00        | 4.56             | 2.51            | 0.00         | 85.00        | 4.56             | 2.51            | 0.00         |
| 33.00        | 4.56             | 2.51            | 0.00         | 86.00        | 4.56             | 2.51            | 0.00         |
| 34.00        | 4.56             | 2.51            | 0.00         | 87.00        | 4.56             | 2.51            | 0.00         |
| 35.00        | 4.56             | 2.51            | 0.00         | 88.00        | 4.56             | 2.51            | 0.00         |
| 36.00        | 4.56             | 2.51            | 0.00         | 89.00        | 4.56             | 2.51            | 0.00         |
| 37.00        | 4.56             | 2.51            | 0.00         | 90.00        | 4.56             | 2.51            | 0.00         |
| 38.00        | 4.56             | 2.51            | 0.00         | 91.00        | 4.56             | 2.51            | 0.00         |
| 39.00        | 4.56             | 2.51            | 0.00         | 92.00        | 4.56             | 2.51            | 0.00         |
| 40.00        | 4.56             | 2.51            | 0.00         | 93.00        | 4.56             | 2.51            | 0.00         |
| 41.00        | 4.56             | 2.51            | 0.00         | 94.00        | 4.56             | 2.51            | 0.00         |
| 42.00        | 4.56             | 2.51            | 0.00         | 95.00        | 4.56             | 2.51            | 0.00         |
| 43.00        | 4.56             | 2.51            | 0.00         | 96.00        | 4.56             | 2.51            | 0.00         |
| 44.00        | 4.56             | 2.51            | 0.00         | 97.00        | 4.56             | 2.51            | 0.00         |
| 45.00        | 4.56             | 2.51            | 0.00         | 98.00        | 4.56             | 2.51            | 0.00         |
| 46.00        | 4.56             | 2.51            | 0.00         | 99.00        | 4.56             | 2.51            | 0.00         |
| 47.00        | 4.56             | 2.51            | 0.00         | 100.00       | 4.56             | 2.51            | 0.00         |
| 48.00        | 4.56             | 2.51            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.51            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.51            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.51            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.51            | 0.00         |              |                  |                 |              |



**Summary for Reach 1R: Existing Swale**

Inflow Area = 4.252 ac, 7.24% Impervious, Inflow Depth = 0.79" for 25-yr event  
 Inflow = 2.88 cfs @ 12.04 hrs, Volume= 0.280 af  
 Outflow = 2.84 cfs @ 12.06 hrs, Volume= 0.280 af, Atten= 2%, Lag= 1.0 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 2.78 fps, Min. Travel Time= 1.5 min  
 Avg. Velocity = 0.68 fps, Avg. Travel Time= 6.0 min

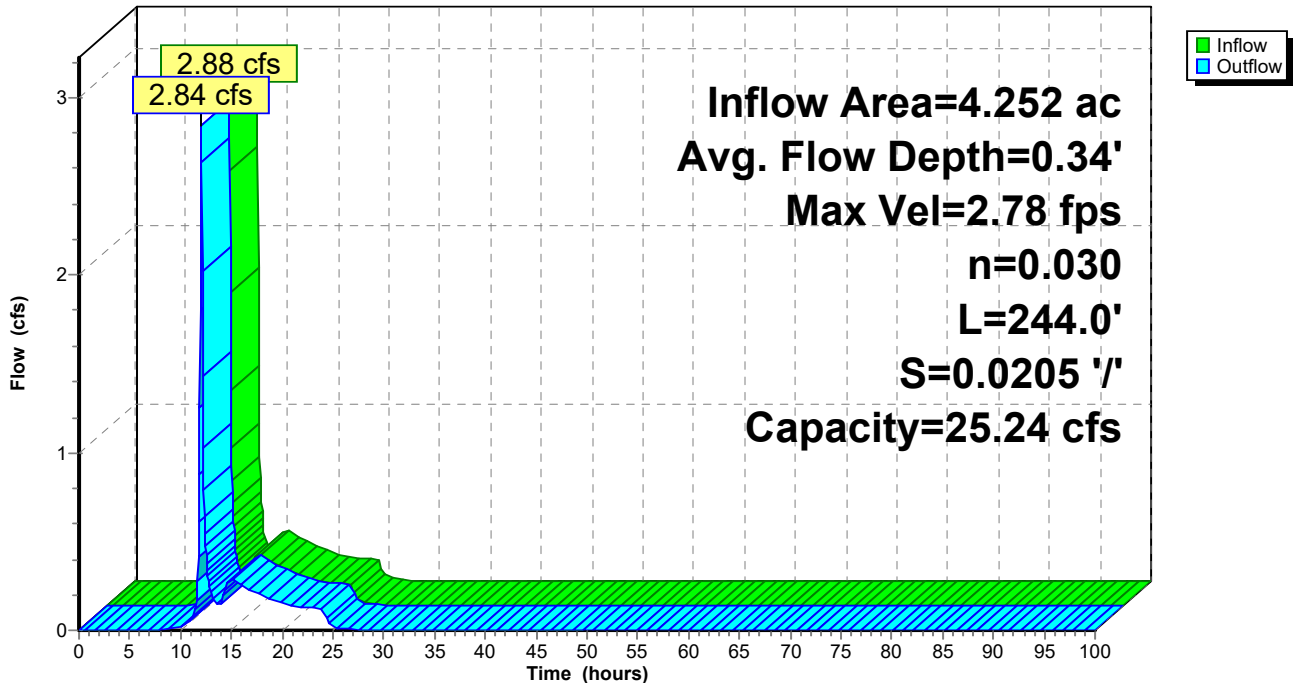
Peak Storage= 249 cf @ 12.06 hrs  
 Average Depth at Peak Storage= 0.34' , Surface Width= 4.03'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 '/  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

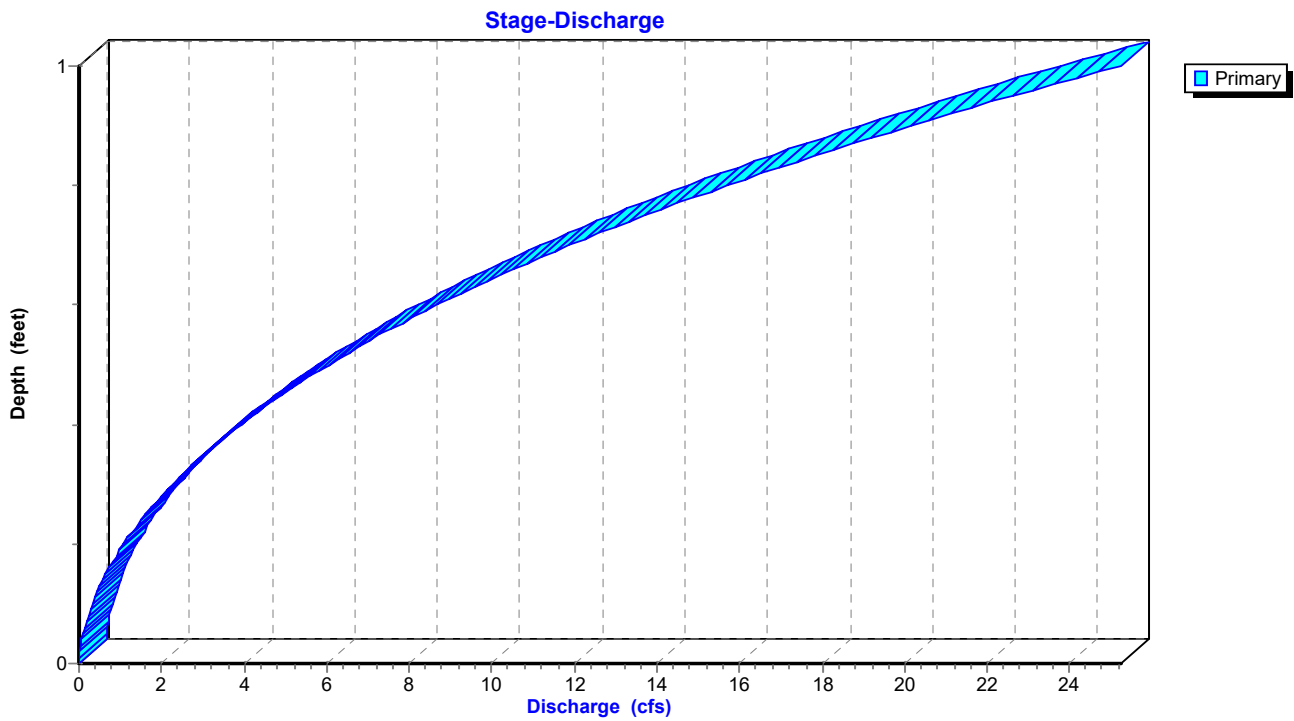


**Reach 1R: Existing Swale**

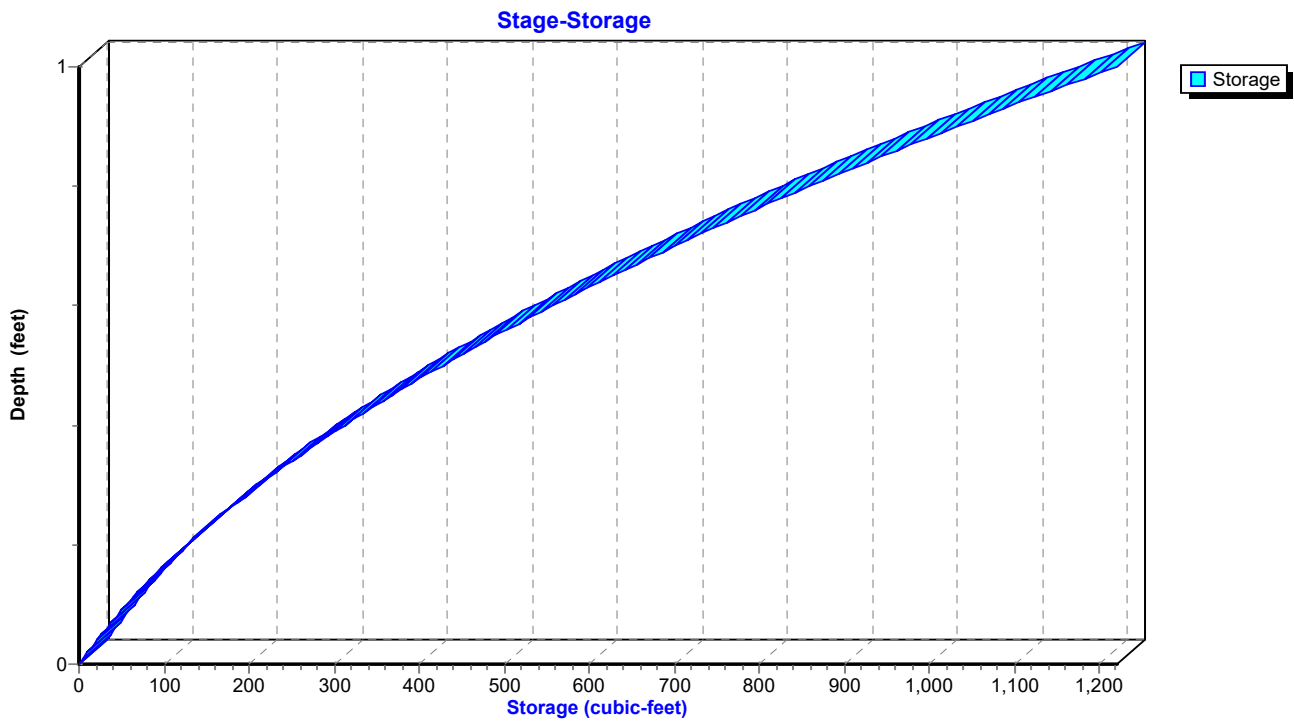
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 10.00        | <b>0.02</b>  | <b>10</b>            | <b>316.02</b>    | <b>0.02</b>   |
| 12.50        | <b>0.39</b>  | <b>67</b>            | <b>316.12</b>    | <b>0.42</b>   |
| 15.00        | 0.30         | 53                   | 316.10           | 0.30          |
| 17.50        | 0.21         | 42                   | 316.08           | 0.21          |
| 20.00        | 0.15         | 34                   | 316.06           | 0.15          |
| 22.50        | 0.13         | 31                   | 316.06           | 0.13          |
| 25.00        | 0.02         | 10                   | 316.02           | 0.02          |
| 27.50        | 0.00         | 2                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.413 ac, 8.82% Impervious, Inflow Depth = 0.88" for 25-yr event  
 Inflow = 3.93 cfs @ 12.04 hrs, Volume= 0.250 af  
 Outflow = 0.20 cfs @ 15.14 hrs, Volume= 0.110 af, Atten= 95%, Lag= 186.2 min  
 Primary = 0.20 cfs @ 15.14 hrs, Volume= 0.110 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 316.55' @ 15.14 hrs Surf.Area= 0.167 ac Storage= 0.341 af (0.149 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 227.6 min ( 1,122.5 - 894.9 )

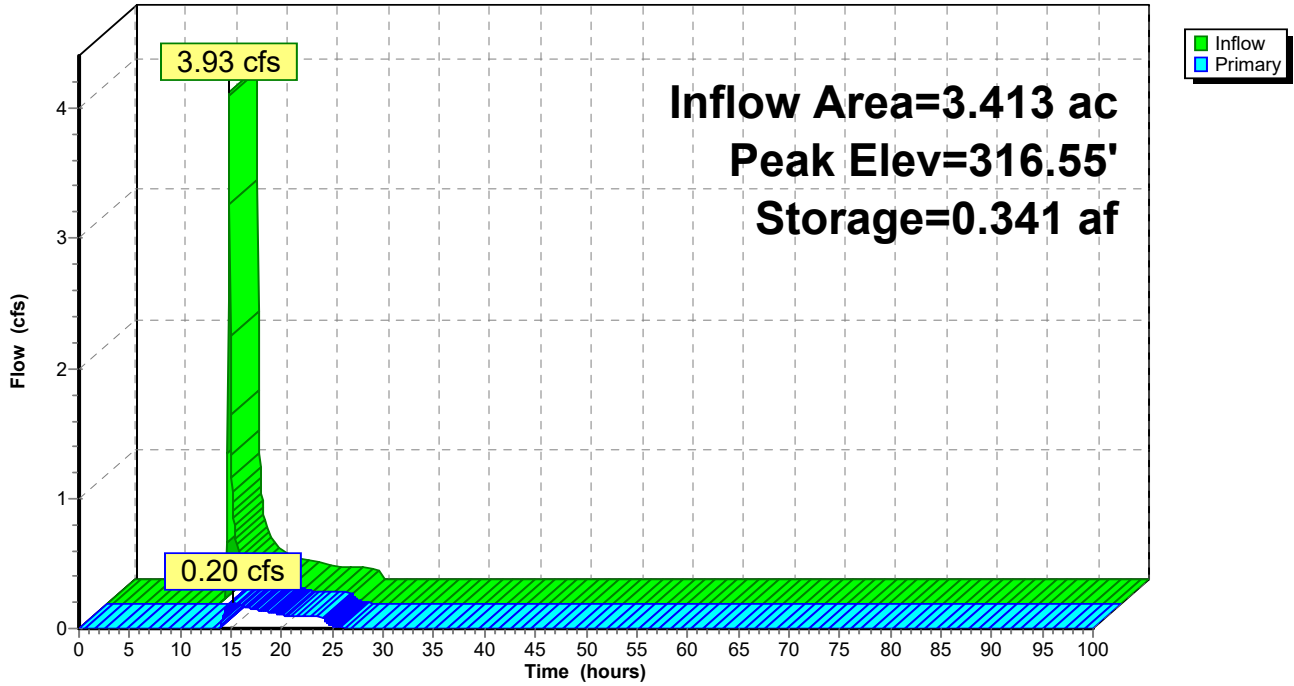
| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|
| #1                  | 313.83'              | 0.443 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |
| 313.83              | 0.088                | 271.6            | 0.000  | 0.000                    | 0.088               |
| 314.00              | 0.107                | 290.3            | 0.017  | 0.017                    | 0.107               |
| 315.50              | 0.128                | 309.9            | 0.176  | 0.193                    | 0.131               |
| 316.00              | 0.139                | 319.8            | 0.067  | 0.259                    | 0.143               |
| 316.50              | 0.154                | 348.8            | 0.073  | 0.333                    | 0.179               |
| 317.00              | 0.295                | 446.8            | 0.110  | 0.443                    | 0.321               |

| Device | Routing | Invert  | Outlet Devices  |      |      |      |      |      |      |      |      |
|--------|---------|---------|---|------|------|------|------|------|------|------|------|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |      |      |      |      |      |      |      |      |
|        |         |         | Head (feet)   | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 |
|        |         |         | Coef. (English)   | 2.68 | 2.70 | 2.70 | 2.64 | 2.63 | 2.64 | 2.64 | 2.63 |

**Primary OutFlow** Max=0.20 cfs @ 15.14 hrs HW=316.55' TW=316.09' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.20 cfs @ 0.62 fps)

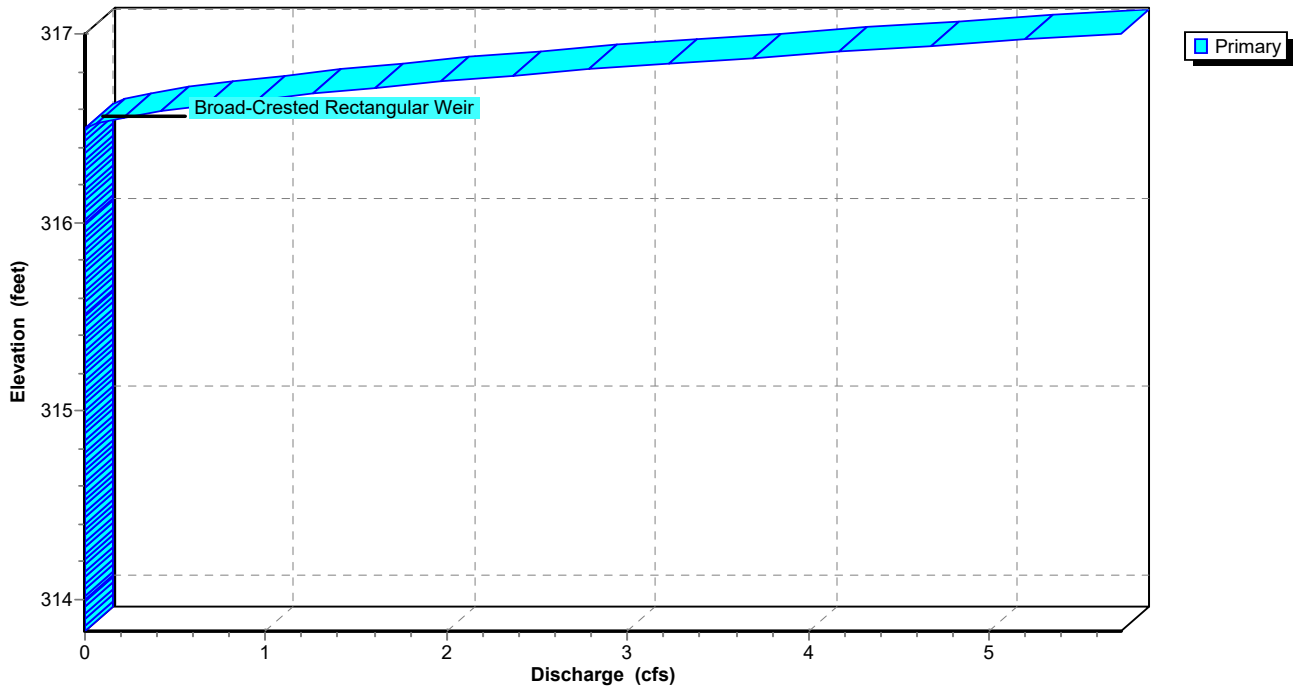
**Pond 1ST: Existing Sediment Trap**

Hydrograph

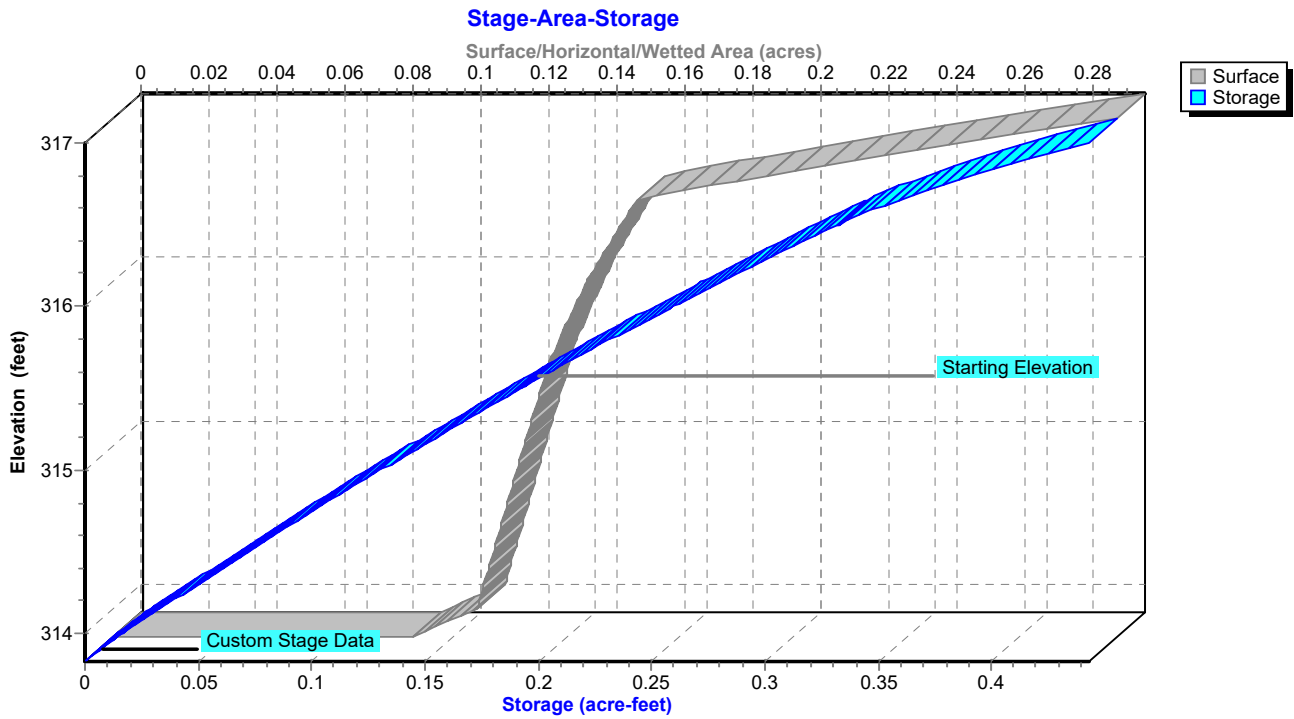


**Pond 1ST: Existing Sediment Trap**

Stage-Discharge



### Pond 1ST: Existing Sediment Trap





**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 2.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 5.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 7.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.193               | 315.50           | 0.00          |
| 12.50        | <b>0.66</b>  | 0.288               | 316.20           | 0.00          |
| 15.00        | 0.20         | <b>0.341</b>        | <b>316.55</b>    | <b>0.20</b>   |
| 17.50        | 0.14         | <b>0.339</b>        | <b>316.54</b>    | <b>0.14</b>   |
| 20.00        | 0.10         | 0.338               | 316.54           | 0.11          |
| 22.50        | 0.09         | 0.338               | 316.53           | 0.09          |
| 25.00        | 0.00         | 0.334               | 316.51           | 0.02          |
| 27.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 30.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 32.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 35.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 37.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 40.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 42.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 45.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 47.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 50.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 52.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 55.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 57.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 60.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 62.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 65.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 67.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 70.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 72.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 75.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 77.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 80.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 82.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 85.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 87.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 90.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 92.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 95.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 97.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 100.00       | 0.00         | 0.333               | 316.50           | 0.00          |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 1.15" for 25-yr event  
 Inflow = 6.87 cfs @ 12.03 hrs, Volume= 0.510 af  
 Outflow = 3.25 cfs @ 12.18 hrs, Volume= 0.364 af, Atten= 53%, Lag= 8.9 min  
 Primary = 3.25 cfs @ 12.18 hrs, Volume= 0.364 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.41' @ 12.18 hrs Surf.Area= 0.102 ac Storage= 0.180 af (0.169 af above start)

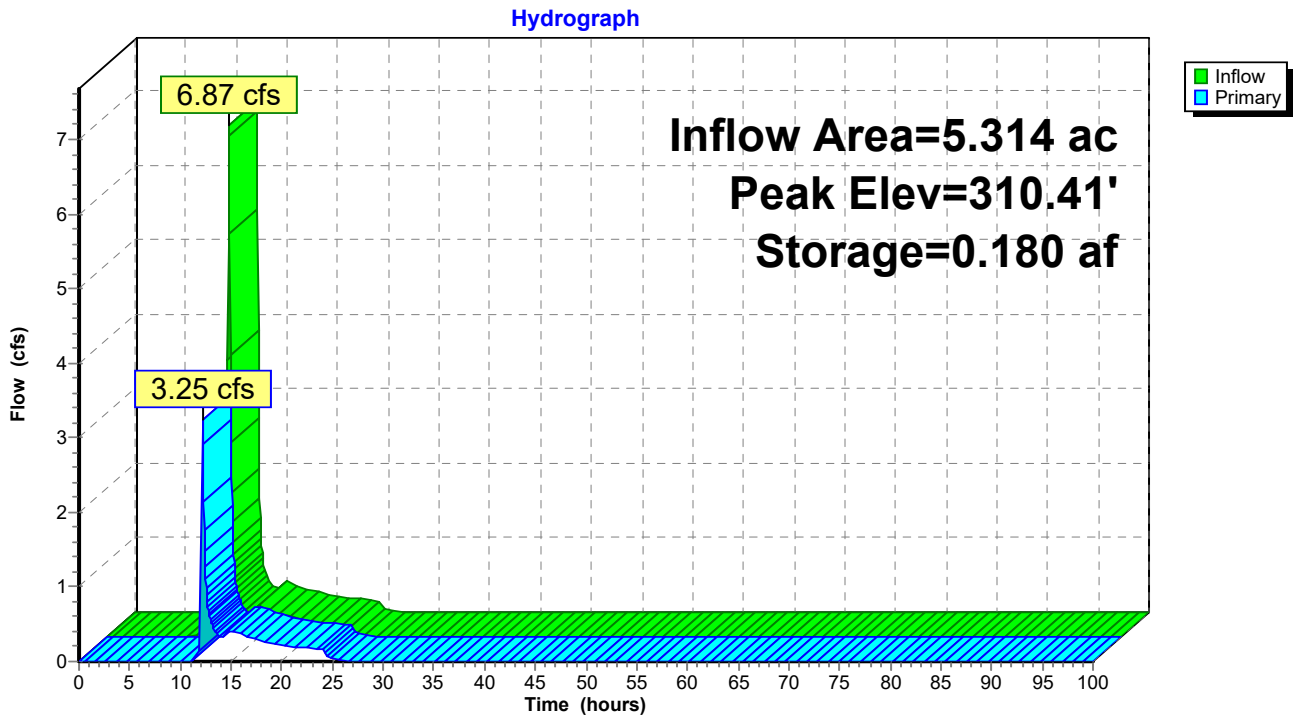
Plug-Flow detention time= 227.1 min calculated for 0.353 af (69% of inflow)  
 Center-of-Mass det. time= 86.6 min ( 978.8 - 892.2 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|
| #1                  | 307.00'              | 0.248 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |
| 307.00              | 0.019                | 188.4            | 0.000  | 0.000                    | 0.019               |
| 307.50              | 0.026                | 206.4            | 0.011  | 0.011                    | 0.032               |
| 308.00              | 0.036                | 232.2            | 0.015  | 0.027                    | 0.053               |
| 309.00              | 0.057                | 269.3            | 0.046  | 0.073                    | 0.087               |
| 310.00              | 0.083                | 316.3            | 0.070  | 0.142                    | 0.138               |
| 311.00              | 0.131                | 434.9            | 0.106  | 0.248                    | 0.301               |

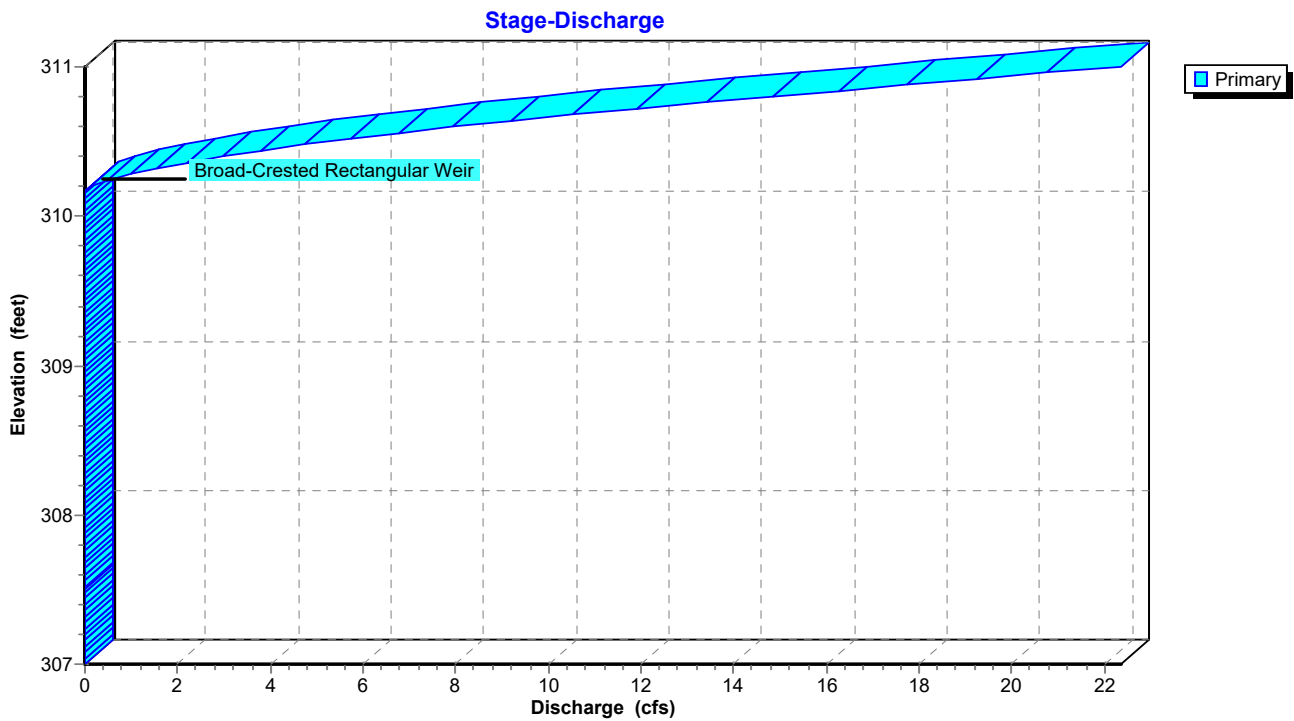
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64    |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74                         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=3.18 cfs @ 12.18 hrs HW=310.41' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 3.18 cfs @ 1.20 fps)

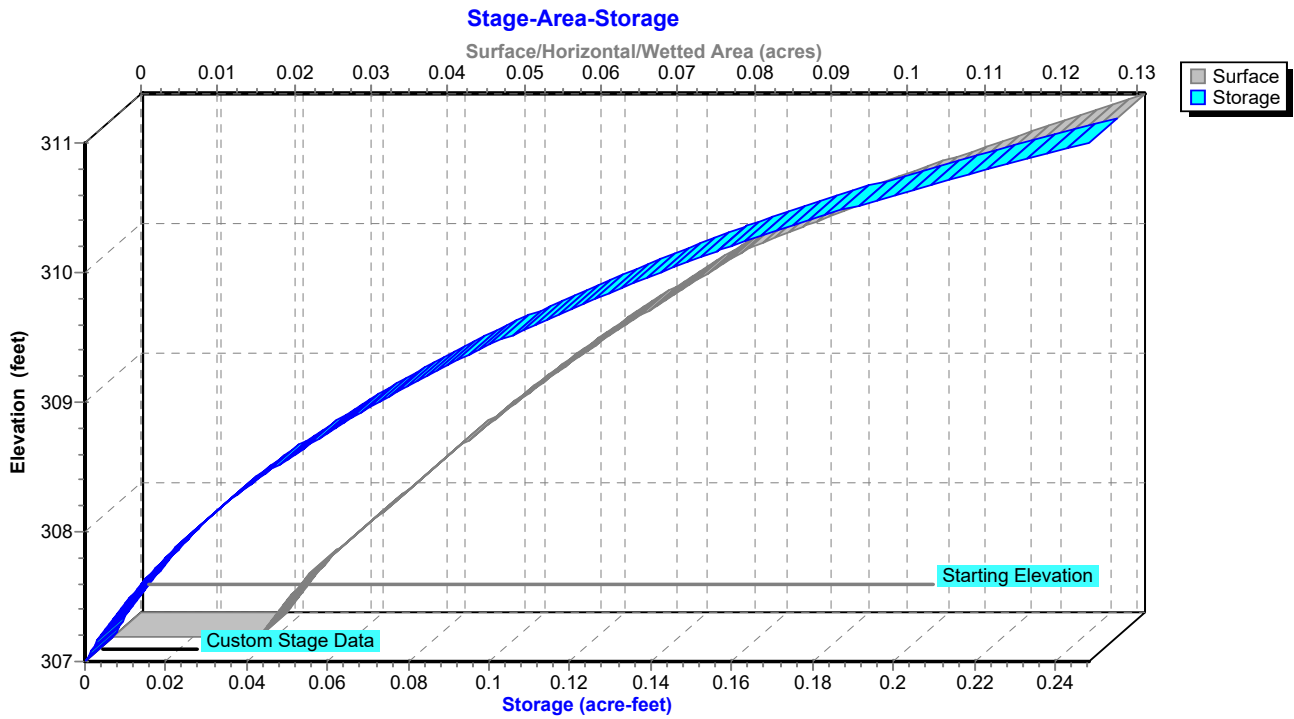
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 2.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 5.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 7.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 10.00        | <b>0.07</b>  | <b>0.016</b>        | <b>307.68</b>    | <b>0.00</b>   |
| 12.50        | <b>0.89</b>  | <b>0.168</b>        | <b>310.29</b>    | <b>1.12</b>   |
| 15.00        | 0.42         | 0.163               | 310.23           | 0.42          |
| 17.50        | 0.29         | 0.162               | 310.22           | 0.29          |
| 20.00        | 0.21         | 0.161               | 310.21           | 0.21          |
| 22.50        | 0.18         | 0.160               | 310.21           | 0.18          |
| 25.00        | 0.02         | 0.158               | 310.18           | 0.04          |
| 27.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 30.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 32.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 35.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 37.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 40.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 42.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 45.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 47.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 50.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 52.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 55.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 57.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 60.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 62.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 65.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 67.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 70.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 72.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 75.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 77.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 80.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 82.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 85.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 87.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 90.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 92.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 95.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 97.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 100.00       | 0.00         | 0.157               | 310.17           | 0.00          |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |



**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

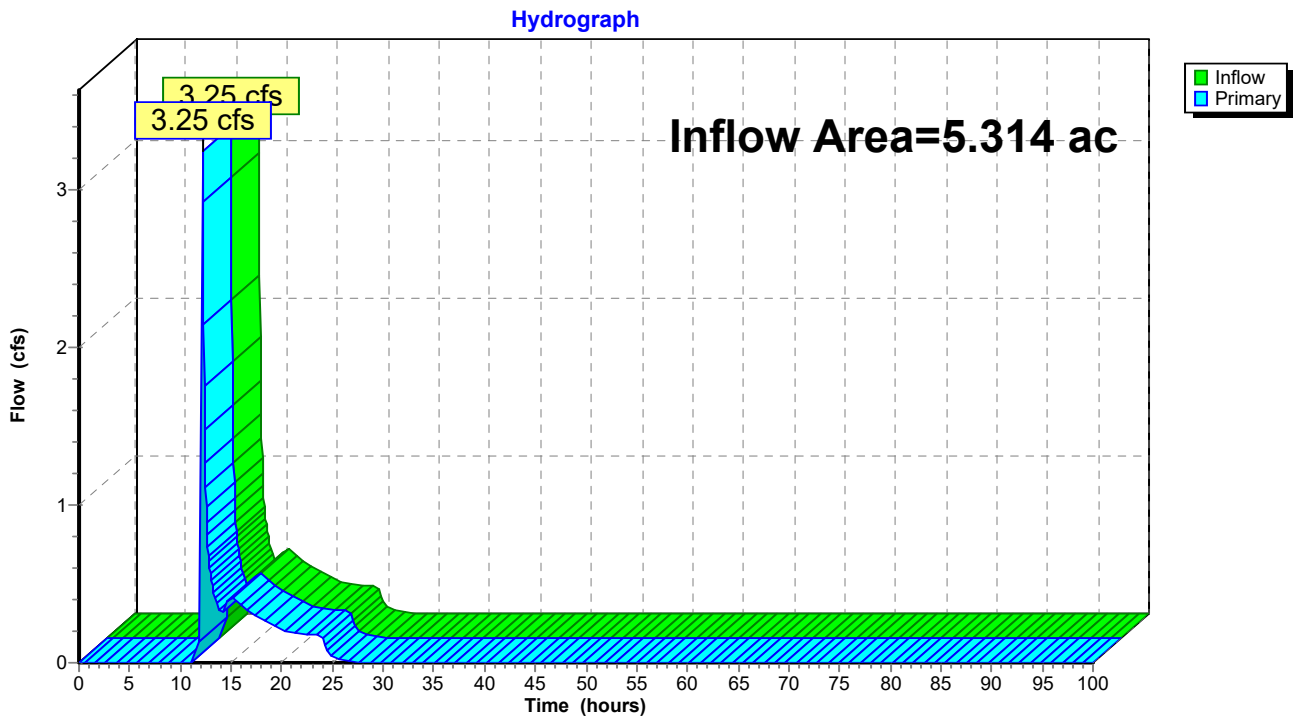
| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 0.82" for 25-yr event  
Inflow = 3.25 cfs @ 12.18 hrs, Volume= 0.364 af  
Primary = 3.25 cfs @ 12.18 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1



**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.53</b>  | 0.00             | <b>0.53</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.31         | 0.00             | 0.31          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.42         | 0.00             | 0.42          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.36         | 0.00             | 0.36          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.31         | 0.00             | 0.31          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.28         | 0.00             | 0.28          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.24         | 0.00             | 0.24          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.21         | 0.00             | 0.21          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.19         | 0.00             | 0.19          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.18         | 0.00             | 0.18          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.18         | 0.00             | 0.18          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.17         | 0.00             | 0.17          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.04         | 0.00             | 0.04          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.01         | 0.00             | 0.01          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.01         | 0.00             | 0.01          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

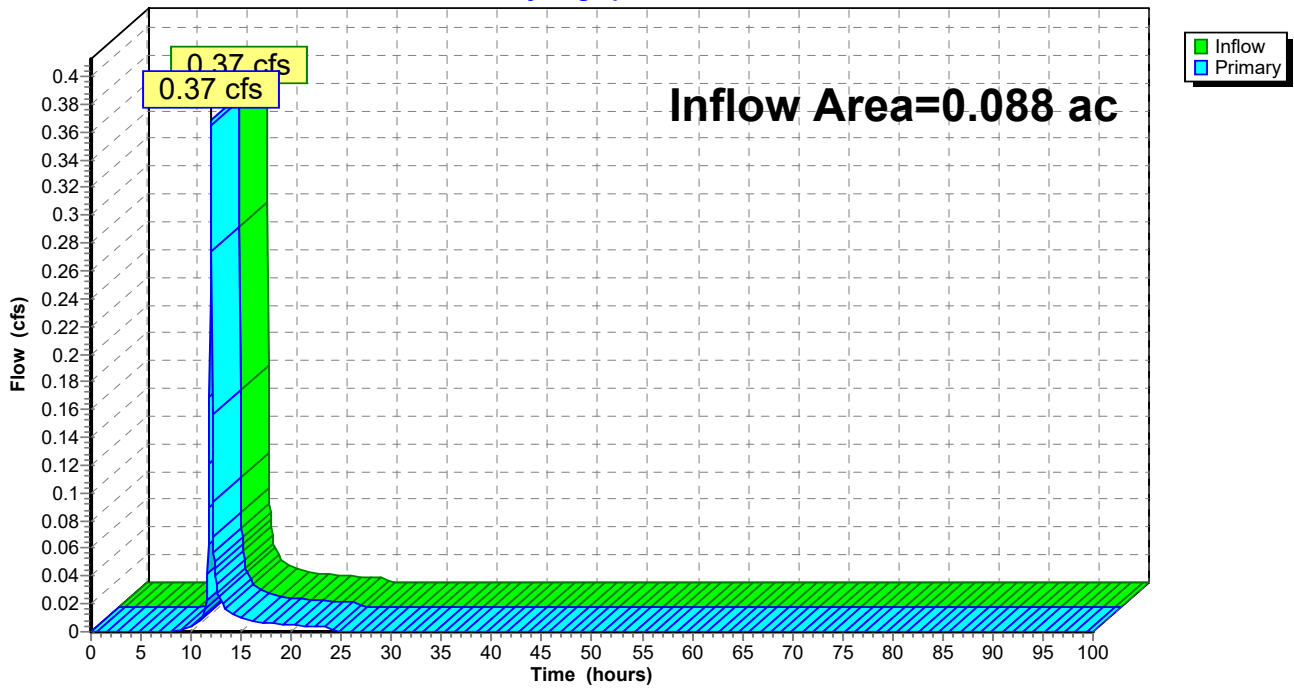
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.088 ac, 0.00% Impervious, Inflow Depth = 2.51" for 25-yr event  
Inflow = 0.37 cfs @ 11.99 hrs, Volume= 0.018 af  
Primary = 0.37 cfs @ 11.99 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.01         | 0.00             | 0.01          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.36</b>  | 0.00             | <b>0.36</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.02         | 0.00             | 0.02          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.01         | 0.00             | 0.01          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.01         | 0.00             | 0.01          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.01         | 0.00             | 0.01          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.01         | 0.00             | 0.01          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.01         | 0.00             | 0.01          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.01         | 0.00             | 0.01          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Existing Stormwater Conditions Final D Soils FarType II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |   |
|---|---|
| <b>Subcatchment 1S: Subcat 1</b>        | Runoff Area=3.413 ac 8.82% Impervious Runoff Depth=1.82"<br>Flow Length=499' Tc=10.0 min CN=57 Runoff=9.06 cfs 0.519 af                       |
| <b>Subcatchment 2aS: Subcat 2a</b>      | Runoff Area=0.839 ac 0.83% Impervious Runoff Depth=3.89"<br>Flow Length=211' Tc=12.1 min CN=79 Runoff=4.58 cfs 0.272 af                       |
| <b>Subcatchment 2bS: Subcat 2b</b>      | Runoff Area=1.062 ac 10.45% Impervious Runoff Depth=4.10"<br>Flow Length=331' Tc=9.7 min CN=81 Runoff=6.55 cfs 0.363 af                       |
| <b>Subcatchment 3S: Subcat 3</b>        | Runoff Area=0.088 ac 0.00% Impervious Runoff Depth=4.00"<br>Flow Length=225' Tc=7.3 min CN=80 Runoff=0.58 cfs 0.029 af                        |
| <b>Reach 1R: Existing Swale</b>         | Avg. Flow Depth=0.43' Max Vel=3.18 fps Inflow=4.55 cfs 0.651 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=4.55 cfs 0.651 af |
| <b>Pond 1ST: Existing Sediment Trap</b> | Peak Elev=316.75' Storage=0.379 af Inflow=9.06 cfs 0.519 af<br>Outflow=2.01 cfs 0.379 af  |
| <b>Pond 2ST: Existing Sediment Trap</b> | Peak Elev=310.65' Storage=0.206 af Inflow=10.78 cfs 1.014 af<br>Outflow=9.61 cfs 0.868 af   |
| <b>Link AP1: Analysis Point 1</b>       | Inflow=9.61 cfs 0.868 af<br>Primary=9.61 cfs 0.868 af   |
| <b>Link AP2: Analysis Point 2</b>       | Inflow=0.58 cfs 0.029 af<br>Primary=0.58 cfs 0.029 af   |

**Total Runoff Area = 5.402 ac Runoff Volume = 1.183 af Average Runoff Depth = 2.63"**  
**92.24% Pervious = 4.983 ac 7.76% Impervious = 0.419 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 9.06 cfs @ 12.03 hrs, Volume= 0.519 af, Depth= 1.82"

Routed to Pond 1ST : Existing Sediment Trap

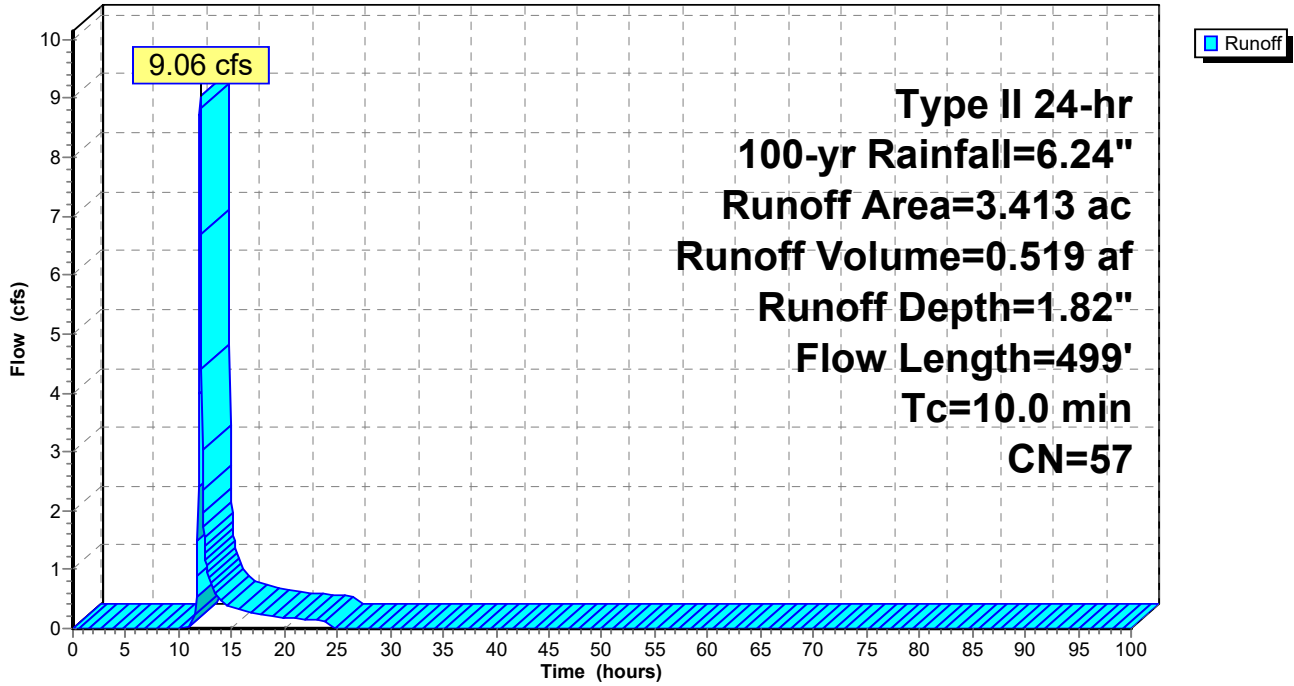
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| * 0.022   | 98 | Roofs, HSG A                        |
| * 0.005   | 98 | Paved parking, HSG A                |
| 0.136     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.252     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 0.876     | 78 | Meadow, non-grazed, HSG D           |
| * 0.438   | 89 | Gravel surface, HSG D               |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.413     | 57 | Weighted Average                    |
| 3.112     |    | 91.18% Pervious Area                |
| 0.301     |    | 8.82% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.2      | 69            | 0.0600        | 4.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.0     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph





**1096 Existing Stormwater Conditions Final D Soils FarType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment 1S: Subcat 1**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 1.82               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 1.82               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 1.82               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 1.82               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 1.82               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 1.82               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 1.82               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 1.82               | 0.00            |
| 8.00            | 0.75                | 0.00               | 0.00            | 61.00           | 6.24                | 1.82               | 0.00            |
| 9.00            | 0.92                | 0.00               | 0.00            | 62.00           | 6.24                | 1.82               | 0.00            |
| 10.00           | 1.13                | 0.00               | 0.00            | 63.00           | 6.24                | 1.82               | 0.00            |
| 11.00           | 1.47                | 0.00               | 0.00            | 64.00           | 6.24                | 1.82               | 0.00            |
| 12.00           | 4.14                | 0.68               | <b>8.71</b>     | 65.00           | 6.24                | 1.82               | 0.00            |
| 13.00           | 4.82                | 1.01               | <b>0.76</b>     | 66.00           | 6.24                | 1.82               | 0.00            |
| 14.00           | 5.12                | 1.17               | 0.46            | 67.00           | 6.24                | 1.82               | 0.00            |
| 15.00           | 5.33                | 1.28               | 0.37            | 68.00           | 6.24                | 1.82               | 0.00            |
| 16.00           | 5.49                | 1.38               | 0.29            | 69.00           | 6.24                | 1.82               | 0.00            |
| 17.00           | 5.63                | 1.45               | 0.26            | 70.00           | 6.24                | 1.82               | 0.00            |
| 18.00           | 5.75                | 1.52               | 0.23            | 71.00           | 6.24                | 1.82               | 0.00            |
| 19.00           | 5.85                | 1.59               | 0.20            | 72.00           | 6.24                | 1.82               | 0.00            |
| 20.00           | 5.94                | 1.64               | 0.17            | 73.00           | 6.24                | 1.82               | 0.00            |
| 21.00           | 6.02                | 1.69               | 0.16            | 74.00           | 6.24                | 1.82               | 0.00            |
| 22.00           | 6.10                | 1.73               | 0.16            | 75.00           | 6.24                | 1.82               | 0.00            |
| 23.00           | 6.17                | 1.78               | 0.15            | 76.00           | 6.24                | 1.82               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>1.82</b>        | 0.15            | 77.00           | 6.24                | 1.82               | 0.00            |
| 25.00           | 6.24                | 1.82               | 0.00            | 78.00           | 6.24                | 1.82               | 0.00            |
| 26.00           | 6.24                | 1.82               | 0.00            | 79.00           | 6.24                | 1.82               | 0.00            |
| 27.00           | 6.24                | 1.82               | 0.00            | 80.00           | 6.24                | 1.82               | 0.00            |
| 28.00           | 6.24                | 1.82               | 0.00            | 81.00           | 6.24                | 1.82               | 0.00            |
| 29.00           | 6.24                | 1.82               | 0.00            | 82.00           | 6.24                | 1.82               | 0.00            |
| 30.00           | 6.24                | 1.82               | 0.00            | 83.00           | 6.24                | 1.82               | 0.00            |
| 31.00           | 6.24                | 1.82               | 0.00            | 84.00           | 6.24                | 1.82               | 0.00            |
| 32.00           | 6.24                | 1.82               | 0.00            | 85.00           | 6.24                | 1.82               | 0.00            |
| 33.00           | 6.24                | 1.82               | 0.00            | 86.00           | 6.24                | 1.82               | 0.00            |
| 34.00           | 6.24                | 1.82               | 0.00            | 87.00           | 6.24                | 1.82               | 0.00            |
| 35.00           | 6.24                | 1.82               | 0.00            | 88.00           | 6.24                | 1.82               | 0.00            |
| 36.00           | 6.24                | 1.82               | 0.00            | 89.00           | 6.24                | 1.82               | 0.00            |
| 37.00           | 6.24                | 1.82               | 0.00            | 90.00           | 6.24                | 1.82               | 0.00            |
| 38.00           | 6.24                | 1.82               | 0.00            | 91.00           | 6.24                | 1.82               | 0.00            |
| 39.00           | 6.24                | 1.82               | 0.00            | 92.00           | 6.24                | 1.82               | 0.00            |
| 40.00           | 6.24                | 1.82               | 0.00            | 93.00           | 6.24                | 1.82               | 0.00            |
| 41.00           | 6.24                | 1.82               | 0.00            | 94.00           | 6.24                | 1.82               | 0.00            |
| 42.00           | 6.24                | 1.82               | 0.00            | 95.00           | 6.24                | 1.82               | 0.00            |
| 43.00           | 6.24                | 1.82               | 0.00            | 96.00           | 6.24                | 1.82               | 0.00            |
| 44.00           | 6.24                | 1.82               | 0.00            | 97.00           | 6.24                | 1.82               | 0.00            |
| 45.00           | 6.24                | 1.82               | 0.00            | 98.00           | 6.24                | 1.82               | 0.00            |
| 46.00           | 6.24                | 1.82               | 0.00            | 99.00           | 6.24                | 1.82               | 0.00            |
| 47.00           | 6.24                | 1.82               | 0.00            | 100.00          | 6.24                | 1.82               | 0.00            |
| 48.00           | 6.24                | 1.82               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 1.82               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 1.82               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 1.82               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 1.82               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 4.58 cfs @ 12.04 hrs, Volume= 0.272 af, Depth= 3.89"  
 Routed to Reach 1R : Existing Swale

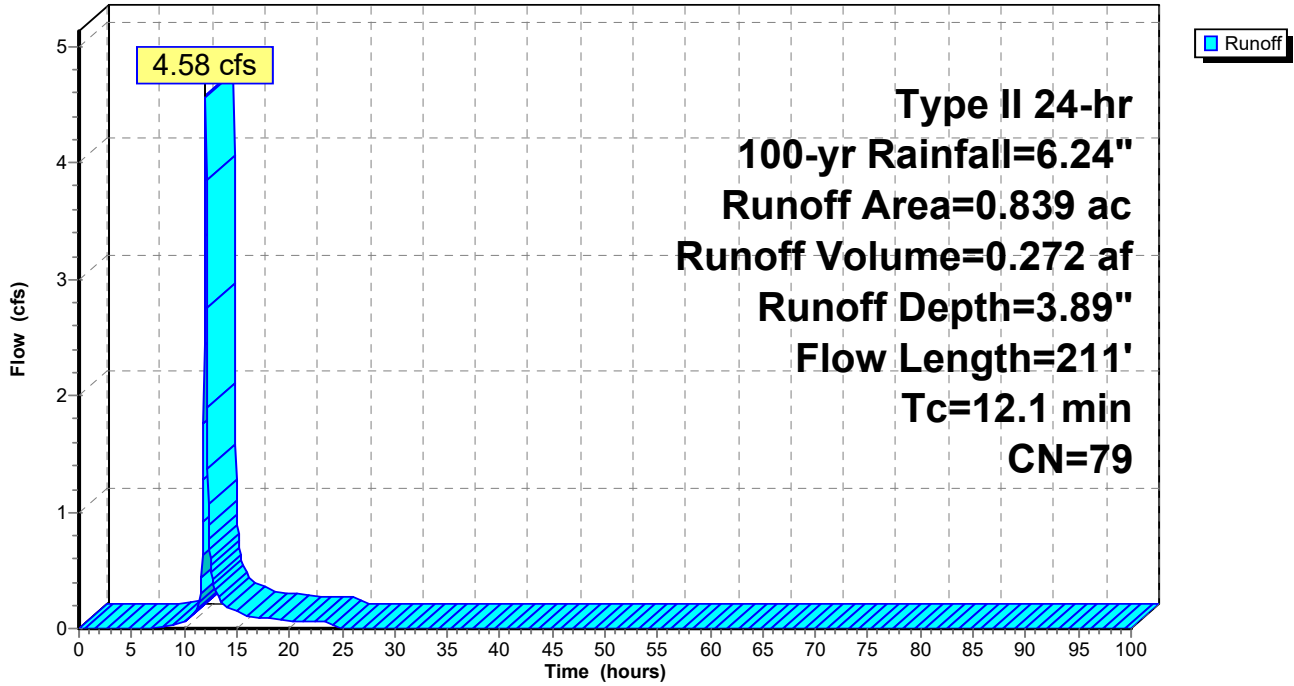
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.727     | 78 | Meadow, non-grazed, HSG D |
| 0.004     | 71 | Meadow, non-grazed, HSG C |
| * 0.101   | 89 | Gravel surface, HSG D     |
| * 0.007   | 98 | Water Surface, HSG D      |
| 0.839     | 79 | Weighted Average          |
| 0.832     |    | 99.17% Pervious Area      |
| 0.007     |    | 0.83% Impervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.0      | 24            | 0.0060        | 0.08              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.7      | 35            | 0.0110        | 0.79              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 5.3      | 41            | 0.0150        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.6      | 35            | 0.0200        | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.1      | 27            | 0.0240        | 3.14              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 10            | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 33            | 0.0210        | 2.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 6             | 0.0340        | 1.29              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 12.1     | 211           | Total         |                   |                |   |

Subcatchment 2aS: Subcat 2a

Hydrograph



**1096 Existing Stormwater Conditions Final D Soils FarType II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 3.89            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 3.89            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 3.89            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 3.89            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 3.89            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 3.89            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 3.89            | 0.00         |
| 7.00         | 0.62             | 0.00            | 0.00         | 60.00        | 6.24             | 3.89            | 0.00         |
| 8.00         | 0.75             | 0.02            | 0.01         | 61.00        | 6.24             | 3.89            | 0.00         |
| 9.00         | 0.92             | 0.05            | 0.03         | 62.00        | 6.24             | 3.89            | 0.00         |
| 10.00        | 1.13             | 0.11            | 0.06         | 63.00        | 6.24             | 3.89            | 0.00         |
| 11.00        | 1.47             | 0.24            | 0.15         | 64.00        | 6.24             | 3.89            | 0.00         |
| 12.00        | 4.14             | 2.08            | <b>4.31</b>  | 65.00        | 6.24             | 3.89            | 0.00         |
| 13.00        | 4.82             | 2.65            | <b>0.32</b>  | 66.00        | 6.24             | 3.89            | 0.00         |
| 14.00        | 5.12             | 2.90            | 0.19         | 67.00        | 6.24             | 3.89            | 0.00         |
| 15.00        | 5.33             | 3.08            | 0.14         | 68.00        | 6.24             | 3.89            | 0.00         |
| 16.00        | 5.49             | 3.23            | 0.11         | 69.00        | 6.24             | 3.89            | 0.00         |
| 17.00        | 5.63             | 3.35            | 0.10         | 70.00        | 6.24             | 3.89            | 0.00         |
| 18.00        | 5.75             | 3.45            | 0.09         | 71.00        | 6.24             | 3.89            | 0.00         |
| 19.00        | 5.85             | 3.55            | 0.07         | 72.00        | 6.24             | 3.89            | 0.00         |
| 20.00        | 5.94             | 3.63            | 0.06         | 73.00        | 6.24             | 3.89            | 0.00         |
| 21.00        | 6.02             | 3.70            | 0.06         | 74.00        | 6.24             | 3.89            | 0.00         |
| 22.00        | 6.10             | 3.77            | 0.06         | 75.00        | 6.24             | 3.89            | 0.00         |
| 23.00        | 6.17             | 3.83            | 0.05         | 76.00        | 6.24             | 3.89            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>3.89</b>     | 0.05         | 77.00        | 6.24             | 3.89            | 0.00         |
| 25.00        | 6.24             | 3.89            | 0.00         | 78.00        | 6.24             | 3.89            | 0.00         |
| 26.00        | 6.24             | 3.89            | 0.00         | 79.00        | 6.24             | 3.89            | 0.00         |
| 27.00        | 6.24             | 3.89            | 0.00         | 80.00        | 6.24             | 3.89            | 0.00         |
| 28.00        | 6.24             | 3.89            | 0.00         | 81.00        | 6.24             | 3.89            | 0.00         |
| 29.00        | 6.24             | 3.89            | 0.00         | 82.00        | 6.24             | 3.89            | 0.00         |
| 30.00        | 6.24             | 3.89            | 0.00         | 83.00        | 6.24             | 3.89            | 0.00         |
| 31.00        | 6.24             | 3.89            | 0.00         | 84.00        | 6.24             | 3.89            | 0.00         |
| 32.00        | 6.24             | 3.89            | 0.00         | 85.00        | 6.24             | 3.89            | 0.00         |
| 33.00        | 6.24             | 3.89            | 0.00         | 86.00        | 6.24             | 3.89            | 0.00         |
| 34.00        | 6.24             | 3.89            | 0.00         | 87.00        | 6.24             | 3.89            | 0.00         |
| 35.00        | 6.24             | 3.89            | 0.00         | 88.00        | 6.24             | 3.89            | 0.00         |
| 36.00        | 6.24             | 3.89            | 0.00         | 89.00        | 6.24             | 3.89            | 0.00         |
| 37.00        | 6.24             | 3.89            | 0.00         | 90.00        | 6.24             | 3.89            | 0.00         |
| 38.00        | 6.24             | 3.89            | 0.00         | 91.00        | 6.24             | 3.89            | 0.00         |
| 39.00        | 6.24             | 3.89            | 0.00         | 92.00        | 6.24             | 3.89            | 0.00         |
| 40.00        | 6.24             | 3.89            | 0.00         | 93.00        | 6.24             | 3.89            | 0.00         |
| 41.00        | 6.24             | 3.89            | 0.00         | 94.00        | 6.24             | 3.89            | 0.00         |
| 42.00        | 6.24             | 3.89            | 0.00         | 95.00        | 6.24             | 3.89            | 0.00         |
| 43.00        | 6.24             | 3.89            | 0.00         | 96.00        | 6.24             | 3.89            | 0.00         |
| 44.00        | 6.24             | 3.89            | 0.00         | 97.00        | 6.24             | 3.89            | 0.00         |
| 45.00        | 6.24             | 3.89            | 0.00         | 98.00        | 6.24             | 3.89            | 0.00         |
| 46.00        | 6.24             | 3.89            | 0.00         | 99.00        | 6.24             | 3.89            | 0.00         |
| 47.00        | 6.24             | 3.89            | 0.00         | 100.00       | 6.24             | 3.89            | 0.00         |
| 48.00        | 6.24             | 3.89            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 3.89            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 3.89            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 3.89            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 3.89            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2bS: Subcat 2b**

Runoff = 6.55 cfs @ 12.01 hrs, Volume= 0.363 af, Depth= 4.10"

Routed to Pond 2ST : Existing Sediment Trap

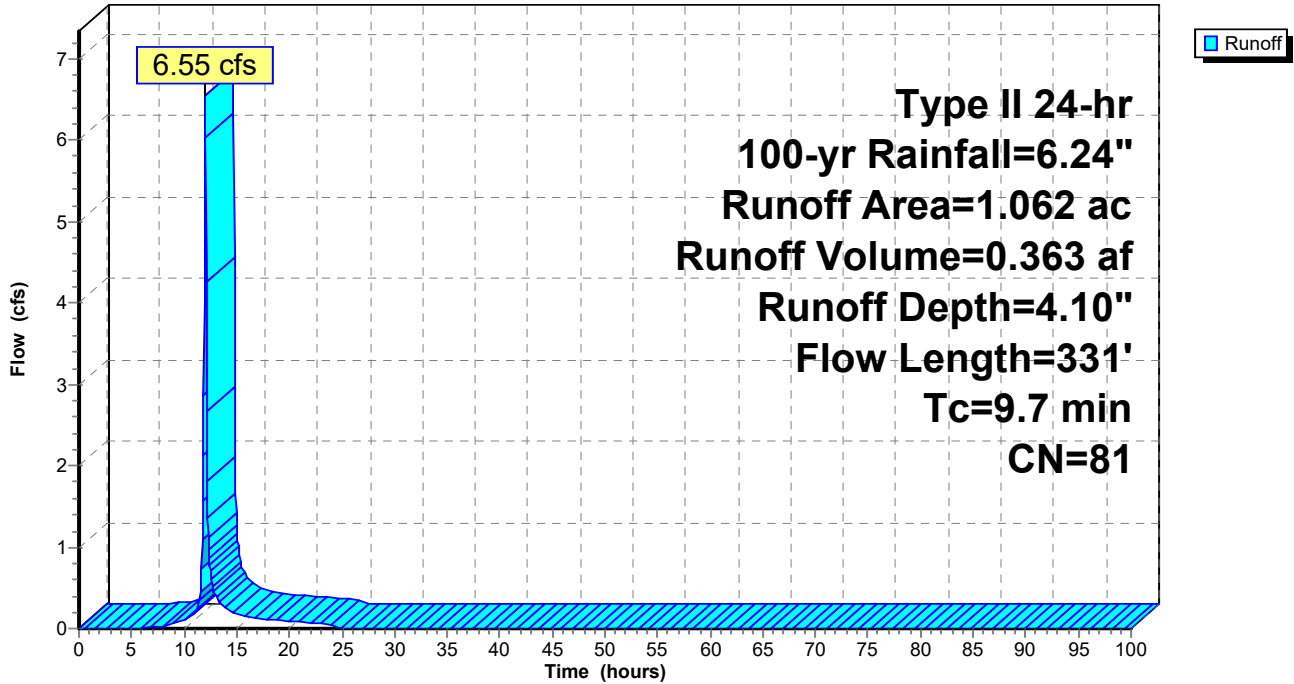
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.590     | 78 | Meadow, non-grazed, HSG D |
| 0.180     | 71 | Meadow, non-grazed, HSG C |
| * 0.148   | 89 | Gravel surface, HSG D     |
| * 0.006   | 98 | Water Surface, HSG D      |
| 0.105     | 98 | Water Surface, HSG C      |
| * 0.033   | 89 | Gravel surface, HSG C     |
| 1.062     | 81 | Weighted Average          |
| 0.951     |    | 89.55% Pervious Area      |
| 0.111     |    | 10.45% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.7      | 38            | 0.0140        | 0.88              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 6.0      | 62            | 0.0260        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.7      | 189           | 0.0280        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2      | 28            | 0.0180        | 2.72              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 9.7      | 331           | Total         |                   |                |   |

Subcatchment 2bS: Subcat 2b

Hydrograph



**Hydrograph for Subcatchment 2bS: Subcat 2b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.10            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.10            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.10            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.10            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.10            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 4.10            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 4.10            | 0.00         |
| 7.00         | 0.62             | 0.01            | 0.01         | 60.00        | 6.24             | 4.10            | 0.00         |
| 8.00         | 0.75             | 0.03            | 0.03         | 61.00        | 6.24             | 4.10            | 0.00         |
| 9.00         | 0.92             | 0.07            | 0.06         | 62.00        | 6.24             | 4.10            | 0.00         |
| 10.00        | 1.13             | 0.15            | 0.09         | 63.00        | 6.24             | 4.10            | 0.00         |
| 11.00        | 1.47             | 0.30            | 0.22         | 64.00        | 6.24             | 4.10            | 0.00         |
| 12.00        | 4.14             | 2.24            | <b>6.53</b>  | 65.00        | 6.24             | 4.10            | 0.00         |
| 13.00        | 4.82             | 2.82            | 0.40         | 66.00        | 6.24             | 4.10            | 0.00         |
| 14.00        | 5.12             | 3.09            | 0.24         | 67.00        | 6.24             | 4.10            | 0.00         |
| 15.00        | 5.33             | 3.27            | 0.19         | 68.00        | 6.24             | 4.10            | 0.00         |
| 16.00        | 5.49             | 3.42            | 0.14         | 69.00        | 6.24             | 4.10            | 0.00         |
| 17.00        | 5.63             | 3.55            | 0.13         | 70.00        | 6.24             | 4.10            | 0.00         |
| 18.00        | 5.75             | 3.65            | 0.11         | 71.00        | 6.24             | 4.10            | 0.00         |
| 19.00        | 5.85             | 3.75            | 0.10         | 72.00        | 6.24             | 4.10            | 0.00         |
| 20.00        | 5.94             | 3.83            | 0.08         | 73.00        | 6.24             | 4.10            | 0.00         |
| 21.00        | 6.02             | 3.90            | 0.08         | 74.00        | 6.24             | 4.10            | 0.00         |
| 22.00        | 6.10             | 3.97            | 0.07         | 75.00        | 6.24             | 4.10            | 0.00         |
| 23.00        | 6.17             | 4.04            | 0.07         | 76.00        | 6.24             | 4.10            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>4.10</b>     | 0.07         | 77.00        | 6.24             | 4.10            | 0.00         |
| 25.00        | 6.24             | 4.10            | 0.00         | 78.00        | 6.24             | 4.10            | 0.00         |
| 26.00        | 6.24             | 4.10            | 0.00         | 79.00        | 6.24             | 4.10            | 0.00         |
| 27.00        | 6.24             | 4.10            | 0.00         | 80.00        | 6.24             | 4.10            | 0.00         |
| 28.00        | 6.24             | 4.10            | 0.00         | 81.00        | 6.24             | 4.10            | 0.00         |
| 29.00        | 6.24             | 4.10            | 0.00         | 82.00        | 6.24             | 4.10            | 0.00         |
| 30.00        | 6.24             | 4.10            | 0.00         | 83.00        | 6.24             | 4.10            | 0.00         |
| 31.00        | 6.24             | 4.10            | 0.00         | 84.00        | 6.24             | 4.10            | 0.00         |
| 32.00        | 6.24             | 4.10            | 0.00         | 85.00        | 6.24             | 4.10            | 0.00         |
| 33.00        | 6.24             | 4.10            | 0.00         | 86.00        | 6.24             | 4.10            | 0.00         |
| 34.00        | 6.24             | 4.10            | 0.00         | 87.00        | 6.24             | 4.10            | 0.00         |
| 35.00        | 6.24             | 4.10            | 0.00         | 88.00        | 6.24             | 4.10            | 0.00         |
| 36.00        | 6.24             | 4.10            | 0.00         | 89.00        | 6.24             | 4.10            | 0.00         |
| 37.00        | 6.24             | 4.10            | 0.00         | 90.00        | 6.24             | 4.10            | 0.00         |
| 38.00        | 6.24             | 4.10            | 0.00         | 91.00        | 6.24             | 4.10            | 0.00         |
| 39.00        | 6.24             | 4.10            | 0.00         | 92.00        | 6.24             | 4.10            | 0.00         |
| 40.00        | 6.24             | 4.10            | 0.00         | 93.00        | 6.24             | 4.10            | 0.00         |
| 41.00        | 6.24             | 4.10            | 0.00         | 94.00        | 6.24             | 4.10            | 0.00         |
| 42.00        | 6.24             | 4.10            | 0.00         | 95.00        | 6.24             | 4.10            | 0.00         |
| 43.00        | 6.24             | 4.10            | 0.00         | 96.00        | 6.24             | 4.10            | 0.00         |
| 44.00        | 6.24             | 4.10            | 0.00         | 97.00        | 6.24             | 4.10            | 0.00         |
| 45.00        | 6.24             | 4.10            | 0.00         | 98.00        | 6.24             | 4.10            | 0.00         |
| 46.00        | 6.24             | 4.10            | 0.00         | 99.00        | 6.24             | 4.10            | 0.00         |
| 47.00        | 6.24             | 4.10            | 0.00         | 100.00       | 6.24             | 4.10            | 0.00         |
| 48.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.58 cfs @ 11.98 hrs, Volume= 0.029 af, Depth= 4.00"  
 Routed to Link AP2 : Analysis Point 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

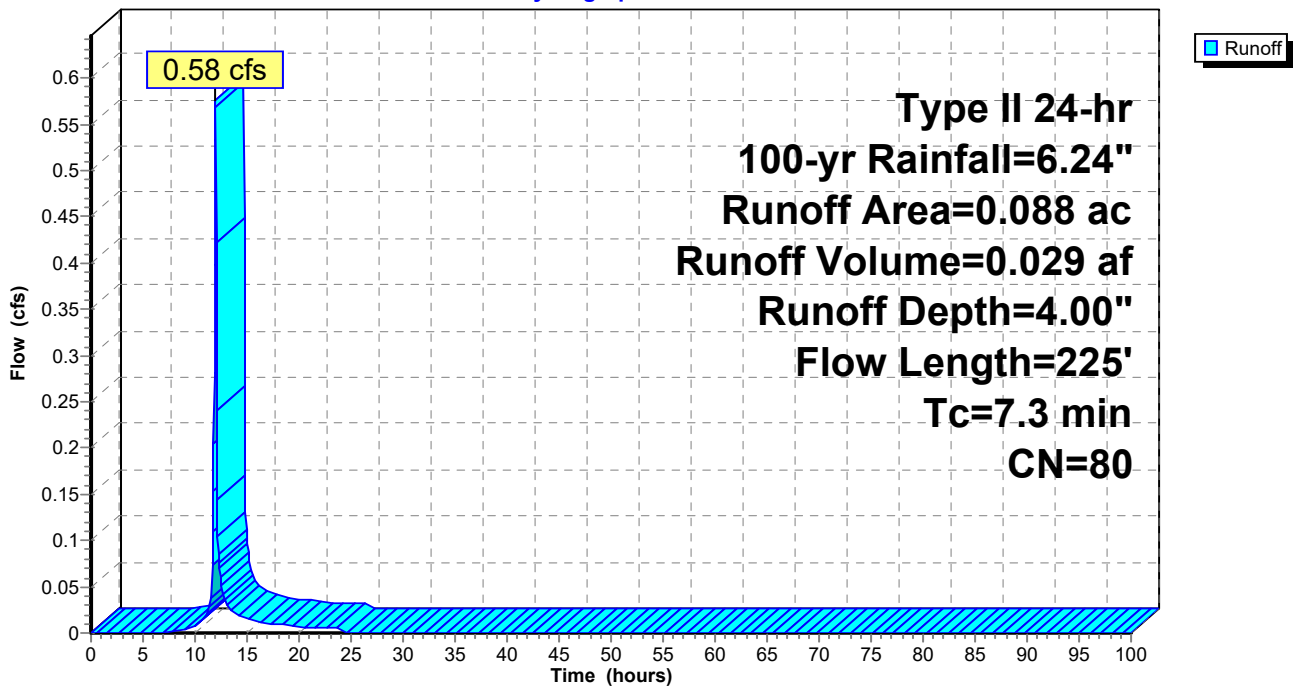
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| * 0.018   | 89 | Gravel surface, HSG A     |
| 0.070     | 78 | Meadow, non-grazed, HSG D |
| 0.088     | 80 | Weighted Average          |
| 0.088     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 3.1      | 12            | 0.0050        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0160        | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.6      | 118           | 0.0290        | 1.19              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.7      | 39            | 0.0030        | 0.38              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 225           | Total         |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph





**1096 Existing Stormwater Conditions Final D Soils FarType II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 3S: Subcat 3**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.00            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.00            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.00            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.00            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.00            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 4.00            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 4.00            | 0.00         |
| 7.00         | 0.62             | 0.01            | 0.00         | 60.00        | 6.24             | 4.00            | 0.00         |
| 8.00         | 0.75             | 0.02            | 0.00         | 61.00        | 6.24             | 4.00            | 0.00         |
| 9.00         | 0.92             | 0.06            | 0.00         | 62.00        | 6.24             | 4.00            | 0.00         |
| 10.00        | 1.13             | 0.13            | 0.01         | 63.00        | 6.24             | 4.00            | 0.00         |
| 11.00        | 1.47             | 0.27            | 0.02         | 64.00        | 6.24             | 4.00            | 0.00         |
| 12.00        | 4.14             | 2.16            | <b>0.57</b>  | 65.00        | 6.24             | 4.00            | 0.00         |
| 13.00        | 4.82             | 2.73            | 0.03         | 66.00        | 6.24             | 4.00            | 0.00         |
| 14.00        | 5.12             | 3.00            | 0.02         | 67.00        | 6.24             | 4.00            | 0.00         |
| 15.00        | 5.33             | 3.18            | 0.02         | 68.00        | 6.24             | 4.00            | 0.00         |
| 16.00        | 5.49             | 3.33            | 0.01         | 69.00        | 6.24             | 4.00            | 0.00         |
| 17.00        | 5.63             | 3.45            | 0.01         | 70.00        | 6.24             | 4.00            | 0.00         |
| 18.00        | 5.75             | 3.55            | 0.01         | 71.00        | 6.24             | 4.00            | 0.00         |
| 19.00        | 5.85             | 3.65            | 0.01         | 72.00        | 6.24             | 4.00            | 0.00         |
| 20.00        | 5.94             | 3.73            | 0.01         | 73.00        | 6.24             | 4.00            | 0.00         |
| 21.00        | 6.02             | 3.80            | 0.01         | 74.00        | 6.24             | 4.00            | 0.00         |
| 22.00        | 6.10             | 3.87            | 0.01         | 75.00        | 6.24             | 4.00            | 0.00         |
| 23.00        | 6.17             | 3.93            | 0.01         | 76.00        | 6.24             | 4.00            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>4.00</b>     | 0.01         | 77.00        | 6.24             | 4.00            | 0.00         |
| 25.00        | 6.24             | 4.00            | 0.00         | 78.00        | 6.24             | 4.00            | 0.00         |
| 26.00        | 6.24             | 4.00            | 0.00         | 79.00        | 6.24             | 4.00            | 0.00         |
| 27.00        | 6.24             | 4.00            | 0.00         | 80.00        | 6.24             | 4.00            | 0.00         |
| 28.00        | 6.24             | 4.00            | 0.00         | 81.00        | 6.24             | 4.00            | 0.00         |
| 29.00        | 6.24             | 4.00            | 0.00         | 82.00        | 6.24             | 4.00            | 0.00         |
| 30.00        | 6.24             | 4.00            | 0.00         | 83.00        | 6.24             | 4.00            | 0.00         |
| 31.00        | 6.24             | 4.00            | 0.00         | 84.00        | 6.24             | 4.00            | 0.00         |
| 32.00        | 6.24             | 4.00            | 0.00         | 85.00        | 6.24             | 4.00            | 0.00         |
| 33.00        | 6.24             | 4.00            | 0.00         | 86.00        | 6.24             | 4.00            | 0.00         |
| 34.00        | 6.24             | 4.00            | 0.00         | 87.00        | 6.24             | 4.00            | 0.00         |
| 35.00        | 6.24             | 4.00            | 0.00         | 88.00        | 6.24             | 4.00            | 0.00         |
| 36.00        | 6.24             | 4.00            | 0.00         | 89.00        | 6.24             | 4.00            | 0.00         |
| 37.00        | 6.24             | 4.00            | 0.00         | 90.00        | 6.24             | 4.00            | 0.00         |
| 38.00        | 6.24             | 4.00            | 0.00         | 91.00        | 6.24             | 4.00            | 0.00         |
| 39.00        | 6.24             | 4.00            | 0.00         | 92.00        | 6.24             | 4.00            | 0.00         |
| 40.00        | 6.24             | 4.00            | 0.00         | 93.00        | 6.24             | 4.00            | 0.00         |
| 41.00        | 6.24             | 4.00            | 0.00         | 94.00        | 6.24             | 4.00            | 0.00         |
| 42.00        | 6.24             | 4.00            | 0.00         | 95.00        | 6.24             | 4.00            | 0.00         |
| 43.00        | 6.24             | 4.00            | 0.00         | 96.00        | 6.24             | 4.00            | 0.00         |
| 44.00        | 6.24             | 4.00            | 0.00         | 97.00        | 6.24             | 4.00            | 0.00         |
| 45.00        | 6.24             | 4.00            | 0.00         | 98.00        | 6.24             | 4.00            | 0.00         |
| 46.00        | 6.24             | 4.00            | 0.00         | 99.00        | 6.24             | 4.00            | 0.00         |
| 47.00        | 6.24             | 4.00            | 0.00         | 100.00       | 6.24             | 4.00            | 0.00         |
| 48.00        | 6.24             | 4.00            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.00            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.00            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.00            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.00            | 0.00         |              |                  |                 |              |

**Summary for Reach 1R: Existing Swale**

Inflow Area = 4.252 ac, 7.24% Impervious, Inflow Depth = 1.84" for 100-yr event  
 Inflow = 4.55 cfs @ 12.05 hrs, Volume= 0.651 af  
 Outflow = 4.55 cfs @ 12.06 hrs, Volume= 0.651 af, Atten= 0%, Lag= 1.0 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 3.18 fps, Min. Travel Time= 1.3 min  
 Avg. Velocity = 0.81 fps, Avg. Travel Time= 5.0 min

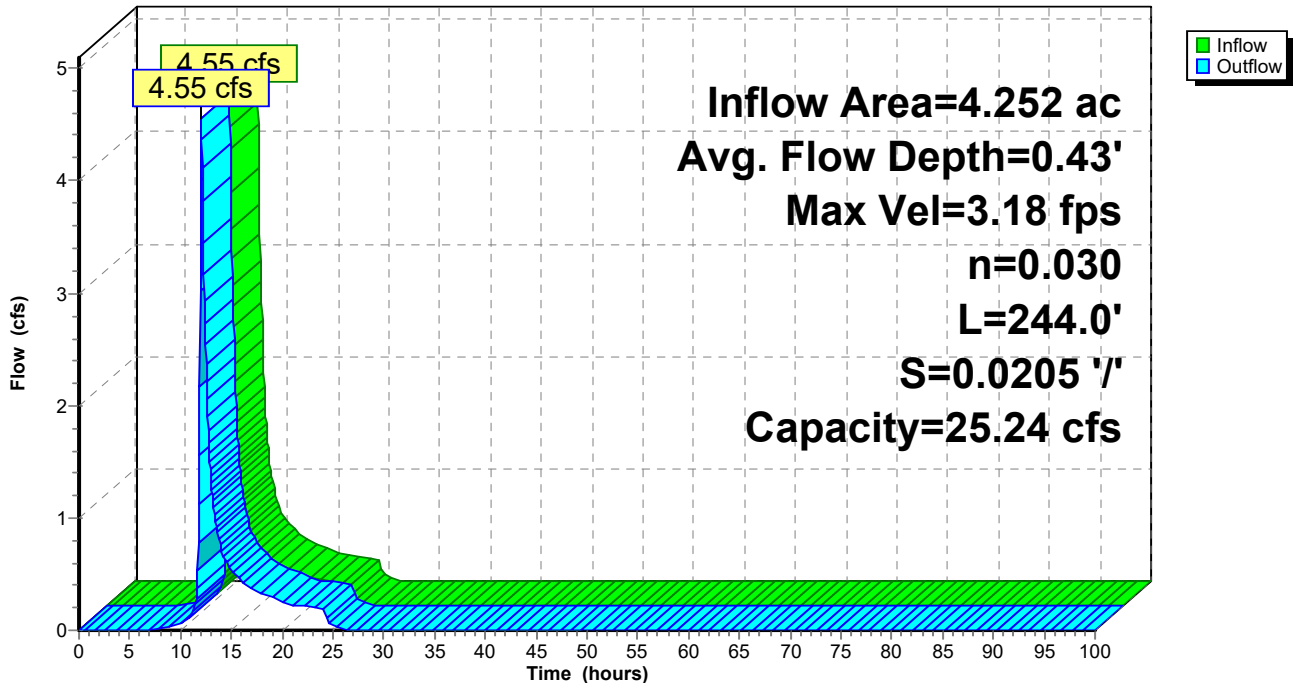
Peak Storage= 348 cf @ 12.06 hrs  
 Average Depth at Peak Storage= 0.43' , Surface Width= 4.60'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 '/' Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 '/'  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

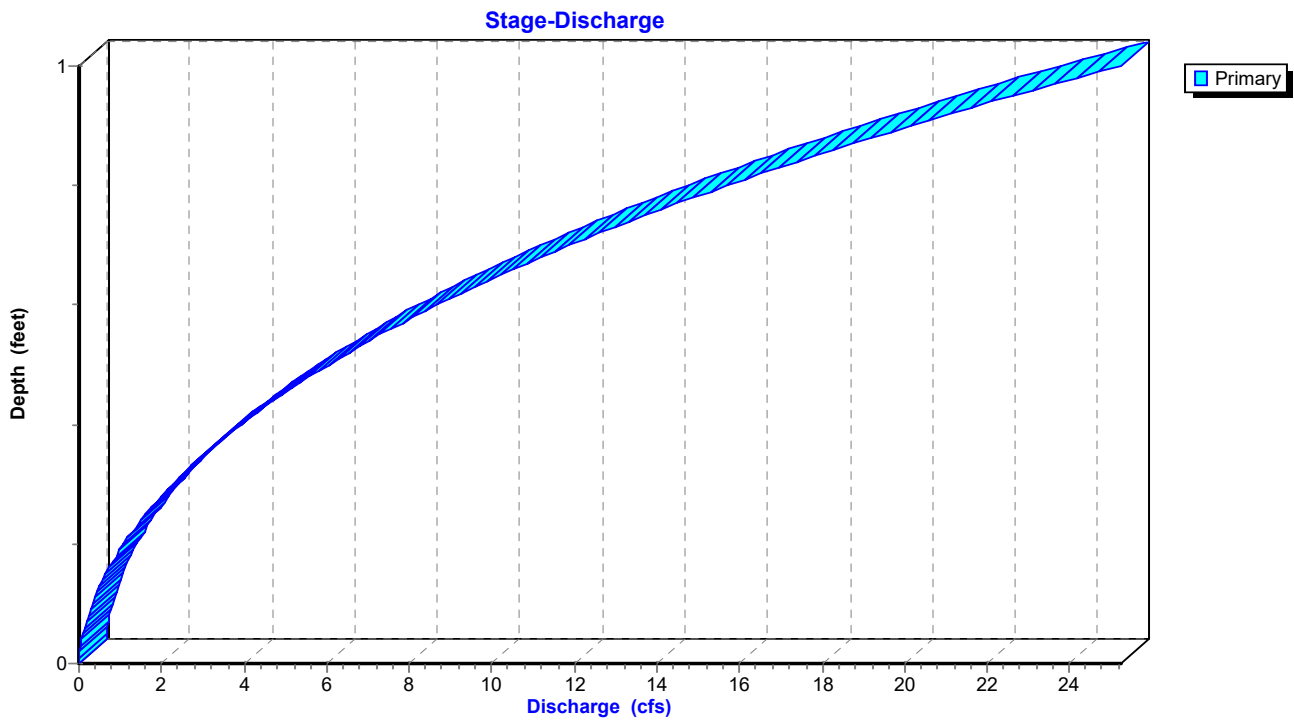


**Reach 1R: Existing Swale**

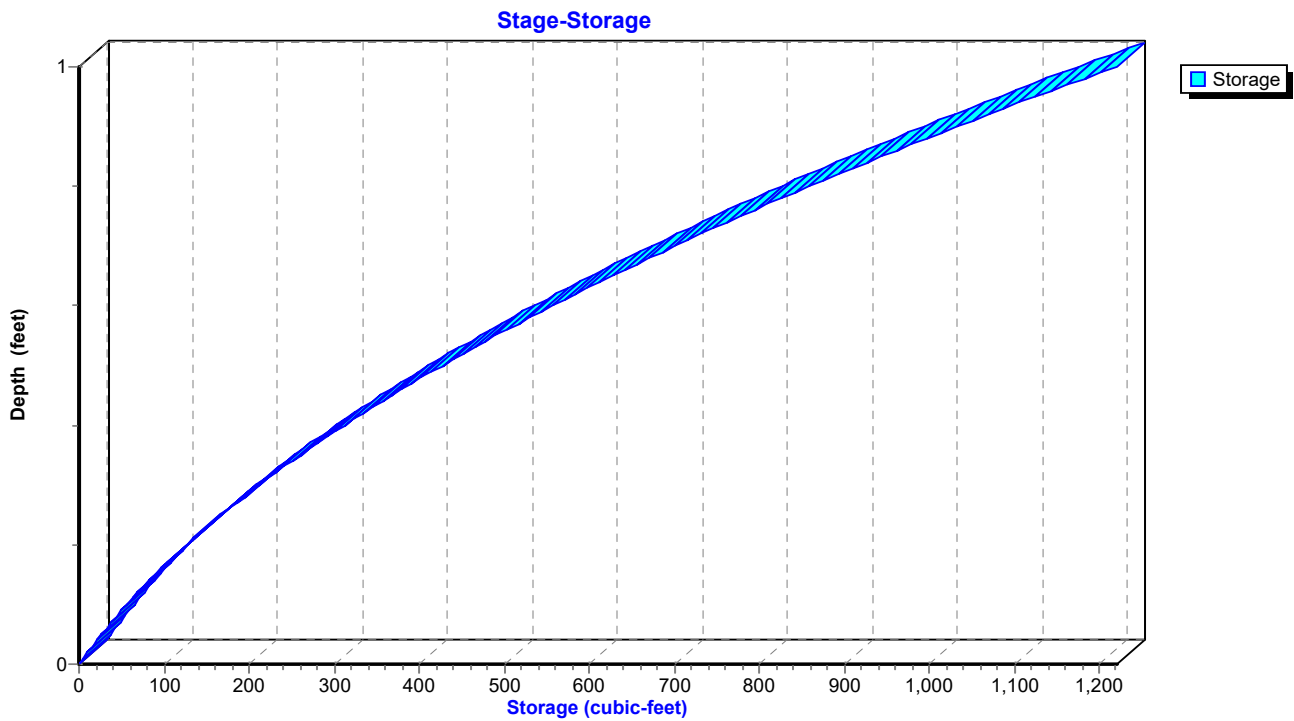
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 316.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 316.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 316.00              | 0.00             |
| 7.50            | 0.01            | 6                       | 316.01              | 0.01             |
| 10.00           | <b>0.06</b>     | <b>19</b>               | <b>316.04</b>       | <b>0.06</b>      |
| 12.50           | <b>2.32</b>     | <b>219</b>              | <b>316.31</b>       | <b>2.38</b>      |
| 15.00           | 0.54            | 79                      | 316.14              | 0.54             |
| 17.50           | 0.35            | 59                      | 316.10              | 0.35             |
| 20.00           | 0.25            | 47                      | 316.09              | 0.25             |
| 22.50           | 0.21            | 43                      | 316.08              | 0.21             |
| 25.00           | 0.03            | 13                      | 316.03              | 0.03             |
| 27.50           | 0.00            | 2                       | 316.00              | 0.00             |
| 30.00           | 0.00            | 1                       | 316.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 316.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 316.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 316.00              | 0.00             |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.413 ac, 8.82% Impervious, Inflow Depth = 1.82" for 100-yr event  
 Inflow = 9.06 cfs @ 12.03 hrs, Volume= 0.519 af  
 Outflow = 2.01 cfs @ 12.30 hrs, Volume= 0.379 af, Atten= 78%, Lag= 16.3 min  
 Primary = 2.01 cfs @ 12.30 hrs, Volume= 0.379 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 316.75' @ 12.30 hrs Surf.Area= 0.219 ac Storage= 0.379 af (0.186 af above start)

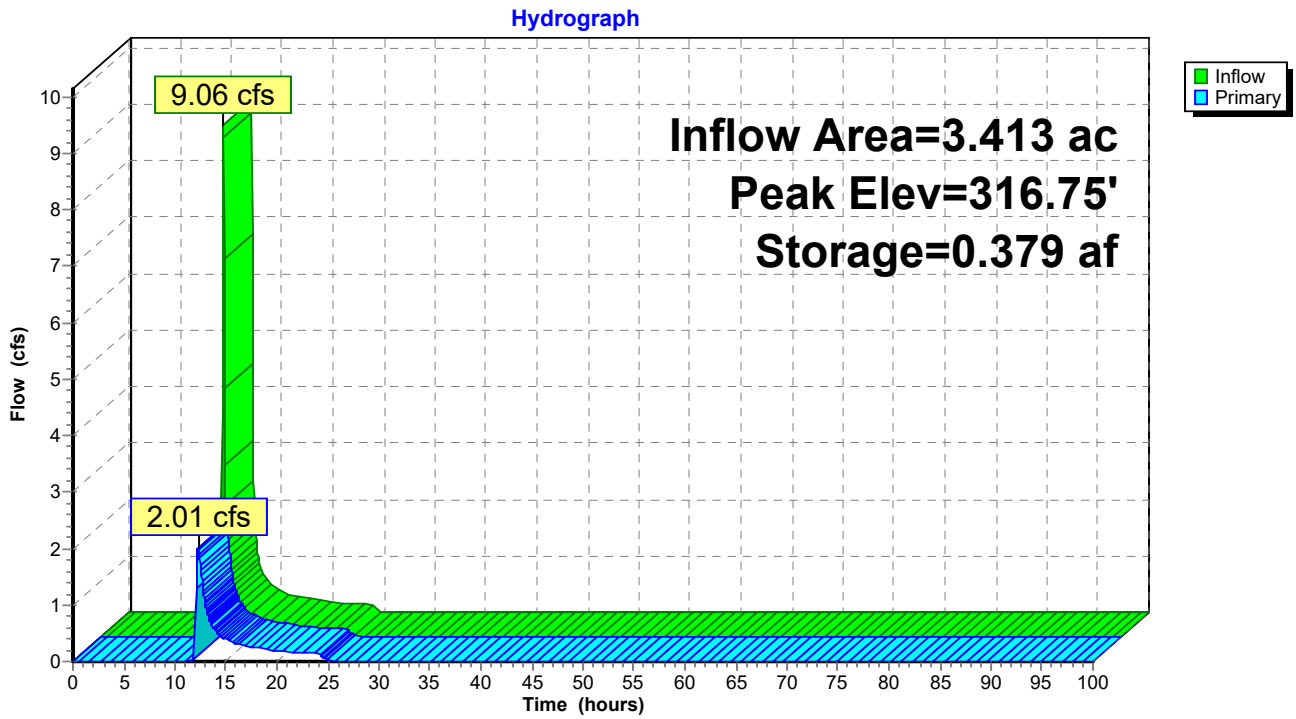
Plug-Flow detention time= 406.0 min calculated for 0.186 af (36% of inflow)  
 Center-of-Mass det. time= 81.5 min ( 950.3 - 868.8 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|
| #1                  | 313.83'              | 0.443 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |
| 313.83              | 0.088                | 271.6            | 0.000  | 0.000                    | 0.088               |
| 314.00              | 0.107                | 290.3            | 0.017  | 0.017                    | 0.107               |
| 315.50              | 0.128                | 309.9            | 0.176  | 0.193                    | 0.131               |
| 316.00              | 0.139                | 319.8            | 0.067  | 0.259                    | 0.143               |
| 316.50              | 0.154                | 348.8            | 0.073  | 0.333                    | 0.179               |
| 317.00              | 0.295                | 446.8            | 0.110  | 0.443                    | 0.321               |

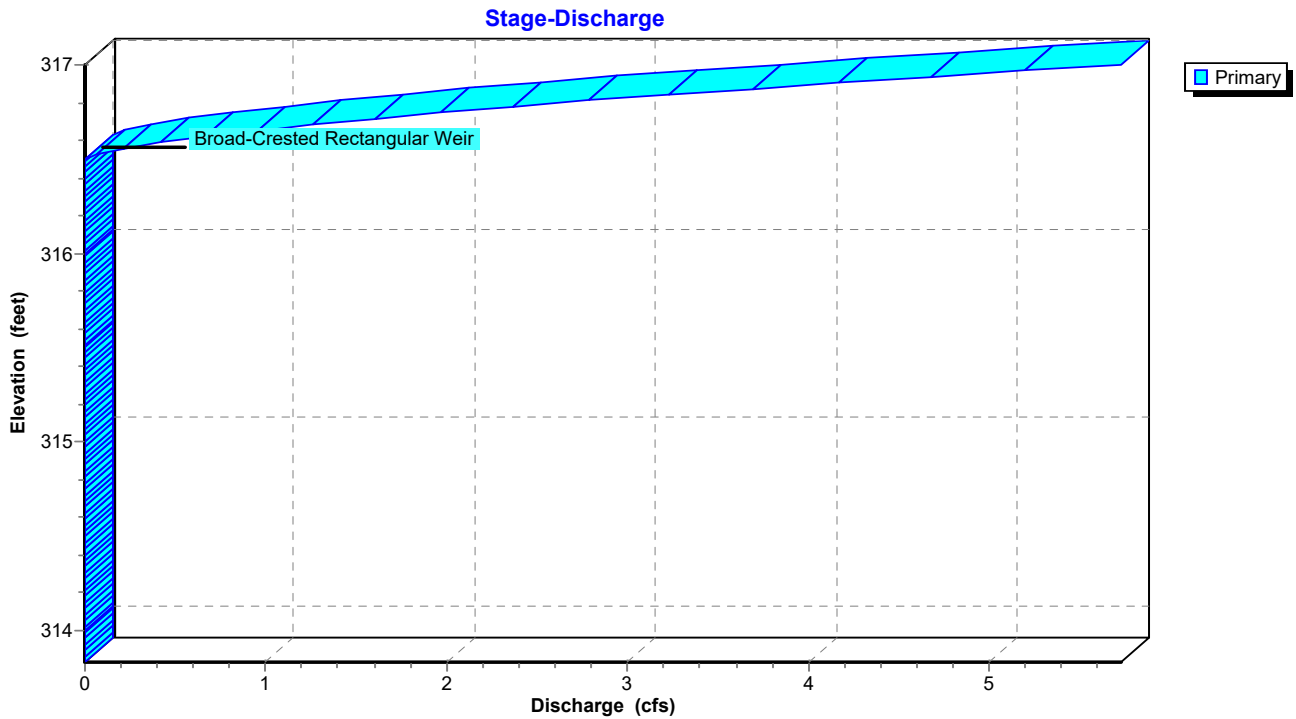
| Device | Routing | Invert  | Outlet Devices  |      |      |      |      |      |      |      |      |
|--------|---------|---------|---|------|------|------|------|------|------|------|------|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |      |      |      |      |      |      |      |      |
|        |         |         | Head (feet)   | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 |
|        |         |         | Coef. (English)   | 2.68 | 2.70 | 2.70 | 2.64 | 2.63 | 2.64 | 2.64 | 2.63 |

**Primary OutFlow** Max=2.01 cfs @ 12.30 hrs HW=316.75' TW=316.36' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 2.01 cfs @ 1.34 fps)

**Pond 1ST: Existing Sediment Trap**

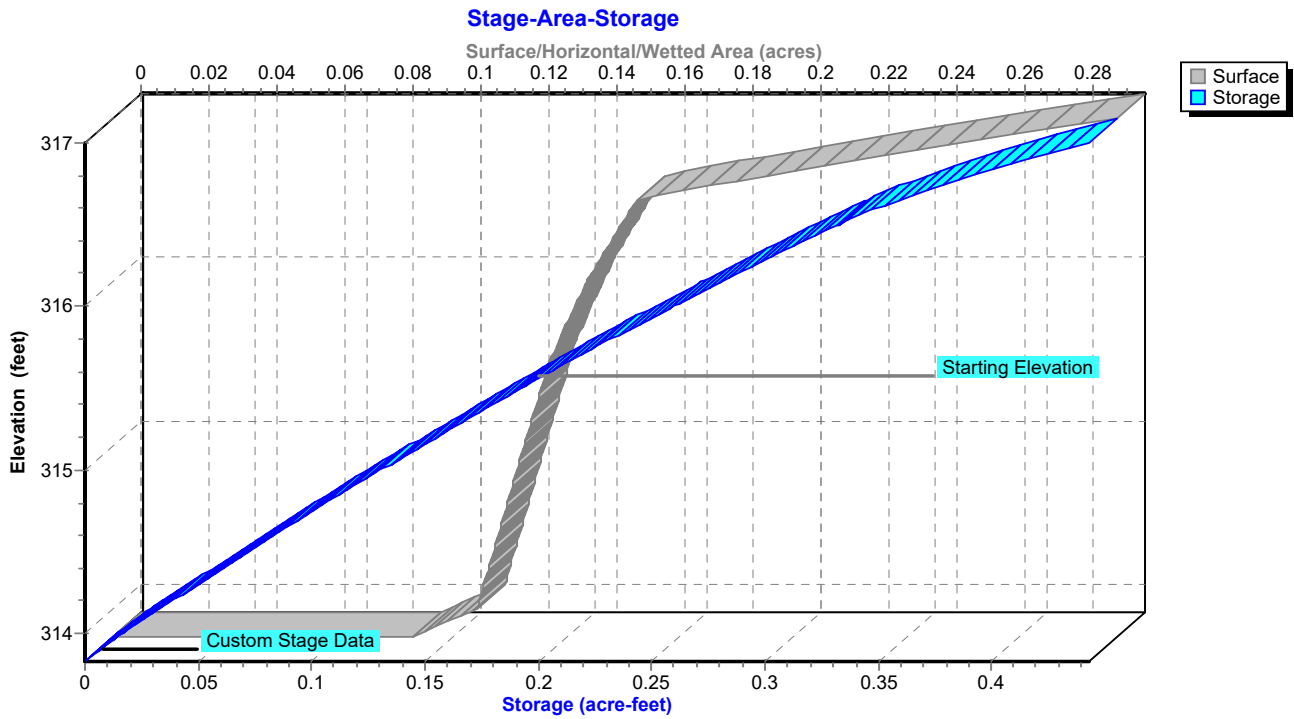


**Pond 1ST: Existing Sediment Trap**





### Pond 1ST: Existing Sediment Trap



**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 2.50            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 5.00            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 7.50            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 10.00           | <b>0.00</b>     | <b>0.193</b>           | <b>315.50</b>       | <b>0.00</b>      |
| 12.50           | <b>1.28</b>     | <b>0.374</b>           | <b>316.73</b>       | <b>1.72</b>      |
| 15.00           | 0.37            | 0.346                  | 316.58              | 0.40             |
| 17.50           | 0.25            | 0.343                  | 316.56              | 0.26             |
| 20.00           | 0.17            | 0.341                  | 316.55              | 0.18             |
| 22.50           | 0.16            | 0.340                  | 316.55              | 0.16             |
| 25.00           | 0.00            | 0.335                  | 316.51              | 0.03             |
| 27.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 30.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 32.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 35.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 37.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 40.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 42.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 45.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 47.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 50.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 52.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 55.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 57.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 60.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 62.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 65.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 67.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 70.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 72.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 75.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 77.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 80.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 82.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 85.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 87.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 90.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 92.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 95.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 97.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 100.00          | 0.00            | 0.333                  | 316.50              | 0.00             |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 2.29" for 100-yr event  
 Inflow = 10.78 cfs @ 12.03 hrs, Volume= 1.014 af  
 Outflow = 9.61 cfs @ 12.08 hrs, Volume= 0.868 af, Atten= 11%, Lag= 3.4 min  
 Primary = 9.61 cfs @ 12.08 hrs, Volume= 0.868 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.65' @ 12.08 hrs Surf.Area= 0.113 ac Storage= 0.206 af (0.195 af above start)

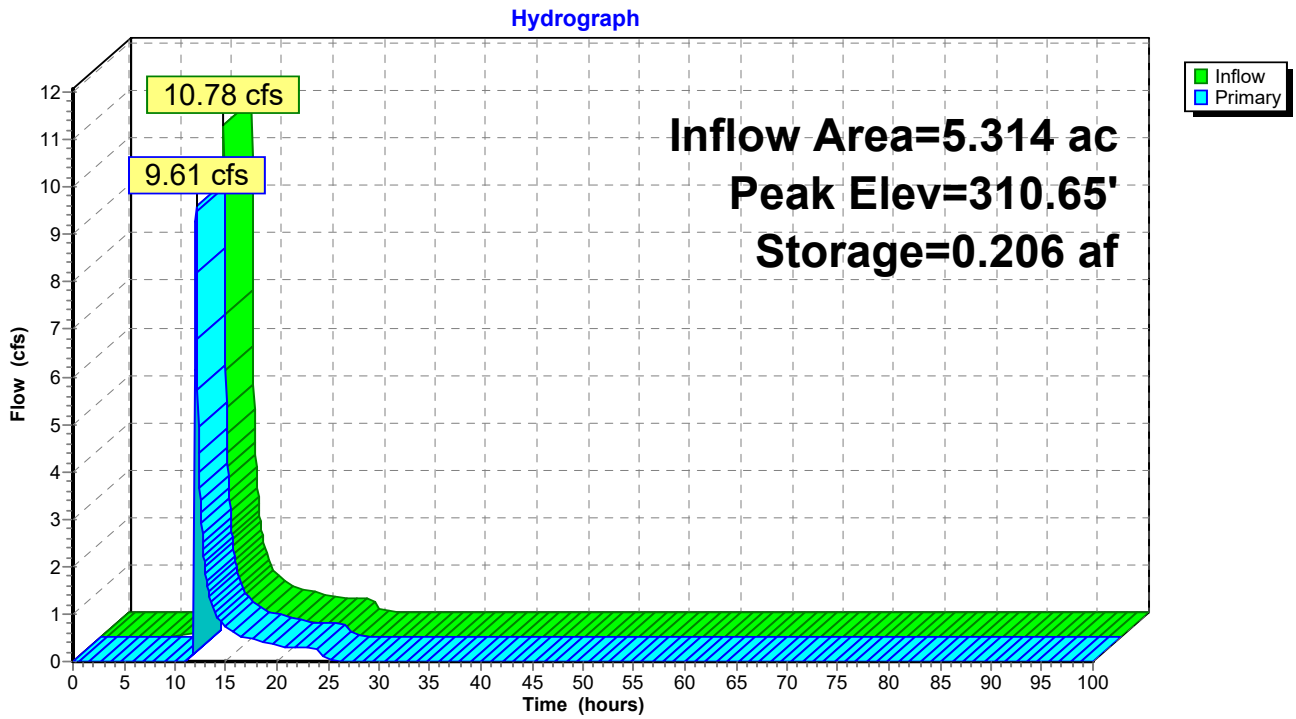
Plug-Flow detention time= 118.9 min calculated for 0.857 af (85% of inflow)  
 Center-of-Mass det. time= 39.8 min ( 905.9 - 866.1 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|
| #1                  | 307.00'              | 0.248 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |
| 307.00              | 0.019                | 188.4            | 0.000  | 0.000                    | 0.019               |
| 307.50              | 0.026                | 206.4            | 0.011  | 0.011                    | 0.032               |
| 308.00              | 0.036                | 232.2            | 0.015  | 0.027                    | 0.053               |
| 309.00              | 0.057                | 269.3            | 0.046  | 0.073                    | 0.087               |
| 310.00              | 0.083                | 316.3            | 0.070  | 0.142                    | 0.138               |
| 311.00              | 0.131                | 434.9            | 0.106  | 0.248                    | 0.301               |

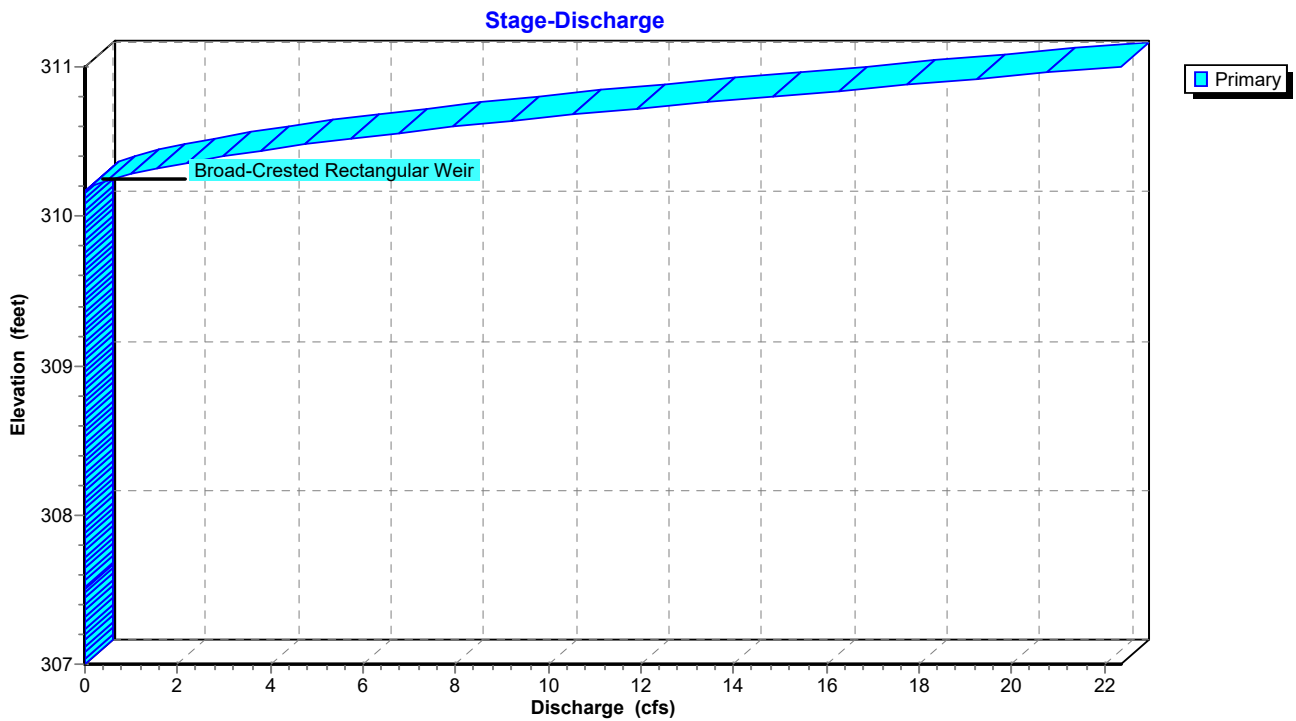
| Device | Routing | Invert  | Outlet Devices  |      |      |      |      |      |      |      |      |      |      |
|--------|---------|---------|---|------|------|------|------|------|------|------|------|------|------|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> |      |      |      |      |      |      |      |      |      |      |
|        |         |         | Head (feet)   | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 |
|        |         |         |   | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 |      |      |      |
|        |         |         | Coef. (English)   | 2.43 | 2.54 | 2.70 | 2.69 | 2.68 | 2.68 | 2.66 | 2.64 | 2.64 |      |
|        |         |         |   | 2.64 | 2.65 | 2.65 | 2.66 | 2.66 | 2.68 | 2.70 | 2.74 |      |      |

**Primary OutFlow** Max=9.43 cfs @ 12.08 hrs HW=310.65' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 9.43 cfs @ 1.80 fps)

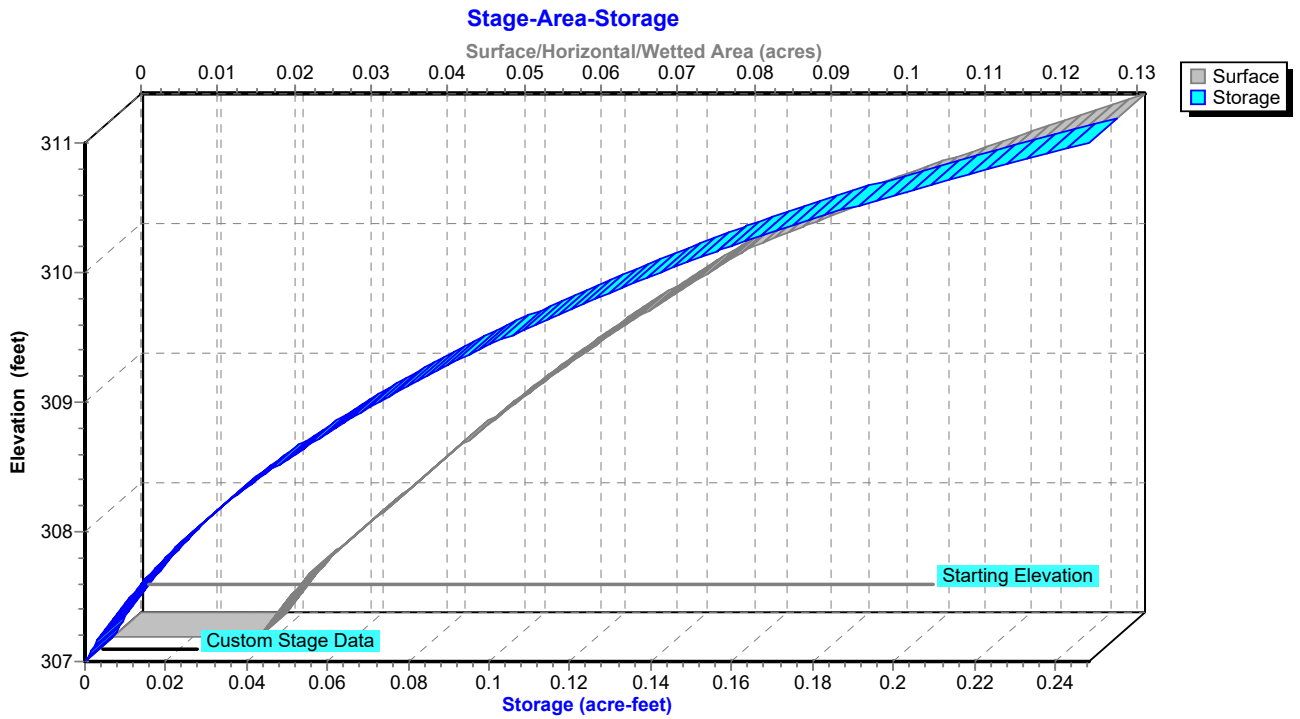
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 2.50            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 5.00            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 7.50            | 0.03            | 0.013                  | 307.56              | 0.00             |
| 10.00           | <b>0.15</b>     | <b>0.029</b>           | <b>308.07</b>       | <b>0.00</b>      |
| 12.50           | <b>3.08</b>     | <b>0.181</b>           | <b>310.42</b>       | <b>3.38</b>      |
| 15.00           | 0.73            | 0.166                  | 310.26              | 0.74             |
| 17.50           | 0.47            | 0.163                  | 310.24              | 0.47             |
| 20.00           | 0.33            | 0.162                  | 310.22              | 0.34             |
| 22.50           | 0.29            | 0.162                  | 310.22              | 0.29             |
| 25.00           | 0.03            | 0.158                  | 310.19              | 0.05             |
| 27.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 30.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 32.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 35.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 37.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 40.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 42.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 45.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 47.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 50.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 52.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 55.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 57.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 60.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 62.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 65.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 67.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 70.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 72.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 75.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 77.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 80.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 82.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 85.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 87.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 90.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 92.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 95.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 97.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 100.00          | 0.00            | 0.157                  | 310.17              | 0.00             |



**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

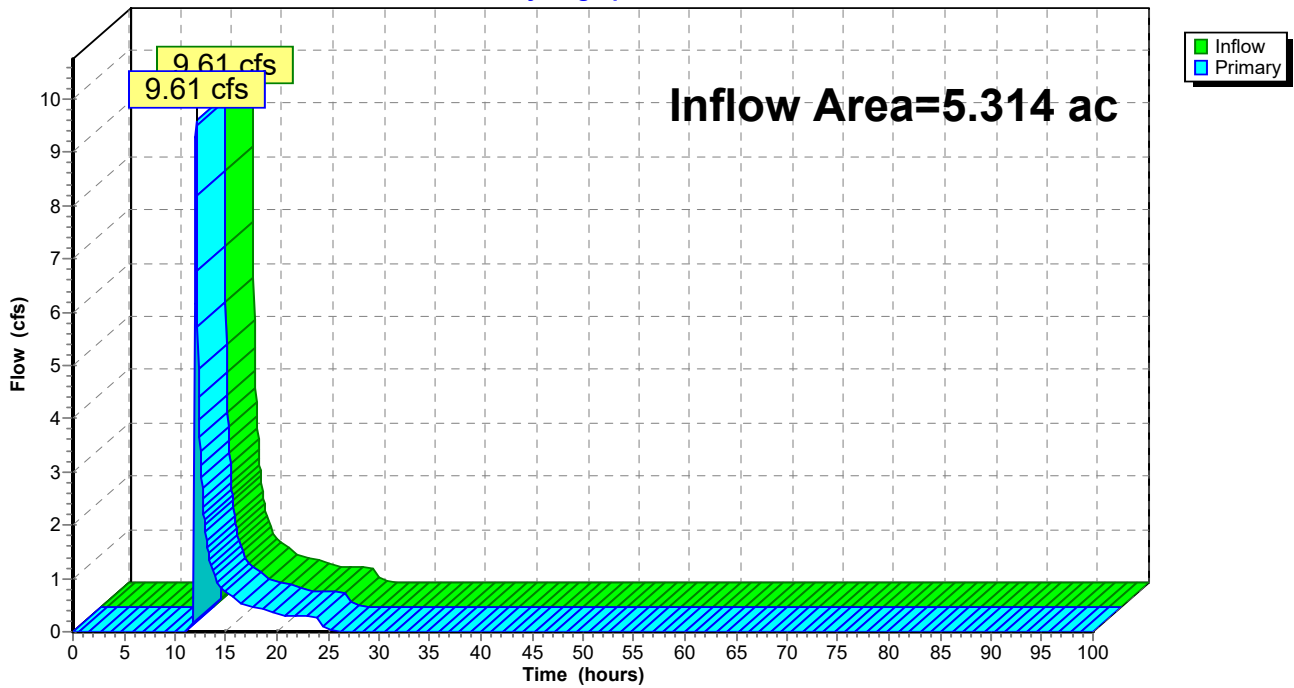
### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.314 ac, 7.88% Impervious, Inflow Depth = 1.96" for 100-yr event  
Inflow = 9.61 cfs @ 12.08 hrs, Volume= 0.868 af  
Primary = 9.61 cfs @ 12.08 hrs, Volume= 0.868 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1

Hydrograph



**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>6.14</b>  | 0.00             | <b>6.14</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>1.82</b>  | 0.00             | <b>1.82</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 1.00         | 0.00             | 1.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.74         | 0.00             | 0.74          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.59         | 0.00             | 0.59          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.50         | 0.00             | 0.50          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.45         | 0.00             | 0.45          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.39         | 0.00             | 0.39          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.34         | 0.00             | 0.34          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.31         | 0.00             | 0.31          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.29         | 0.00             | 0.29          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.28         | 0.00             | 0.28          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.27         | 0.00             | 0.27          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.05         | 0.00             | 0.05          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.01         | 0.00             | 0.01          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.01         | 0.00             | 0.01          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

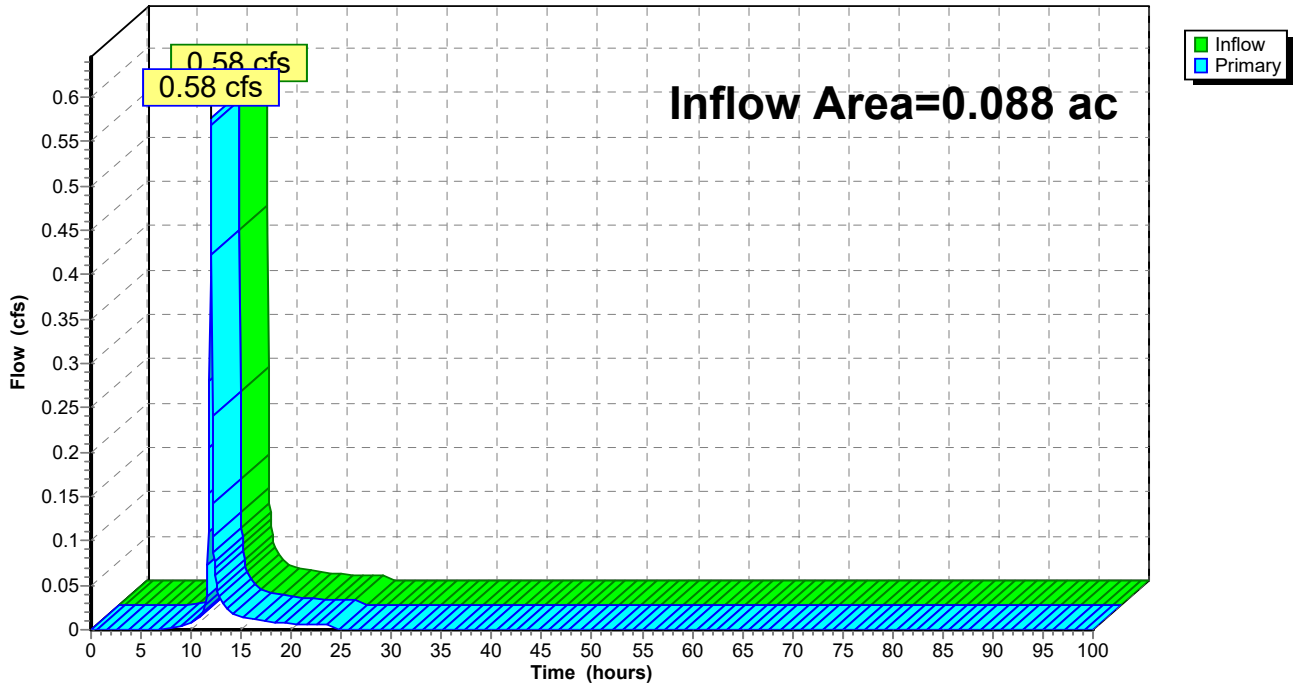
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.088 ac, 0.00% Impervious, Inflow Depth = 4.00" for 100-yr event  
Inflow = 0.58 cfs @ 11.98 hrs, Volume= 0.029 af  
Primary = 0.58 cfs @ 11.98 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.01         | 0.00             | 0.01          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.02         | 0.00             | 0.02          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.57</b>  | 0.00             | <b>0.57</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.03         | 0.00             | 0.03          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.02         | 0.00             | 0.02          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.02         | 0.00             | 0.02          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.01         | 0.00             | 0.01          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.01         | 0.00             | 0.01          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.01         | 0.00             | 0.01          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.01         | 0.00             | 0.01          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.01         | 0.00             | 0.01          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.01         | 0.00             | 0.01          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.01         | 0.00             | 0.01          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.01         | 0.00             | 0.01          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.01         | 0.00             | 0.01          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

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# 1096 Existing Stormwater Conditions Final D Soils Farmstand

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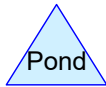
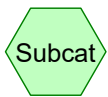
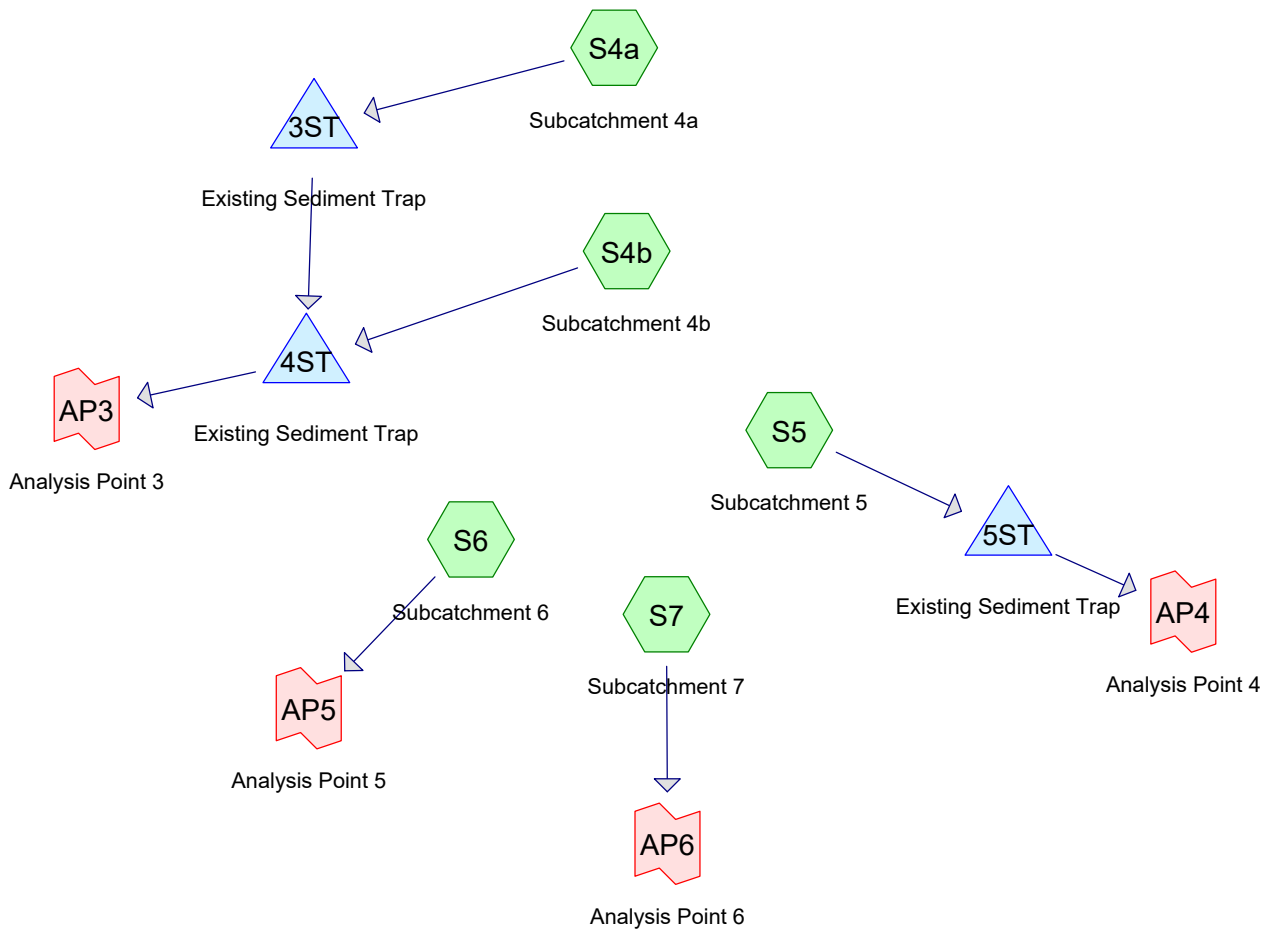
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# 1096 Existing Stormwater Conditions\_Final D Soils Greenhouses

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## Rainfall Events Listing

| Event# | Event Name | Storm Type    | Curve | Mode    | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1      | 1-yr       | Type II 24-hr |       | Default | 24.00            | 1   | 2.24           | 2   |
| 2      | 10-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 3.72           | 2   |
| 3      | 25-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 4.56           | 2   |
| 4      | 100-yr     | Type II 24-hr |       | Default | 24.00            | 1   | 6.24           | 2   |

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## Area Listing (all nodes)

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)              |
|-----------------|-----------|--|
| 0.519           | 39        | >75% Grass cover, Good, HSG A (S4a)                |
| 1.844           | 77        | Fallow, bare soil, HSG A (S4a, S4b, S5, S7)        |
| 2.561           | 94        | Fallow, bare soil, HSG D (S4a, S4b, S5, S7)        |
| 2.756           | 30        | Meadow, non-grazed, HSG A (S4a, S5, S7)            |
| 3.276           | 78        | Meadow, non-grazed, HSG D (S4a, S4b, S6, S7)       |
| 0.351           | 98        | Paved parking, HSG A (S4a)                         |
| 0.470           | 98        | Paved roads, HSG A (S4a)                           |
| 0.105           | 98        | Roofs, HSG A (S4a)                                 |
| 3.248           | 67        | Row crops, straight row, Good, HSG A (S5, S7)      |
| 1.848           | 89        | Row crops, straight row, Good, HSG D (S4b, S5, S7) |
| 0.063           | 98        | Water Surface, HSG A (S4a)                         |
| 0.042           | 98        | Water Surface, HSG D (S4b)                         |
| 5.399           | 30        | Woods, Good, HSG A (S4a, S5)                       |
| 0.725           | 77        | Woods, Good, HSG D (S4a, S4b, S7)                  |
| <b>23.207</b>   | <b>62</b> | <b>TOTAL AREA</b>                                  |

# 1096 Existing Stormwater Conditions\_Final D Soils Greenhouses

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## Soil Listing (all nodes)

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 14.755          | HSG A         | S4a, S4b, S5, S7        |
| 0.000           | HSG B         |                         |
| 0.000           | HSG C         |                         |
| 8.452           | HSG D         | S4a, S4b, S5, S6, S7    |
| 0.000           | Other         |                         |
| <b>23.207</b>   |               | <b>TOTAL AREA</b>       |

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## Ground Covers (all nodes)

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover               | Subcatchment<br>Numbers          |
|------------------|------------------|------------------|------------------|------------------|------------------|-------------------------------|----------------------------------|
| 0.519            | 0.000            | 0.000            | 0.000            | 0.000            | 0.519            | >75% Grass cover, Good        | S4a                              |
| 1.844            | 0.000            | 0.000            | 2.561            | 0.000            | 4.405            | Fallow, bare soil             | S4a,<br>S4b,<br>S5,<br>S7        |
| 2.756            | 0.000            | 0.000            | 3.276            | 0.000            | 6.032            | Meadow, non-grazed            | S4a,<br>S4b,<br>S5,<br>S6,<br>S7 |
| 0.351            | 0.000            | 0.000            | 0.000            | 0.000            | 0.351            | Paved parking                 | S4a                              |
| 0.470            | 0.000            | 0.000            | 0.000            | 0.000            | 0.470            | Paved roads                   | S4a                              |
| 0.105            | 0.000            | 0.000            | 0.000            | 0.000            | 0.105            | Roofs                         | S4a                              |
| 3.248            | 0.000            | 0.000            | 1.848            | 0.000            | 5.096            | Row crops, straight row, Good | S4b,<br>S5,<br>S7                |
| 0.063            | 0.000            | 0.000            | 0.042            | 0.000            | 0.105            | Water Surface                 | S4a,<br>S4b                      |
| 5.399            | 0.000            | 0.000            | 0.725            | 0.000            | 6.124            | Woods, Good                   | S4a,<br>S4b,<br>S5,<br>S7        |
| <b>14.755</b>    | <b>0.000</b>     | <b>0.000</b>     | <b>8.452</b>     | <b>0.000</b>     | <b>23.207</b>    | <b>TOTAL AREA</b>             |                                  |

**1096 Existing Stormwater Conditions\_Final D Soils Gree Type II 24-hr 1-yr Rainfall=2.24"**

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|  |  |
|--|--|
| <b>Subcatchment S4a: Subcatchment 4a</b> | Runoff Area=9.901 ac 9.99% Impervious Runoff Depth=0.02"<br>Flow Length=937' Tc=37.6 min CN=53 Runoff=0.03 cfs 0.019 af                        |
| <b>Subcatchment S4b: Subcatchment 4b</b> | Runoff Area=1.759 ac 2.39% Impervious Runoff Depth=1.16"<br>Flow Length=440' Tc=10.5 min CN=88 Runoff=3.04 cfs 0.170 af                        |
| <b>Subcatchment S5: Subcatchment 5</b>   | Runoff Area=4.455 ac 0.00% Impervious Runoff Depth=0.09"<br>Flow Length=712' Tc=22.0 min CN=59 Runoff=0.07 cfs 0.034 af                        |
| <b>Subcatchment S6: Subcatchment 6</b>   | Runoff Area=0.993 ac 0.00% Impervious Runoff Depth=0.62"<br>Flow Length=664' Tc=50.0 min CN=78 Runoff=0.33 cfs 0.052 af                        |
| <b>Subcatchment S7: Subcatchment 7</b>   | Runoff Area=6.099 ac 0.00% Impervious Runoff Depth=0.31"<br>Flow Length=900' Tc=30.6 min CN=69 Runoff=1.01 cfs 0.157 af                        |
| <b>Pond 3ST: Existing Sediment Trap</b>  | Peak Elev=337.51' Storage=0.188 af Inflow=0.03 cfs 0.019 af<br>Outflow=0.02 cfs 0.009 af   |
| <b>Pond 4ST: Existing Sediment Trap</b>  | Peak Elev=335.69' Storage=0.062 af Inflow=3.04 cfs 0.179 af<br>Outflow=1.77 cfs 0.134 af   |
| <b>Pond 5ST: Existing Sediment Trap</b>  | Peak Elev=327.00' Storage=0.000 af Inflow=0.07 cfs 0.034 af<br>Discarded=0.07 cfs 0.034 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.034 af |
| <b>Link AP3: Analysis Point 3</b>        | Inflow=1.77 cfs 0.134 af<br>Primary=1.77 cfs 0.134 af  |
| <b>Link AP4: Analysis Point 4</b>        | Inflow=0.00 cfs 0.000 af<br>Primary=0.00 cfs 0.000 af  |
| <b>Link AP5: Analysis Point 5</b>        | Inflow=0.33 cfs 0.052 af<br>Primary=0.33 cfs 0.052 af  |
| <b>Link AP6: Analysis Point 6</b>        | Inflow=1.01 cfs 0.157 af<br>Primary=1.01 cfs 0.157 af  |

**Total Runoff Area = 23.207 ac Runoff Volume = 0.432 af Average Runoff Depth = 0.22"**  
**95.56% Pervious = 22.176 ac 4.44% Impervious = 1.031 ac**

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 0.03 cfs @ 18.49 hrs, Volume= 0.019 af, Depth= 0.02"  
 Routed to Pond 3ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.105     | 98 | Roofs, HSG A                  |
| 0.351     | 98 | Paved parking, HSG A          |
| 0.470     | 98 | Paved roads, HSG A            |
| 4.623     | 30 | Woods, Good, HSG A            |
| 0.565     | 77 | Woods, Good, HSG D            |
| 0.682     | 30 | Meadow, non-grazed, HSG A     |
| 1.306     | 78 | Meadow, non-grazed, HSG D     |
| 0.124     | 77 | Fallow, bare soil, HSG A      |
| 0.900     | 94 | Fallow, bare soil, HSG D      |
| 0.519     | 39 | >75% Grass cover, Good, HSG A |
| 0.193     | 30 | Woods, Good, HSG A            |
| 0.063     | 98 | Water Surface, HSG A          |
| 9.901     | 53 | Weighted Average              |
| 8.912     |    | 90.01% Pervious Area          |
| 0.989     |    | 9.99% Impervious Area         |



**1096 Existing Stormwater Conditions\_Final D Soils Gree Type II 24-hr 1-yr Rainfall=2.24"**

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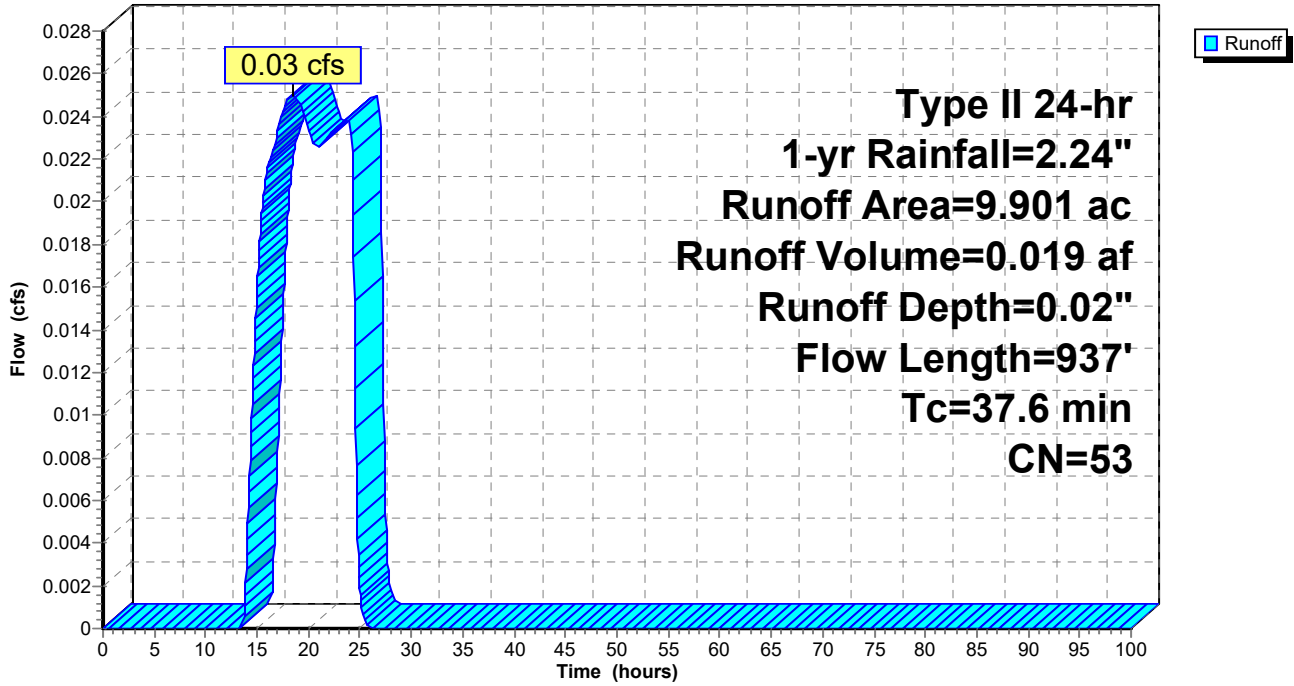
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                    |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"         |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 2.7         | 71               | 0.0039           | 0.44                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.9         | 132              | 0.0032           | 0.57                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 0.2         | 33               | 0.1262           | 2.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.5         | 38               | 0.0271           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 37.6        | 937              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph



**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.02            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.02            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.02            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.02            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.02            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.02            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.02            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.02            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.02            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.02            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.02            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.02            | 0.00         |
| 12.00        | 1.49             | 0.00            | 0.00         | 65.00        | 2.24             | 0.02            | 0.00         |
| 13.00        | 1.73             | 0.00            | 0.00         | 66.00        | 2.24             | 0.02            | 0.00         |
| 14.00        | 1.84             | 0.00            | 0.00         | 67.00        | 2.24             | 0.02            | 0.00         |
| 15.00        | 1.91             | 0.00            | 0.02         | 68.00        | 2.24             | 0.02            | 0.00         |
| 16.00        | 1.97             | 0.00            | 0.02         | 69.00        | 2.24             | 0.02            | 0.00         |
| 17.00        | 2.02             | 0.01            | 0.02         | 70.00        | 2.24             | 0.02            | 0.00         |
| 18.00        | 2.06             | 0.01            | <b>0.02</b>  | 71.00        | 2.24             | 0.02            | 0.00         |
| 19.00        | 2.10             | 0.01            | <b>0.02</b>  | 72.00        | 2.24             | 0.02            | 0.00         |
| 20.00        | 2.13             | 0.01            | 0.02         | 73.00        | 2.24             | 0.02            | 0.00         |
| 21.00        | 2.16             | 0.02            | 0.02         | 74.00        | 2.24             | 0.02            | 0.00         |
| 22.00        | 2.19             | 0.02            | 0.02         | 75.00        | 2.24             | 0.02            | 0.00         |
| 23.00        | 2.21             | 0.02            | 0.02         | 76.00        | 2.24             | 0.02            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.02</b>     | 0.02         | 77.00        | 2.24             | 0.02            | 0.00         |
| 25.00        | 2.24             | 0.02            | 0.00         | 78.00        | 2.24             | 0.02            | 0.00         |
| 26.00        | 2.24             | 0.02            | 0.00         | 79.00        | 2.24             | 0.02            | 0.00         |
| 27.00        | 2.24             | 0.02            | 0.00         | 80.00        | 2.24             | 0.02            | 0.00         |
| 28.00        | 2.24             | 0.02            | 0.00         | 81.00        | 2.24             | 0.02            | 0.00         |
| 29.00        | 2.24             | 0.02            | 0.00         | 82.00        | 2.24             | 0.02            | 0.00         |
| 30.00        | 2.24             | 0.02            | 0.00         | 83.00        | 2.24             | 0.02            | 0.00         |
| 31.00        | 2.24             | 0.02            | 0.00         | 84.00        | 2.24             | 0.02            | 0.00         |
| 32.00        | 2.24             | 0.02            | 0.00         | 85.00        | 2.24             | 0.02            | 0.00         |
| 33.00        | 2.24             | 0.02            | 0.00         | 86.00        | 2.24             | 0.02            | 0.00         |
| 34.00        | 2.24             | 0.02            | 0.00         | 87.00        | 2.24             | 0.02            | 0.00         |
| 35.00        | 2.24             | 0.02            | 0.00         | 88.00        | 2.24             | 0.02            | 0.00         |
| 36.00        | 2.24             | 0.02            | 0.00         | 89.00        | 2.24             | 0.02            | 0.00         |
| 37.00        | 2.24             | 0.02            | 0.00         | 90.00        | 2.24             | 0.02            | 0.00         |
| 38.00        | 2.24             | 0.02            | 0.00         | 91.00        | 2.24             | 0.02            | 0.00         |
| 39.00        | 2.24             | 0.02            | 0.00         | 92.00        | 2.24             | 0.02            | 0.00         |
| 40.00        | 2.24             | 0.02            | 0.00         | 93.00        | 2.24             | 0.02            | 0.00         |
| 41.00        | 2.24             | 0.02            | 0.00         | 94.00        | 2.24             | 0.02            | 0.00         |
| 42.00        | 2.24             | 0.02            | 0.00         | 95.00        | 2.24             | 0.02            | 0.00         |
| 43.00        | 2.24             | 0.02            | 0.00         | 96.00        | 2.24             | 0.02            | 0.00         |
| 44.00        | 2.24             | 0.02            | 0.00         | 97.00        | 2.24             | 0.02            | 0.00         |
| 45.00        | 2.24             | 0.02            | 0.00         | 98.00        | 2.24             | 0.02            | 0.00         |
| 46.00        | 2.24             | 0.02            | 0.00         | 99.00        | 2.24             | 0.02            | 0.00         |
| 47.00        | 2.24             | 0.02            | 0.00         | 100.00       | 2.24             | 0.02            | 0.00         |
| 48.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4b: Subcatchment 4b**

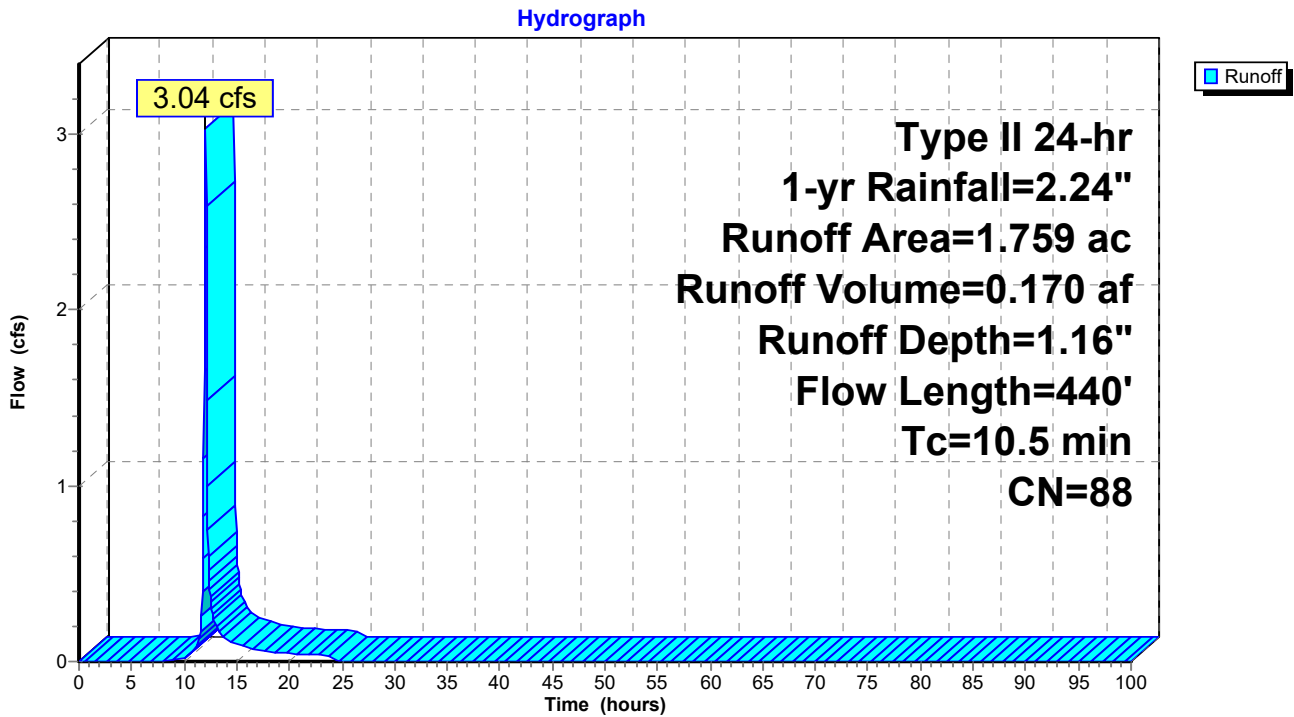
Runoff = 3.04 cfs @ 12.02 hrs, Volume= 0.170 af, Depth= 1.16"  
 Routed to Pond 4ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.106     | 77 | Woods, Good, HSG D                   |
| 0.399     | 78 | Meadow, non-grazed, HSG D            |
| 0.090     | 77 | Fallow, bare soil, HSG A             |
| 0.990     | 94 | Fallow, bare soil, HSG D             |
| 0.132     | 89 | Row crops, straight row, Good, HSG D |
| 0.042     | 98 | Water Surface, HSG D                 |
| 1.759     | 88 | Weighted Average                     |
| 1.717     |    | 97.61% Pervious Area                 |
| 0.042     |    | 2.39% Impervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.9      | 28            | 0.0880        | 0.52              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 1.7      | 31            | 0.0230        | 0.31              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 2.8      | 40            | 0.0110        | 0.24              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 4.1      | 256           | 0.0110        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.7      | 58            | 0.0174        | 1.32              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.3      | 27            | 0.0370        | 1.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 10.5     | 440           | Total         |                   |                |   |

### Subcatchment S4b: Subcatchment 4b



**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 2.24                | 1.16               | 0.00            |
| 1.00            | 0.02                | 0.00               | 0.00            | 54.00           | 2.24                | 1.16               | 0.00            |
| 2.00            | 0.05                | 0.00               | 0.00            | 55.00           | 2.24                | 1.16               | 0.00            |
| 3.00            | 0.08                | 0.00               | 0.00            | 56.00           | 2.24                | 1.16               | 0.00            |
| 4.00            | 0.11                | 0.00               | 0.00            | 57.00           | 2.24                | 1.16               | 0.00            |
| 5.00            | 0.14                | 0.00               | 0.00            | 58.00           | 2.24                | 1.16               | 0.00            |
| 6.00            | 0.18                | 0.00               | 0.00            | 59.00           | 2.24                | 1.16               | 0.00            |
| 7.00            | 0.22                | 0.00               | 0.00            | 60.00           | 2.24                | 1.16               | 0.00            |
| 8.00            | 0.27                | 0.00               | 0.00            | 61.00           | 2.24                | 1.16               | 0.00            |
| 9.00            | 0.33                | 0.00               | 0.01            | 62.00           | 2.24                | 1.16               | 0.00            |
| 10.00           | 0.41                | 0.01               | 0.02            | 63.00           | 2.24                | 1.16               | 0.00            |
| 11.00           | 0.53                | 0.04               | 0.07            | 64.00           | 2.24                | 1.16               | 0.00            |
| 12.00           | 1.49                | 0.57               | <b>2.97</b>     | 65.00           | 2.24                | 1.16               | 0.00            |
| 13.00           | 1.73                | 0.75               | 0.21            | 66.00           | 2.24                | 1.16               | 0.00            |
| 14.00           | 1.84                | 0.84               | 0.12            | 67.00           | 2.24                | 1.16               | 0.00            |
| 15.00           | 1.91                | 0.89               | 0.10            | 68.00           | 2.24                | 1.16               | 0.00            |
| 16.00           | 1.97                | 0.94               | 0.08            | 69.00           | 2.24                | 1.16               | 0.00            |
| 17.00           | 2.02                | 0.98               | 0.07            | 70.00           | 2.24                | 1.16               | 0.00            |
| 18.00           | 2.06                | 1.02               | 0.06            | 71.00           | 2.24                | 1.16               | 0.00            |
| 19.00           | 2.10                | 1.05               | 0.05            | 72.00           | 2.24                | 1.16               | 0.00            |
| 20.00           | 2.13                | 1.07               | 0.04            | 73.00           | 2.24                | 1.16               | 0.00            |
| 21.00           | 2.16                | 1.10               | 0.04            | 74.00           | 2.24                | 1.16               | 0.00            |
| 22.00           | 2.19                | 1.12               | 0.04            | 75.00           | 2.24                | 1.16               | 0.00            |
| 23.00           | 2.21                | 1.14               | 0.04            | 76.00           | 2.24                | 1.16               | 0.00            |
| 24.00           | <b>2.24</b>         | <b>1.16</b>        | 0.04            | 77.00           | 2.24                | 1.16               | 0.00            |
| 25.00           | 2.24                | 1.16               | 0.00            | 78.00           | 2.24                | 1.16               | 0.00            |
| 26.00           | 2.24                | 1.16               | 0.00            | 79.00           | 2.24                | 1.16               | 0.00            |
| 27.00           | 2.24                | 1.16               | 0.00            | 80.00           | 2.24                | 1.16               | 0.00            |
| 28.00           | 2.24                | 1.16               | 0.00            | 81.00           | 2.24                | 1.16               | 0.00            |
| 29.00           | 2.24                | 1.16               | 0.00            | 82.00           | 2.24                | 1.16               | 0.00            |
| 30.00           | 2.24                | 1.16               | 0.00            | 83.00           | 2.24                | 1.16               | 0.00            |
| 31.00           | 2.24                | 1.16               | 0.00            | 84.00           | 2.24                | 1.16               | 0.00            |
| 32.00           | 2.24                | 1.16               | 0.00            | 85.00           | 2.24                | 1.16               | 0.00            |
| 33.00           | 2.24                | 1.16               | 0.00            | 86.00           | 2.24                | 1.16               | 0.00            |
| 34.00           | 2.24                | 1.16               | 0.00            | 87.00           | 2.24                | 1.16               | 0.00            |
| 35.00           | 2.24                | 1.16               | 0.00            | 88.00           | 2.24                | 1.16               | 0.00            |
| 36.00           | 2.24                | 1.16               | 0.00            | 89.00           | 2.24                | 1.16               | 0.00            |
| 37.00           | 2.24                | 1.16               | 0.00            | 90.00           | 2.24                | 1.16               | 0.00            |
| 38.00           | 2.24                | 1.16               | 0.00            | 91.00           | 2.24                | 1.16               | 0.00            |
| 39.00           | 2.24                | 1.16               | 0.00            | 92.00           | 2.24                | 1.16               | 0.00            |
| 40.00           | 2.24                | 1.16               | 0.00            | 93.00           | 2.24                | 1.16               | 0.00            |
| 41.00           | 2.24                | 1.16               | 0.00            | 94.00           | 2.24                | 1.16               | 0.00            |
| 42.00           | 2.24                | 1.16               | 0.00            | 95.00           | 2.24                | 1.16               | 0.00            |
| 43.00           | 2.24                | 1.16               | 0.00            | 96.00           | 2.24                | 1.16               | 0.00            |
| 44.00           | 2.24                | 1.16               | 0.00            | 97.00           | 2.24                | 1.16               | 0.00            |
| 45.00           | 2.24                | 1.16               | 0.00            | 98.00           | 2.24                | 1.16               | 0.00            |
| 46.00           | 2.24                | 1.16               | 0.00            | 99.00           | 2.24                | 1.16               | 0.00            |
| 47.00           | 2.24                | 1.16               | 0.00            | 100.00          | 2.24                | 1.16               | 0.00            |
| 48.00           | 2.24                | 1.16               | 0.00            |                 |                     |                    |                 |
| 49.00           | 2.24                | 1.16               | 0.00            |                 |                     |                    |                 |
| 50.00           | 2.24                | 1.16               | 0.00            |                 |                     |                    |                 |
| 51.00           | 2.24                | 1.16               | 0.00            |                 |                     |                    |                 |
| 52.00           | 2.24                | 1.16               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S5: Subcatchment 5**

Runoff = 0.07 cfs @ 12.60 hrs, Volume= 0.034 af, Depth= 0.09"  
 Routed to Pond 5ST : Existing Sediment Trap

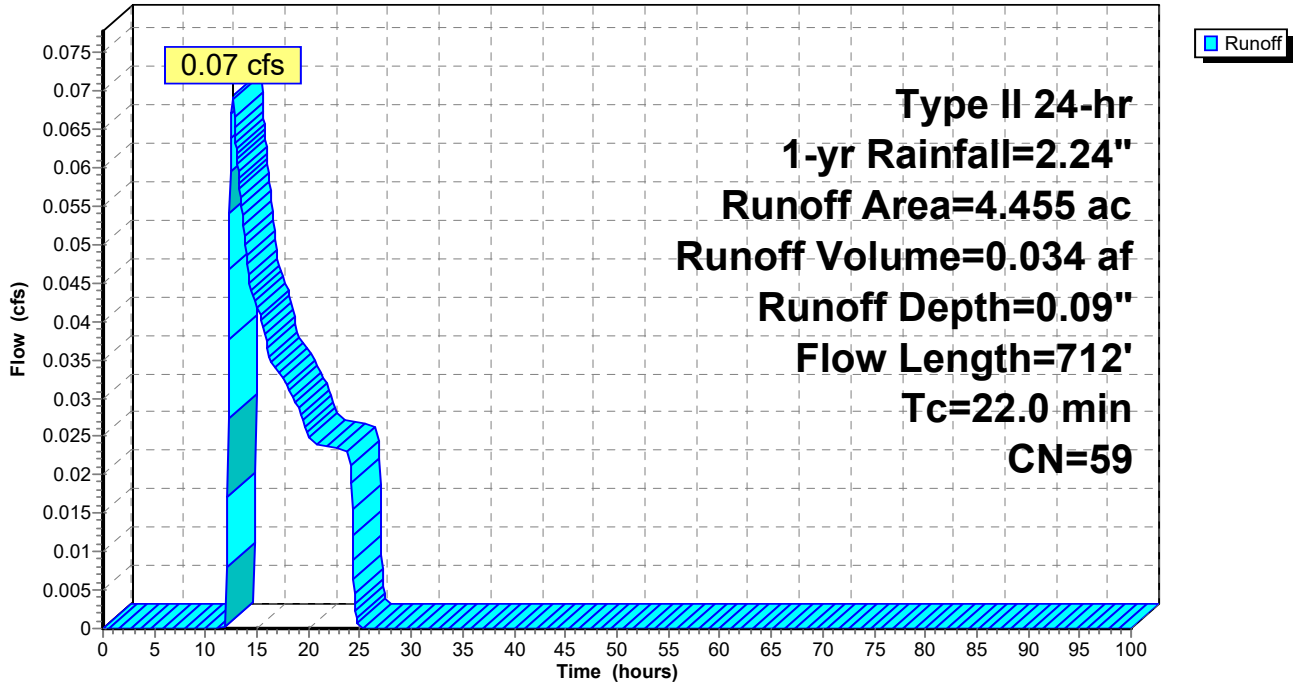
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.583     | 30 | Woods, Good, HSG A                   |
| 0.823     | 30 | Meadow, non-grazed, HSG A            |
| 1.339     | 77 | Fallow, bare soil, HSG A             |
| 0.095     | 94 | Fallow, bare soil, HSG D             |
| 1.532     | 67 | Row crops, straight row, Good, HSG A |
| 0.083     | 89 | Row crops, straight row, Good, HSG D |
| 4.455     | 59 | Weighted Average                     |
| 4.455     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.1     | 44            | 0.0120        | 0.07              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59"                    |
| 3.5      | 56            | 0.0117        | 0.26              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.3      | 17            | 0.0095        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.9      | 40            | 0.0113        | 0.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.7      | 230           | 0.0105        | 1.02              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.4      | 50            | 0.0402        | 2.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.5      | 113           | 0.0156        | 1.25              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.4      | 124           | 0.0230        | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 25            | 0.0940        | 3.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 13            | 0.0790        | 2.81              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 22.0     | 712           | Total         |                   |                |   |

### Subcatchment S5: Subcatchment 5

Hydrograph





**Hydrograph for Subcatchment S5: Subcatchment 5**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.09            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.09            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.09            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.09            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.09            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.09            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.09            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.09            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.09            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.09            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.09            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.09            | 0.00         |
| 12.00        | 1.49             | 0.00            | <b>0.00</b>  | 65.00        | 2.24             | 0.09            | 0.00         |
| 13.00        | 1.73             | 0.02            | <b>0.06</b>  | 66.00        | 2.24             | 0.09            | 0.00         |
| 14.00        | 1.84             | 0.03            | 0.05         | 67.00        | 2.24             | 0.09            | 0.00         |
| 15.00        | 1.91             | 0.04            | 0.04         | 68.00        | 2.24             | 0.09            | 0.00         |
| 16.00        | 1.97             | 0.04            | 0.04         | 69.00        | 2.24             | 0.09            | 0.00         |
| 17.00        | 2.02             | 0.05            | 0.03         | 70.00        | 2.24             | 0.09            | 0.00         |
| 18.00        | 2.06             | 0.06            | 0.03         | 71.00        | 2.24             | 0.09            | 0.00         |
| 19.00        | 2.10             | 0.07            | 0.03         | 72.00        | 2.24             | 0.09            | 0.00         |
| 20.00        | 2.13             | 0.07            | 0.03         | 73.00        | 2.24             | 0.09            | 0.00         |
| 21.00        | 2.16             | 0.08            | 0.02         | 74.00        | 2.24             | 0.09            | 0.00         |
| 22.00        | 2.19             | 0.08            | 0.02         | 75.00        | 2.24             | 0.09            | 0.00         |
| 23.00        | 2.21             | 0.09            | 0.02         | 76.00        | 2.24             | 0.09            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.09</b>     | 0.02         | 77.00        | 2.24             | 0.09            | 0.00         |
| 25.00        | 2.24             | 0.09            | 0.00         | 78.00        | 2.24             | 0.09            | 0.00         |
| 26.00        | 2.24             | 0.09            | 0.00         | 79.00        | 2.24             | 0.09            | 0.00         |
| 27.00        | 2.24             | 0.09            | 0.00         | 80.00        | 2.24             | 0.09            | 0.00         |
| 28.00        | 2.24             | 0.09            | 0.00         | 81.00        | 2.24             | 0.09            | 0.00         |
| 29.00        | 2.24             | 0.09            | 0.00         | 82.00        | 2.24             | 0.09            | 0.00         |
| 30.00        | 2.24             | 0.09            | 0.00         | 83.00        | 2.24             | 0.09            | 0.00         |
| 31.00        | 2.24             | 0.09            | 0.00         | 84.00        | 2.24             | 0.09            | 0.00         |
| 32.00        | 2.24             | 0.09            | 0.00         | 85.00        | 2.24             | 0.09            | 0.00         |
| 33.00        | 2.24             | 0.09            | 0.00         | 86.00        | 2.24             | 0.09            | 0.00         |
| 34.00        | 2.24             | 0.09            | 0.00         | 87.00        | 2.24             | 0.09            | 0.00         |
| 35.00        | 2.24             | 0.09            | 0.00         | 88.00        | 2.24             | 0.09            | 0.00         |
| 36.00        | 2.24             | 0.09            | 0.00         | 89.00        | 2.24             | 0.09            | 0.00         |
| 37.00        | 2.24             | 0.09            | 0.00         | 90.00        | 2.24             | 0.09            | 0.00         |
| 38.00        | 2.24             | 0.09            | 0.00         | 91.00        | 2.24             | 0.09            | 0.00         |
| 39.00        | 2.24             | 0.09            | 0.00         | 92.00        | 2.24             | 0.09            | 0.00         |
| 40.00        | 2.24             | 0.09            | 0.00         | 93.00        | 2.24             | 0.09            | 0.00         |
| 41.00        | 2.24             | 0.09            | 0.00         | 94.00        | 2.24             | 0.09            | 0.00         |
| 42.00        | 2.24             | 0.09            | 0.00         | 95.00        | 2.24             | 0.09            | 0.00         |
| 43.00        | 2.24             | 0.09            | 0.00         | 96.00        | 2.24             | 0.09            | 0.00         |
| 44.00        | 2.24             | 0.09            | 0.00         | 97.00        | 2.24             | 0.09            | 0.00         |
| 45.00        | 2.24             | 0.09            | 0.00         | 98.00        | 2.24             | 0.09            | 0.00         |
| 46.00        | 2.24             | 0.09            | 0.00         | 99.00        | 2.24             | 0.09            | 0.00         |
| 47.00        | 2.24             | 0.09            | 0.00         | 100.00       | 2.24             | 0.09            | 0.00         |
| 48.00        | 2.24             | 0.09            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.09            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.09            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.09            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.09            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S6: Subcatchment 6**

Runoff = 0.33 cfs @ 12.55 hrs, Volume= 0.052 af, Depth= 0.62"  
 Routed to Link AP5 : Analysis Point 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

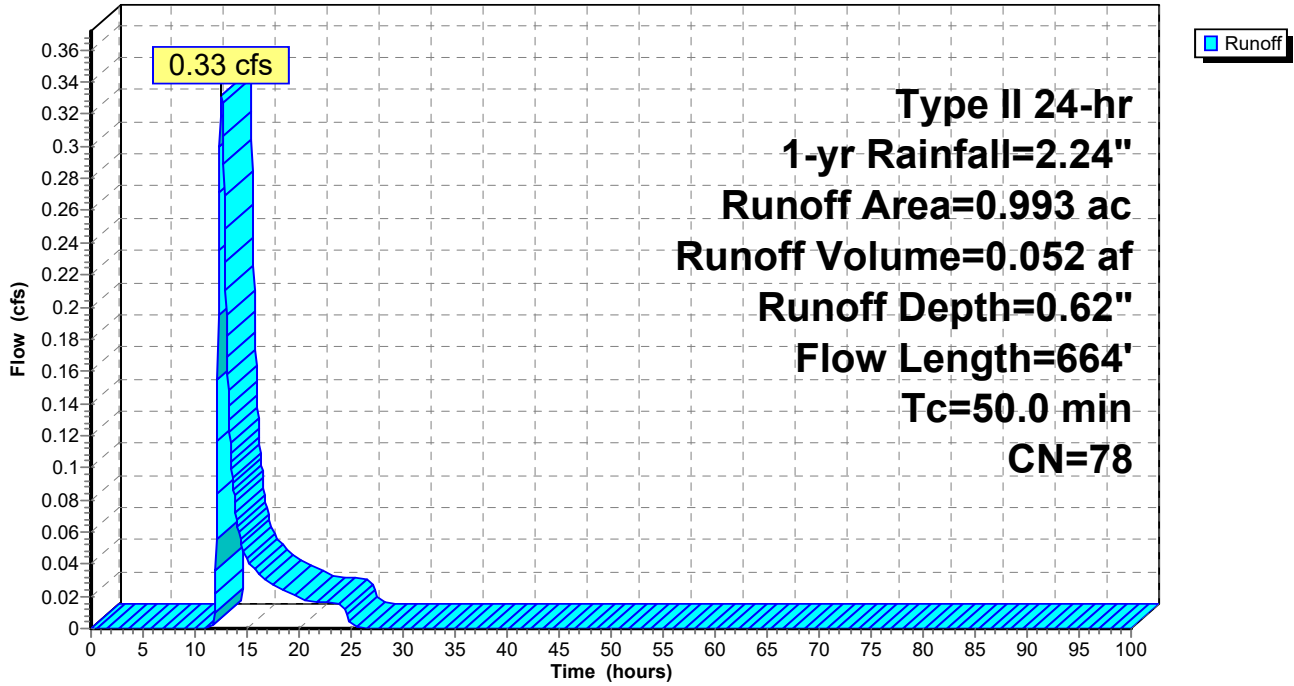
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.993     | 78 | Meadow, non-grazed, HSG D |
| 0.993     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 29.0     | 100           | 0.0013        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.4      | 10            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.6      | 15            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.3      | 9             | 0.0057        | 0.53              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0083        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 209           | 0.0047        | 0.48              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2      | 81            | 0.0244        | 1.09              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 50.0     | 664           | Total         |                   |                |   |

### Subcatchment S6: Subcatchment 6

Hydrograph



**Hydrograph for Subcatchment S6: Subcatchment 6**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.62            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.62            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.62            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.62            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.62            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.62            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.62            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.62            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.62            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.62            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.62            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.62            | 0.00         |
| 12.00        | 1.49             | 0.23            | <b>0.04</b>  | 65.00        | 2.24             | 0.62            | 0.00         |
| 13.00        | 1.73             | 0.34            | <b>0.20</b>  | 66.00        | 2.24             | 0.62            | 0.00         |
| 14.00        | 1.84             | 0.40            | 0.07         | 67.00        | 2.24             | 0.62            | 0.00         |
| 15.00        | 1.91             | 0.44            | 0.04         | 68.00        | 2.24             | 0.62            | 0.00         |
| 16.00        | 1.97             | 0.47            | 0.03         | 69.00        | 2.24             | 0.62            | 0.00         |
| 17.00        | 2.02             | 0.50            | 0.03         | 70.00        | 2.24             | 0.62            | 0.00         |
| 18.00        | 2.06             | 0.52            | 0.03         | 71.00        | 2.24             | 0.62            | 0.00         |
| 19.00        | 2.10             | 0.54            | 0.02         | 72.00        | 2.24             | 0.62            | 0.00         |
| 20.00        | 2.13             | 0.56            | 0.02         | 73.00        | 2.24             | 0.62            | 0.00         |
| 21.00        | 2.16             | 0.58            | 0.02         | 74.00        | 2.24             | 0.62            | 0.00         |
| 22.00        | 2.19             | 0.59            | 0.02         | 75.00        | 2.24             | 0.62            | 0.00         |
| 23.00        | 2.21             | 0.61            | 0.02         | 76.00        | 2.24             | 0.62            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.62</b>     | 0.02         | 77.00        | 2.24             | 0.62            | 0.00         |
| 25.00        | 2.24             | 0.62            | 0.00         | 78.00        | 2.24             | 0.62            | 0.00         |
| 26.00        | 2.24             | 0.62            | 0.00         | 79.00        | 2.24             | 0.62            | 0.00         |
| 27.00        | 2.24             | 0.62            | 0.00         | 80.00        | 2.24             | 0.62            | 0.00         |
| 28.00        | 2.24             | 0.62            | 0.00         | 81.00        | 2.24             | 0.62            | 0.00         |
| 29.00        | 2.24             | 0.62            | 0.00         | 82.00        | 2.24             | 0.62            | 0.00         |
| 30.00        | 2.24             | 0.62            | 0.00         | 83.00        | 2.24             | 0.62            | 0.00         |
| 31.00        | 2.24             | 0.62            | 0.00         | 84.00        | 2.24             | 0.62            | 0.00         |
| 32.00        | 2.24             | 0.62            | 0.00         | 85.00        | 2.24             | 0.62            | 0.00         |
| 33.00        | 2.24             | 0.62            | 0.00         | 86.00        | 2.24             | 0.62            | 0.00         |
| 34.00        | 2.24             | 0.62            | 0.00         | 87.00        | 2.24             | 0.62            | 0.00         |
| 35.00        | 2.24             | 0.62            | 0.00         | 88.00        | 2.24             | 0.62            | 0.00         |
| 36.00        | 2.24             | 0.62            | 0.00         | 89.00        | 2.24             | 0.62            | 0.00         |
| 37.00        | 2.24             | 0.62            | 0.00         | 90.00        | 2.24             | 0.62            | 0.00         |
| 38.00        | 2.24             | 0.62            | 0.00         | 91.00        | 2.24             | 0.62            | 0.00         |
| 39.00        | 2.24             | 0.62            | 0.00         | 92.00        | 2.24             | 0.62            | 0.00         |
| 40.00        | 2.24             | 0.62            | 0.00         | 93.00        | 2.24             | 0.62            | 0.00         |
| 41.00        | 2.24             | 0.62            | 0.00         | 94.00        | 2.24             | 0.62            | 0.00         |
| 42.00        | 2.24             | 0.62            | 0.00         | 95.00        | 2.24             | 0.62            | 0.00         |
| 43.00        | 2.24             | 0.62            | 0.00         | 96.00        | 2.24             | 0.62            | 0.00         |
| 44.00        | 2.24             | 0.62            | 0.00         | 97.00        | 2.24             | 0.62            | 0.00         |
| 45.00        | 2.24             | 0.62            | 0.00         | 98.00        | 2.24             | 0.62            | 0.00         |
| 46.00        | 2.24             | 0.62            | 0.00         | 99.00        | 2.24             | 0.62            | 0.00         |
| 47.00        | 2.24             | 0.62            | 0.00         | 100.00       | 2.24             | 0.62            | 0.00         |
| 48.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S7: Subcatchment 7**

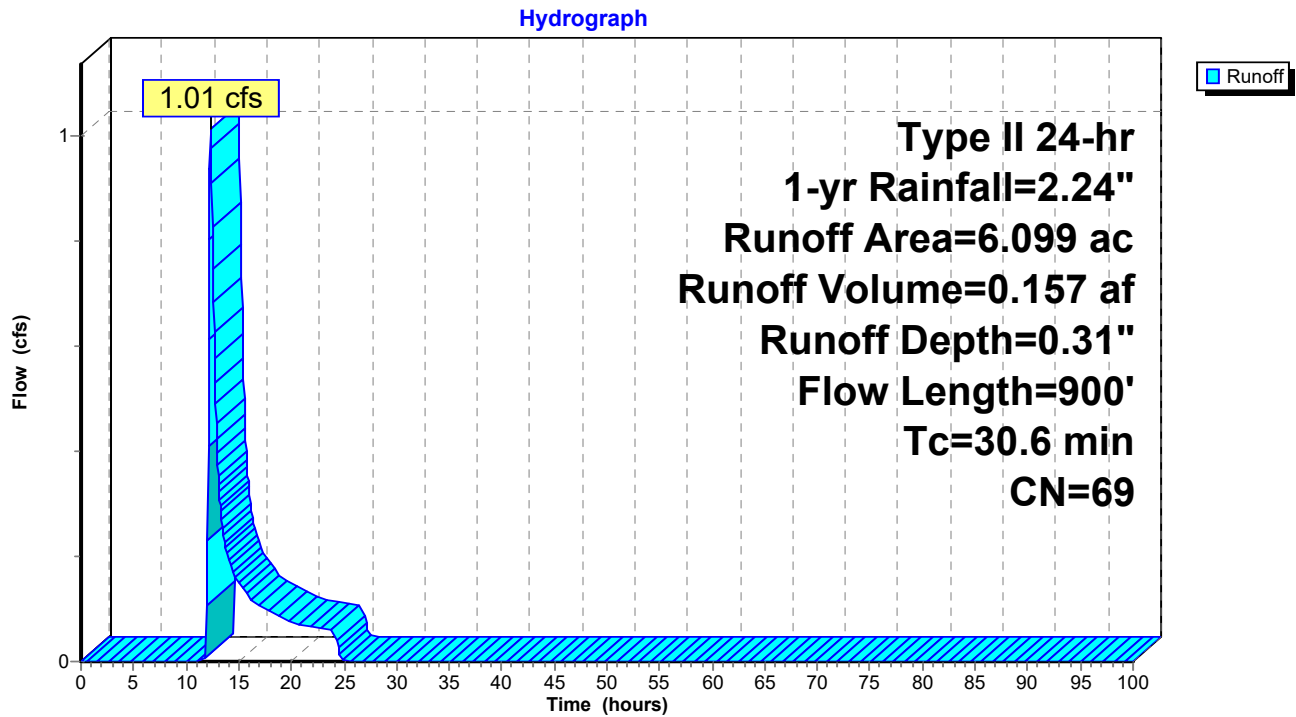
Runoff = 1.01 cfs @ 12.34 hrs, Volume= 0.157 af, Depth= 0.31"  
 Routed to Link AP6 : Analysis Point 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.054     | 77 | Woods, Good, HSG D                   |
| 1.251     | 30 | Meadow, non-grazed, HSG A            |
| 0.578     | 78 | Meadow, non-grazed, HSG D            |
| 0.291     | 77 | Fallow, bare soil, HSG A             |
| 0.576     | 94 | Fallow, bare soil, HSG D             |
| 1.716     | 67 | Row crops, straight row, Good, HSG A |
| 1.633     | 89 | Row crops, straight row, Good, HSG D |
| 6.099     | 69 | Weighted Average                     |
| 6.099     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 13.2     | 100           | 0.0158        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Cultivated: Residue>20% n= 0.170 P2= 2.59"          |
| 4.9      | 348           | 0.0170        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 1.3      | 83            | 0.0137        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 2.5      | 51            | 0.0012        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 1.6      | 56            | 0.0044        | 0.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 0.9      | 24            | 0.0021        | 0.46              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 6.2      | 238           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps      |
| 30.6     | 900           | Total         |                   |                |  |

### Subcatchment S7: Subcatchment 7



**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.31            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.31            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.31            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.31            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.31            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.31            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.31            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.31            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.31            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.31            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.31            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.31            | 0.00         |
| 12.00        | 1.49             | 0.07            | <b>0.11</b>  | 65.00        | 2.24             | 0.31            | 0.00         |
| 13.00        | 1.73             | 0.13            | <b>0.37</b>  | 66.00        | 2.24             | 0.31            | 0.00         |
| 14.00        | 1.84             | 0.16            | 0.20         | 67.00        | 2.24             | 0.31            | 0.00         |
| 15.00        | 1.91             | 0.19            | 0.15         | 68.00        | 2.24             | 0.31            | 0.00         |
| 16.00        | 1.97             | 0.21            | 0.12         | 69.00        | 2.24             | 0.31            | 0.00         |
| 17.00        | 2.02             | 0.22            | 0.11         | 70.00        | 2.24             | 0.31            | 0.00         |
| 18.00        | 2.06             | 0.24            | 0.10         | 71.00        | 2.24             | 0.31            | 0.00         |
| 19.00        | 2.10             | 0.25            | 0.09         | 72.00        | 2.24             | 0.31            | 0.00         |
| 20.00        | 2.13             | 0.27            | 0.07         | 73.00        | 2.24             | 0.31            | 0.00         |
| 21.00        | 2.16             | 0.28            | 0.07         | 74.00        | 2.24             | 0.31            | 0.00         |
| 22.00        | 2.19             | 0.29            | 0.07         | 75.00        | 2.24             | 0.31            | 0.00         |
| 23.00        | 2.21             | 0.30            | 0.06         | 76.00        | 2.24             | 0.31            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.31</b>     | 0.06         | 77.00        | 2.24             | 0.31            | 0.00         |
| 25.00        | 2.24             | 0.31            | 0.00         | 78.00        | 2.24             | 0.31            | 0.00         |
| 26.00        | 2.24             | 0.31            | 0.00         | 79.00        | 2.24             | 0.31            | 0.00         |
| 27.00        | 2.24             | 0.31            | 0.00         | 80.00        | 2.24             | 0.31            | 0.00         |
| 28.00        | 2.24             | 0.31            | 0.00         | 81.00        | 2.24             | 0.31            | 0.00         |
| 29.00        | 2.24             | 0.31            | 0.00         | 82.00        | 2.24             | 0.31            | 0.00         |
| 30.00        | 2.24             | 0.31            | 0.00         | 83.00        | 2.24             | 0.31            | 0.00         |
| 31.00        | 2.24             | 0.31            | 0.00         | 84.00        | 2.24             | 0.31            | 0.00         |
| 32.00        | 2.24             | 0.31            | 0.00         | 85.00        | 2.24             | 0.31            | 0.00         |
| 33.00        | 2.24             | 0.31            | 0.00         | 86.00        | 2.24             | 0.31            | 0.00         |
| 34.00        | 2.24             | 0.31            | 0.00         | 87.00        | 2.24             | 0.31            | 0.00         |
| 35.00        | 2.24             | 0.31            | 0.00         | 88.00        | 2.24             | 0.31            | 0.00         |
| 36.00        | 2.24             | 0.31            | 0.00         | 89.00        | 2.24             | 0.31            | 0.00         |
| 37.00        | 2.24             | 0.31            | 0.00         | 90.00        | 2.24             | 0.31            | 0.00         |
| 38.00        | 2.24             | 0.31            | 0.00         | 91.00        | 2.24             | 0.31            | 0.00         |
| 39.00        | 2.24             | 0.31            | 0.00         | 92.00        | 2.24             | 0.31            | 0.00         |
| 40.00        | 2.24             | 0.31            | 0.00         | 93.00        | 2.24             | 0.31            | 0.00         |
| 41.00        | 2.24             | 0.31            | 0.00         | 94.00        | 2.24             | 0.31            | 0.00         |
| 42.00        | 2.24             | 0.31            | 0.00         | 95.00        | 2.24             | 0.31            | 0.00         |
| 43.00        | 2.24             | 0.31            | 0.00         | 96.00        | 2.24             | 0.31            | 0.00         |
| 44.00        | 2.24             | 0.31            | 0.00         | 97.00        | 2.24             | 0.31            | 0.00         |
| 45.00        | 2.24             | 0.31            | 0.00         | 98.00        | 2.24             | 0.31            | 0.00         |
| 46.00        | 2.24             | 0.31            | 0.00         | 99.00        | 2.24             | 0.31            | 0.00         |
| 47.00        | 2.24             | 0.31            | 0.00         | 100.00       | 2.24             | 0.31            | 0.00         |
| 48.00        | 2.24             | 0.31            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.31            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.31            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.31            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.31            | 0.00         |              |                  |                 |              |

**Summary for Pond 3ST: Existing Sediment Trap**

Inflow Area = 9.901 ac, 9.99% Impervious, Inflow Depth = 0.02" for 1-yr event  
 Inflow = 0.03 cfs @ 18.49 hrs, Volume= 0.019 af  
 Outflow = 0.02 cfs @ 24.10 hrs, Volume= 0.009 af, Atten= 5%, Lag= 336.7 min  
 Primary = 0.02 cfs @ 24.10 hrs, Volume= 0.009 af  
 Routed to Pond 4ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.42' Surf.Area= 0.130 ac Storage= 0.177 af  
 Peak Elev= 337.51' @ 24.10 hrs Surf.Area= 0.135 ac Storage= 0.188 af (0.012 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 213.7 min ( 1,391.5 - 1,177.8 )

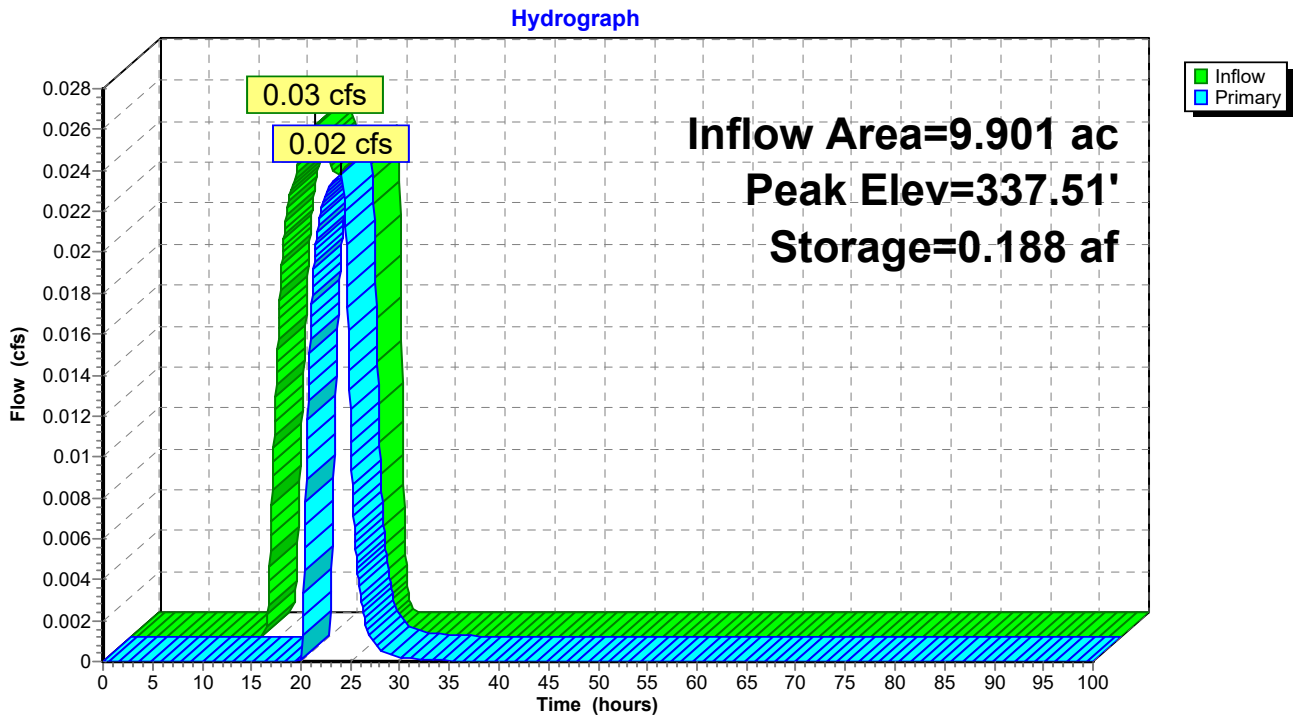
| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 335.00'              | 0.261 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 335.00              | 0.023                | 277.9            | 0.000  | 0.000                    | 0.023               |  |
| 336.00              | 0.063                | 408.6            | 0.041  | 0.041                    | 0.187               |  |
| 337.00              | 0.109                | 536.8            | 0.085  | 0.126                    | 0.409               |  |
| 338.00              | 0.163                | 586.1            | 0.135  | 0.261                    | 0.511               |  |

| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 337.50' | <b>10.0' long x 5.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88                         |  |  |  |  |  |  |  |  |  |  |  |

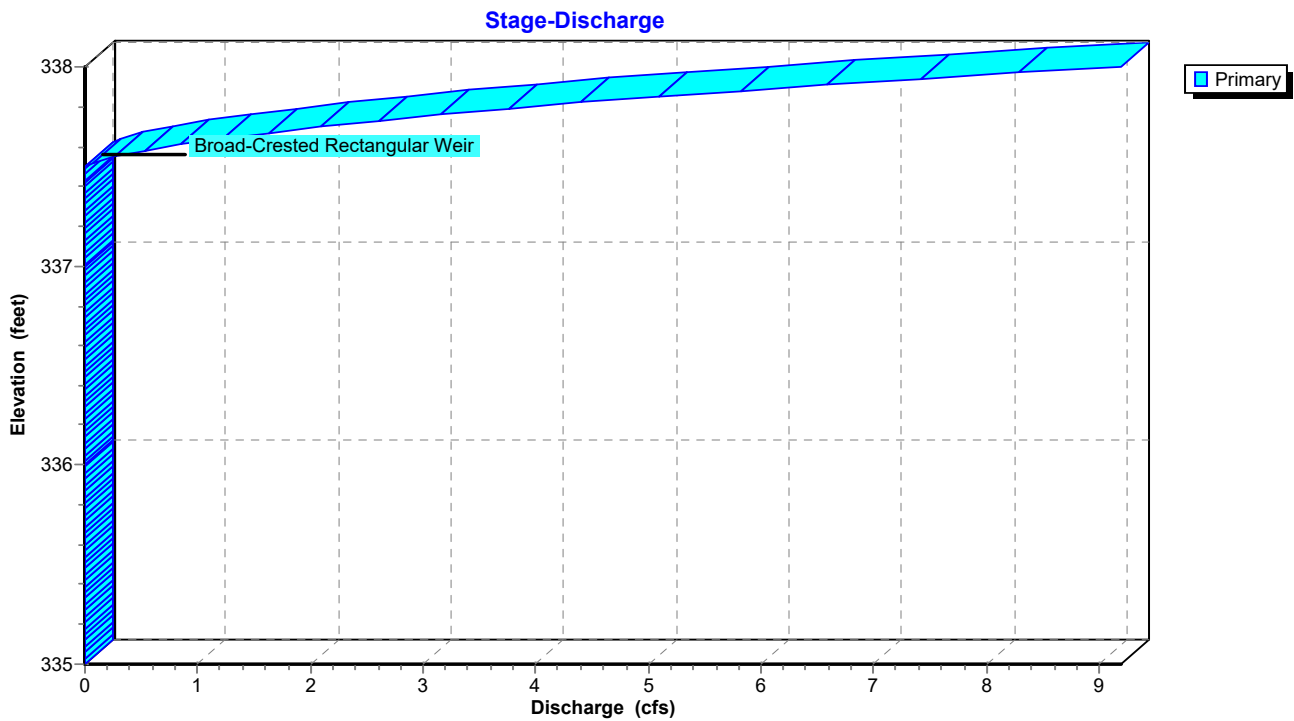
**Primary OutFlow** Max=0.02 cfs @ 24.10 hrs HW=337.51' TW=335.45' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.24 fps)



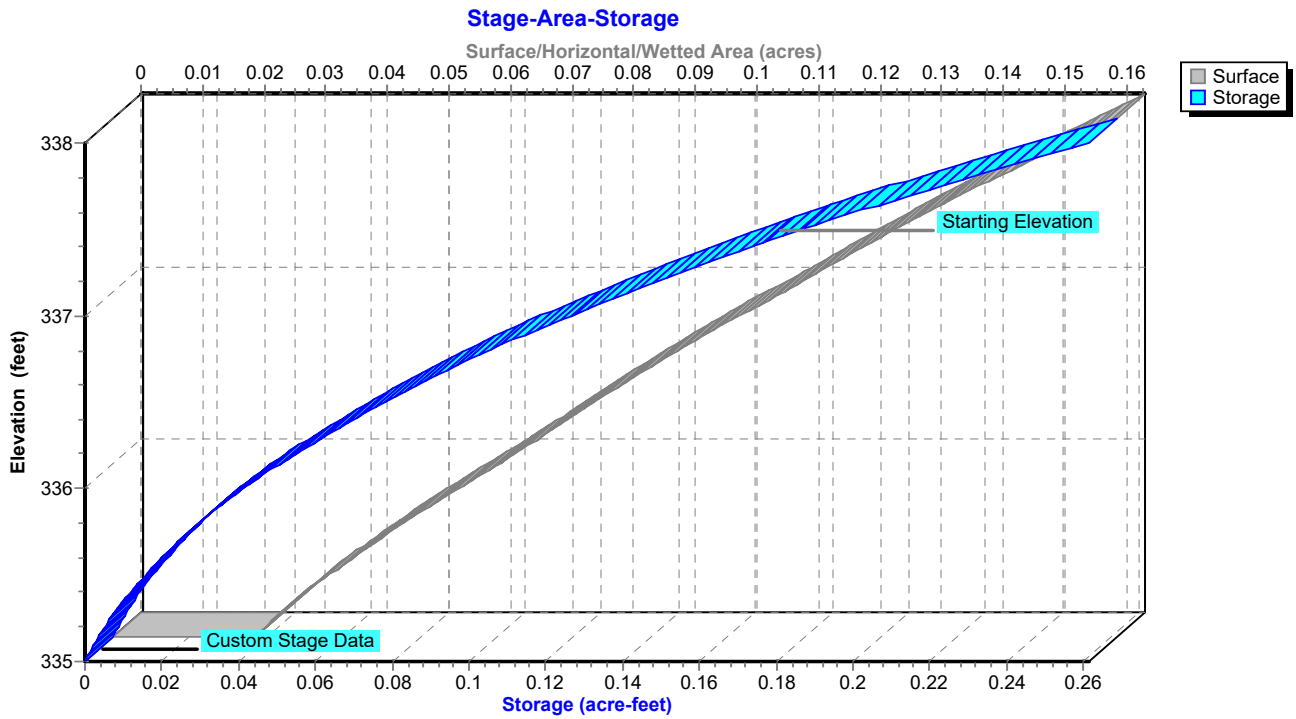
**Pond 3ST: Existing Sediment Trap**



**Pond 3ST: Existing Sediment Trap**



### Pond 3ST: Existing Sediment Trap



**Hydrograph for Pond 3ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.177               | 337.42           | 0.00          |
| 2.50         | 0.00         | 0.177               | 337.42           | 0.00          |
| 5.00         | 0.00         | 0.177               | 337.42           | 0.00          |
| 7.50         | 0.00         | 0.177               | 337.42           | 0.00          |
| 10.00        | 0.00         | 0.177               | 337.42           | 0.00          |
| 12.50        | 0.00         | 0.177               | 337.42           | 0.00          |
| 15.00        | 0.02         | 0.177               | 337.43           | 0.00          |
| 17.50        | <b>0.02</b>  | 0.182               | 337.46           | 0.00          |
| 20.00        | <b>0.02</b>  | 0.187               | 337.50           | 0.00          |
| 22.50        | 0.02         | <b>0.188</b>        | <b>337.51</b>    | <b>0.02</b>   |
| 25.00        | 0.00         | <b>0.188</b>        | <b>337.51</b>    | <b>0.01</b>   |
| 27.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 30.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 32.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 35.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 37.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 40.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 42.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 45.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 47.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 50.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 52.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 55.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 57.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 60.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 62.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 65.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 67.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 70.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 72.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 75.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 77.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 80.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 82.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 85.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 87.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 90.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 92.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 95.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 97.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 100.00       | 0.00         | 0.187               | 337.50           | 0.00          |

**Stage-Discharge for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 335.00              | 0.00             | 336.06              | 0.00             | 337.12              | 0.00             |
| 335.02              | 0.00             | 336.08              | 0.00             | 337.14              | 0.00             |
| 335.04              | 0.00             | 336.10              | 0.00             | 337.16              | 0.00             |
| 335.06              | 0.00             | 336.12              | 0.00             | 337.18              | 0.00             |
| 335.08              | 0.00             | 336.14              | 0.00             | 337.20              | 0.00             |
| 335.10              | 0.00             | 336.16              | 0.00             | 337.22              | 0.00             |
| 335.12              | 0.00             | 336.18              | 0.00             | 337.24              | 0.00             |
| 335.14              | 0.00             | 336.20              | 0.00             | 337.26              | 0.00             |
| 335.16              | 0.00             | 336.22              | 0.00             | 337.28              | 0.00             |
| 335.18              | 0.00             | 336.24              | 0.00             | 337.30              | 0.00             |
| 335.20              | 0.00             | 336.26              | 0.00             | 337.32              | 0.00             |
| 335.22              | 0.00             | 336.28              | 0.00             | 337.34              | 0.00             |
| 335.24              | 0.00             | 336.30              | 0.00             | 337.36              | 0.00             |
| 335.26              | 0.00             | 336.32              | 0.00             | 337.38              | 0.00             |
| 335.28              | 0.00             | 336.34              | 0.00             | 337.40              | 0.00             |
| 335.30              | 0.00             | 336.36              | 0.00             | 337.42              | 0.00             |
| 335.32              | 0.00             | 336.38              | 0.00             | 337.44              | 0.00             |
| 335.34              | 0.00             | 336.40              | 0.00             | 337.46              | 0.00             |
| 335.36              | 0.00             | 336.42              | 0.00             | 337.48              | 0.00             |
| 335.38              | 0.00             | 336.44              | 0.00             | 337.50              | 0.00             |
| 335.40              | 0.00             | 336.46              | 0.00             | 337.52              | 0.07             |
| 335.42              | 0.00             | 336.48              | 0.00             | 337.54              | 0.19             |
| 335.44              | 0.00             | 336.50              | 0.00             | 337.56              | 0.34             |
| 335.46              | 0.00             | 336.52              | 0.00             | 337.58              | 0.53             |
| 335.48              | 0.00             | 336.54              | 0.00             | 337.60              | 0.74             |
| 335.50              | 0.00             | 336.56              | 0.00             | 337.62              | 0.97             |
| 335.52              | 0.00             | 336.58              | 0.00             | 337.64              | 1.23             |
| 335.54              | 0.00             | 336.60              | 0.00             | 337.66              | 1.50             |
| 335.56              | 0.00             | 336.62              | 0.00             | 337.68              | 1.79             |
| 335.58              | 0.00             | 336.64              | 0.00             | 337.70              | 2.09             |
| 335.60              | 0.00             | 336.66              | 0.00             | 337.72              | 2.43             |
| 335.62              | 0.00             | 336.68              | 0.00             | 337.74              | 2.79             |
| 335.64              | 0.00             | 336.70              | 0.00             | 337.76              | 3.17             |
| 335.66              | 0.00             | 336.72              | 0.00             | 337.78              | 3.56             |
| 335.68              | 0.00             | 336.74              | 0.00             | 337.80              | 3.98             |
| 335.70              | 0.00             | 336.76              | 0.00             | 337.82              | 4.41             |
| 335.72              | 0.00             | 336.78              | 0.00             | 337.84              | 4.86             |
| 335.74              | 0.00             | 336.80              | 0.00             | 337.86              | 5.33             |
| 335.76              | 0.00             | 336.82              | 0.00             | 337.88              | 5.82             |
| 335.78              | 0.00             | 336.84              | 0.00             | 337.90              | 6.32             |
| 335.80              | 0.00             | 336.86              | 0.00             | 337.92              | 6.86             |
| 335.82              | 0.00             | 336.88              | 0.00             | 337.94              | 7.41             |
| 335.84              | 0.00             | 336.90              | 0.00             | 337.96              | 7.99             |
| 335.86              | 0.00             | 336.92              | 0.00             | 337.98              | 8.58             |
| 335.88              | 0.00             | 336.94              | 0.00             | 338.00              | <b>9.19</b>      |
| 335.90              | 0.00             | 336.96              | 0.00             |                     |                  |
| 335.92              | 0.00             | 336.98              | 0.00             |                     |                  |
| 335.94              | 0.00             | 337.00              | 0.00             |                     |                  |
| 335.96              | 0.00             | 337.02              | 0.00             |                     |                  |
| 335.98              | 0.00             | 337.04              | 0.00             |                     |                  |
| 336.00              | 0.00             | 337.06              | 0.00             |                     |                  |
| 336.02              | 0.00             | 337.08              | 0.00             |                     |                  |
| 336.04              | 0.00             | 337.10              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 335.00              | 0.023              | 0.000                  | 337.65              | 0.143              | 0.208                  |
| 335.05              | 0.025              | 0.001                  | 337.70              | 0.146              | 0.215                  |
| 335.10              | 0.026              | 0.002                  | 337.75              | 0.148              | 0.222                  |
| 335.15              | 0.028              | 0.004                  | 337.80              | 0.151              | 0.230                  |
| 335.20              | 0.029              | 0.005                  | 337.85              | 0.154              | 0.238                  |
| 335.25              | 0.031              | 0.007                  | 337.90              | 0.157              | 0.245                  |
| 335.30              | 0.033              | 0.008                  | 337.95              | 0.160              | 0.253                  |
| 335.35              | 0.035              | 0.010                  | 338.00              | <b>0.163</b>       | <b>0.261</b>           |
| 335.40              | 0.037              | 0.012                  |                     |                    |                        |
| 335.45              | 0.039              | 0.014                  |                     |                    |                        |
| 335.50              | 0.041              | 0.016                  |                     |                    |                        |
| 335.55              | 0.043              | 0.018                  |                     |                    |                        |
| 335.60              | 0.045              | 0.020                  |                     |                    |                        |
| 335.65              | 0.047              | 0.022                  |                     |                    |                        |
| 335.70              | 0.049              | 0.025                  |                     |                    |                        |
| 335.75              | 0.051              | 0.027                  |                     |                    |                        |
| 335.80              | 0.053              | 0.030                  |                     |                    |                        |
| 335.85              | 0.056              | 0.032                  |                     |                    |                        |
| 335.90              | 0.058              | 0.035                  |                     |                    |                        |
| 335.95              | 0.061              | 0.038                  |                     |                    |                        |
| 336.00              | 0.063              | 0.041                  |                     |                    |                        |
| 336.05              | 0.065              | 0.045                  |                     |                    |                        |
| 336.10              | 0.067              | 0.048                  |                     |                    |                        |
| 336.15              | 0.069              | 0.051                  |                     |                    |                        |
| 336.20              | 0.071              | 0.055                  |                     |                    |                        |
| 336.25              | 0.073              | 0.058                  |                     |                    |                        |
| 336.30              | 0.075              | 0.062                  |                     |                    |                        |
| 336.35              | 0.078              | 0.066                  |                     |                    |                        |
| 336.40              | 0.080              | 0.070                  |                     |                    |                        |
| 336.45              | 0.082              | 0.074                  |                     |                    |                        |
| 336.50              | 0.084              | 0.078                  |                     |                    |                        |
| 336.55              | 0.087              | 0.082                  |                     |                    |                        |
| 336.60              | 0.089              | 0.087                  |                     |                    |                        |
| 336.65              | 0.091              | 0.091                  |                     |                    |                        |
| 336.70              | 0.094              | 0.096                  |                     |                    |                        |
| 336.75              | 0.096              | 0.101                  |                     |                    |                        |
| 336.80              | 0.099              | 0.106                  |                     |                    |                        |
| 336.85              | 0.101              | 0.111                  |                     |                    |                        |
| 336.90              | 0.104              | 0.116                  |                     |                    |                        |
| 336.95              | 0.106              | 0.121                  |                     |                    |                        |
| 337.00              | 0.109              | 0.126                  |                     |                    |                        |
| 337.05              | 0.111              | 0.132                  |                     |                    |                        |
| 337.10              | 0.114              | 0.137                  |                     |                    |                        |
| 337.15              | 0.116              | 0.143                  |                     |                    |                        |
| 337.20              | 0.119              | 0.149                  |                     |                    |                        |
| 337.25              | 0.121              | 0.155                  |                     |                    |                        |
| 337.30              | 0.124              | 0.161                  |                     |                    |                        |
| 337.35              | 0.127              | 0.168                  |                     |                    |                        |
| 337.40              | 0.129              | 0.174                  |                     |                    |                        |
| 337.45              | 0.132              | 0.180                  |                     |                    |                        |
| 337.50              | 0.135              | 0.187                  |                     |                    |                        |
| 337.55              | 0.137              | 0.194                  |                     |                    |                        |
| 337.60              | 0.140              | 0.201                  |                     |                    |                        |

**Summary for Pond 4ST: Existing Sediment Trap**

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 0.18" for 1-yr event  
 Inflow = 3.04 cfs @ 12.02 hrs, Volume= 0.179 af  
 Outflow = 1.77 cfs @ 12.14 hrs, Volume= 0.134 af, Atten= 42%, Lag= 6.9 min  
 Primary = 1.77 cfs @ 12.14 hrs, Volume= 0.134 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 335.69' @ 12.14 hrs Surf.Area= 0.103 ac Storage= 0.062 af

Plug-Flow detention time= 181.1 min calculated for 0.134 af (75% of inflow)  
 Center-of-Mass det. time= 68.2 min ( 926.8 - 858.6 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 334.00' | 0.003 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #2     | 334.00' | 0.006 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #3     | 334.55' | 0.078 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
|        |         | 0.087 af      | Total Available Storage                                    |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.002             | 58.0          | 0.000                 | 0.000                 | 0.002            |
| 334.55           | 0.008             | 171.7         | 0.003                 | 0.003                 | 0.050            |

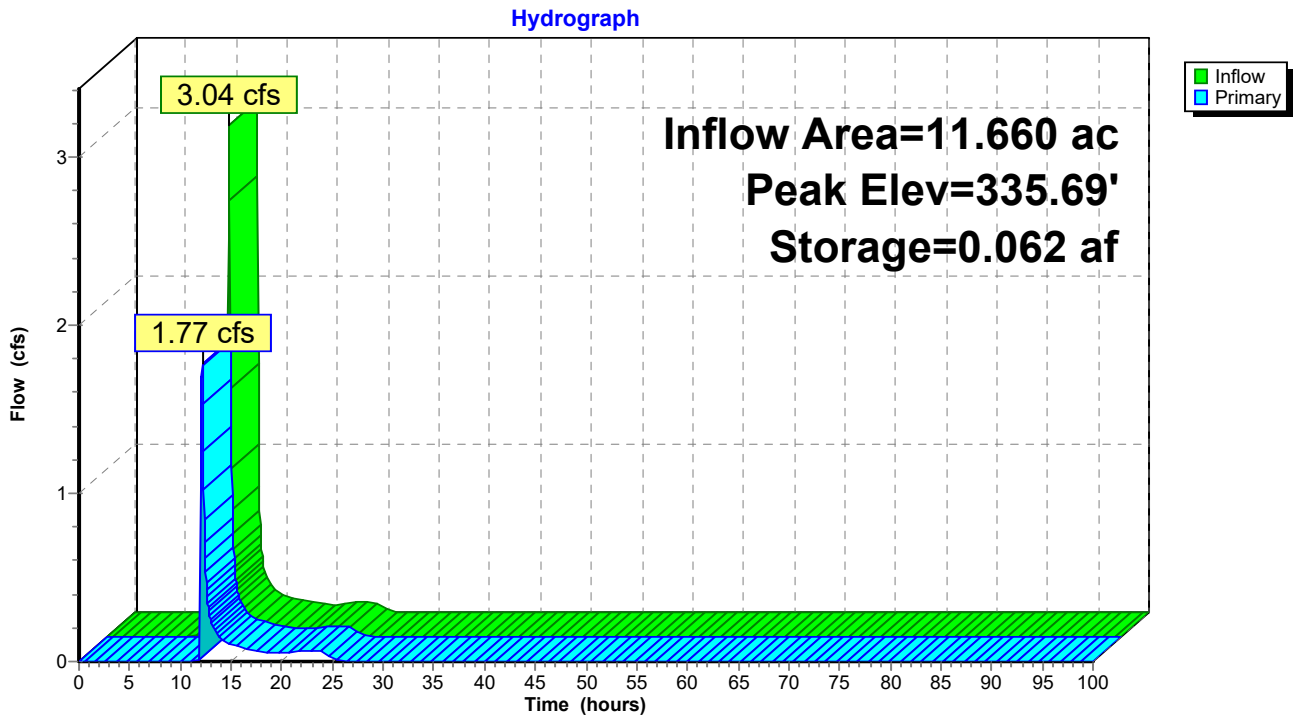
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.004             | 74.4          | 0.000                 | 0.000                 | 0.004            |
| 334.55           | 0.022             | 366.8         | 0.006                 | 0.006                 | 0.240            |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.55           | 0.022             | 366.8         | 0.000                 | 0.000                 | 0.022            |
| 335.00           | 0.042             | 462.0         | 0.014                 | 0.014                 | 0.166            |
| 336.00           | 0.089             | 513.4         | 0.064                 | 0.078                 | 0.258            |

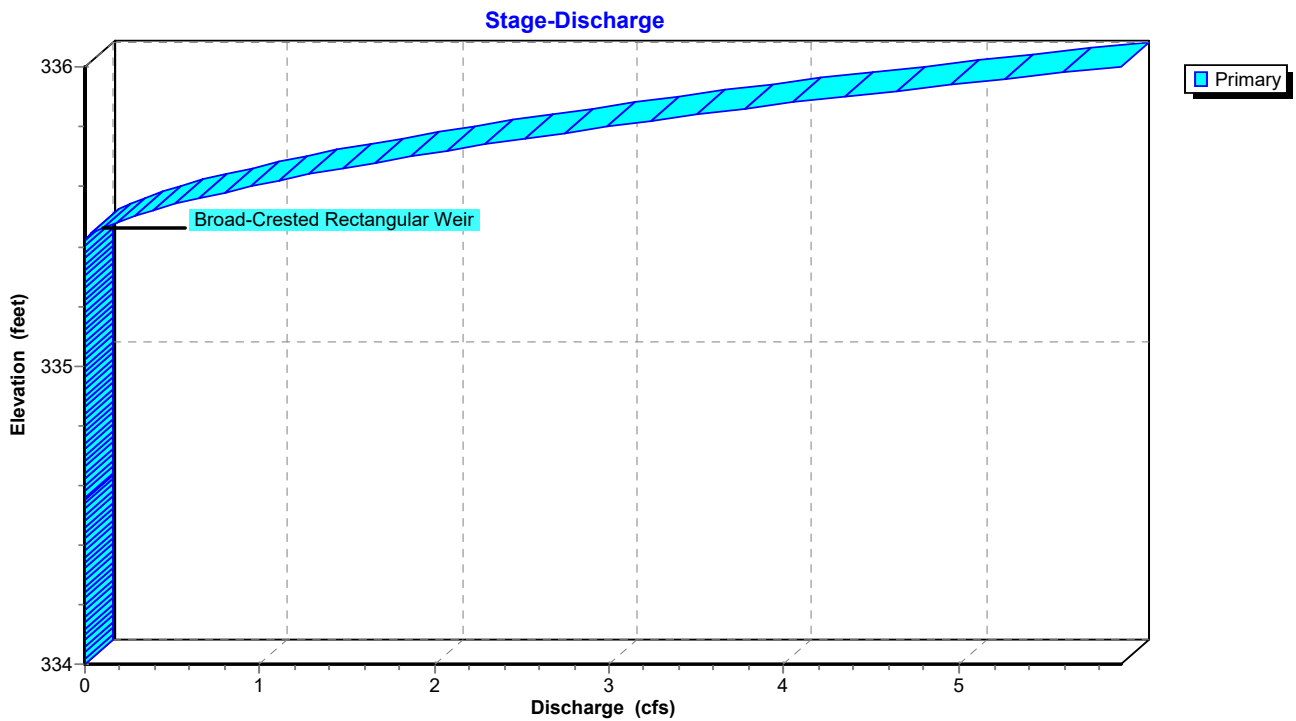
| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 335.42' | <b>5.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=1.74 cfs @ 12.14 hrs HW=335.69' TW=0.00' (Dynamic Tailwater)  
 ←1=**Broad-Crested Rectangular Weir** (Weir Controls 1.74 cfs @ 1.30 fps)

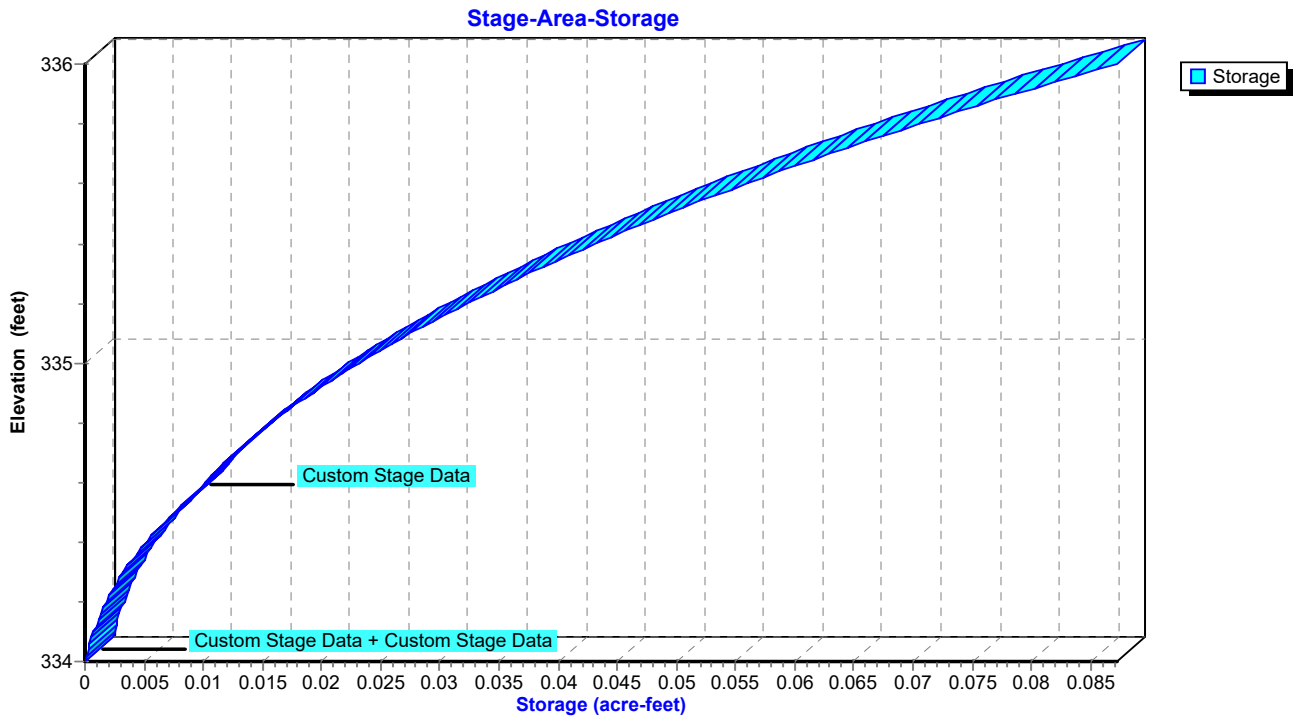
**Pond 4ST: Existing Sediment Trap**



**Pond 4ST: Existing Sediment Trap**



### Pond 4ST: Existing Sediment Trap





**Hydrograph for Pond 4ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.000               | 334.00           | 0.00          |
| 2.50         | 0.00         | 0.000               | 334.00           | 0.00          |
| 5.00         | 0.00         | 0.000               | 334.00           | 0.00          |
| 7.50         | 0.00         | 0.000               | 334.00           | 0.00          |
| 10.00        | <b>0.02</b>  | <b>0.001</b>        | <b>334.16</b>    | <b>0.00</b>   |
| 12.50        | <b>0.37</b>  | <b>0.052</b>        | <b>335.54</b>    | <b>0.53</b>   |
| 15.00        | 0.10         | 0.047               | 335.46           | 0.10          |
| 17.50        | 0.06         | 0.046               | 335.45           | 0.06          |
| 20.00        | 0.04         | 0.046               | 335.44           | 0.05          |
| 22.50        | 0.06         | 0.046               | 335.45           | 0.06          |
| 25.00        | 0.01         | 0.045               | 335.43           | 0.02          |
| 27.50        | 0.00         | 0.045               | 335.42           | 0.00          |
| 30.00        | 0.00         | 0.045               | 335.42           | 0.00          |
| 32.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 35.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 37.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 40.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 42.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 45.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 47.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 50.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 52.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 55.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 57.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 60.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 62.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 65.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 67.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 70.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 72.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 75.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 77.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 80.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 82.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 85.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 87.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 90.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 92.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 95.00        | 0.00         | 0.044               | 335.42           | 0.00          |
| 97.50        | 0.00         | 0.044               | 335.42           | 0.00          |
| 100.00       | 0.00         | 0.044               | 335.42           | 0.00          |

**Stage-Discharge for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 334.00              | 0.00             | 334.53              | 0.00             | 335.06              | 0.00             | 335.59              | 0.87             |
| 334.01              | 0.00             | 334.54              | 0.00             | 335.07              | 0.00             | 335.60              | 0.95             |
| 334.02              | 0.00             | 334.55              | 0.00             | 335.08              | 0.00             | 335.61              | 1.03             |
| 334.03              | 0.00             | 334.56              | 0.00             | 335.09              | 0.00             | 335.62              | 1.11             |
| 334.04              | 0.00             | 334.57              | 0.00             | 335.10              | 0.00             | 335.63              | 1.20             |
| 334.05              | 0.00             | 334.58              | 0.00             | 335.11              | 0.00             | 335.64              | 1.29             |
| 334.06              | 0.00             | 334.59              | 0.00             | 335.12              | 0.00             | 335.65              | 1.38             |
| 334.07              | 0.00             | 334.60              | 0.00             | 335.13              | 0.00             | 335.66              | 1.47             |
| 334.08              | 0.00             | 334.61              | 0.00             | 335.14              | 0.00             | 335.67              | 1.57             |
| 334.09              | 0.00             | 334.62              | 0.00             | 335.15              | 0.00             | 335.68              | 1.66             |
| 334.10              | 0.00             | 334.63              | 0.00             | 335.16              | 0.00             | 335.69              | 1.76             |
| 334.11              | 0.00             | 334.64              | 0.00             | 335.17              | 0.00             | 335.70              | 1.87             |
| 334.12              | 0.00             | 334.65              | 0.00             | 335.18              | 0.00             | 335.71              | 1.97             |
| 334.13              | 0.00             | 334.66              | 0.00             | 335.19              | 0.00             | 335.72              | 2.07             |
| 334.14              | 0.00             | 334.67              | 0.00             | 335.20              | 0.00             | 335.73              | 2.18             |
| 334.15              | 0.00             | 334.68              | 0.00             | 335.21              | 0.00             | 335.74              | 2.29             |
| 334.16              | 0.00             | 334.69              | 0.00             | 335.22              | 0.00             | 335.75              | 2.40             |
| 334.17              | 0.00             | 334.70              | 0.00             | 335.23              | 0.00             | 335.76              | 2.52             |
| 334.18              | 0.00             | 334.71              | 0.00             | 335.24              | 0.00             | 335.77              | 2.63             |
| 334.19              | 0.00             | 334.72              | 0.00             | 335.25              | 0.00             | 335.78              | 2.75             |
| 334.20              | 0.00             | 334.73              | 0.00             | 335.26              | 0.00             | 335.79              | 2.87             |
| 334.21              | 0.00             | 334.74              | 0.00             | 335.27              | 0.00             | 335.80              | 2.99             |
| 334.22              | 0.00             | 334.75              | 0.00             | 335.28              | 0.00             | 335.81              | 3.11             |
| 334.23              | 0.00             | 334.76              | 0.00             | 335.29              | 0.00             | 335.82              | 3.24             |
| 334.24              | 0.00             | 334.77              | 0.00             | 335.30              | 0.00             | 335.83              | 3.37             |
| 334.25              | 0.00             | 334.78              | 0.00             | 335.31              | 0.00             | 335.84              | 3.50             |
| 334.26              | 0.00             | 334.79              | 0.00             | 335.32              | 0.00             | 335.85              | 3.64             |
| 334.27              | 0.00             | 334.80              | 0.00             | 335.33              | 0.00             | 335.86              | 3.78             |
| 334.28              | 0.00             | 334.81              | 0.00             | 335.34              | 0.00             | 335.87              | 3.92             |
| 334.29              | 0.00             | 334.82              | 0.00             | 335.35              | 0.00             | 335.88              | 4.06             |
| 334.30              | 0.00             | 334.83              | 0.00             | 335.36              | 0.00             | 335.89              | 4.20             |
| 334.31              | 0.00             | 334.84              | 0.00             | 335.37              | 0.00             | 335.90              | 4.35             |
| 334.32              | 0.00             | 334.85              | 0.00             | 335.38              | 0.00             | 335.91              | 4.50             |
| 334.33              | 0.00             | 334.86              | 0.00             | 335.39              | 0.00             | 335.92              | 4.65             |
| 334.34              | 0.00             | 334.87              | 0.00             | 335.40              | 0.00             | 335.93              | 4.80             |
| 334.35              | 0.00             | 334.88              | 0.00             | 335.41              | 0.00             | 335.94              | 4.96             |
| 334.36              | 0.00             | 334.89              | 0.00             | 335.42              | 0.00             | 335.95              | 5.11             |
| 334.37              | 0.00             | 334.90              | 0.00             | 335.43              | 0.01             | 335.96              | 5.27             |
| 334.38              | 0.00             | 334.91              | 0.00             | 335.44              | 0.04             | 335.97              | 5.44             |
| 334.39              | 0.00             | 334.92              | 0.00             | 335.45              | 0.06             | 335.98              | 5.60             |
| 334.40              | 0.00             | 334.93              | 0.00             | 335.46              | 0.10             | 335.99              | 5.76             |
| 334.41              | 0.00             | 334.94              | 0.00             | 335.47              | 0.14             | 336.00              | <b>5.93</b>      |
| 334.42              | 0.00             | 334.95              | 0.00             | 335.48              | 0.18             |                     |                  |
| 334.43              | 0.00             | 334.96              | 0.00             | 335.49              | 0.23             |                     |                  |
| 334.44              | 0.00             | 334.97              | 0.00             | 335.50              | 0.28             |                     |                  |
| 334.45              | 0.00             | 334.98              | 0.00             | 335.51              | 0.34             |                     |                  |
| 334.46              | 0.00             | 334.99              | 0.00             | 335.52              | 0.39             |                     |                  |
| 334.47              | 0.00             | 335.00              | 0.00             | 335.53              | 0.45             |                     |                  |
| 334.48              | 0.00             | 335.01              | 0.00             | 335.54              | 0.52             |                     |                  |
| 334.49              | 0.00             | 335.02              | 0.00             | 335.55              | 0.58             |                     |                  |
| 334.50              | 0.00             | 335.03              | 0.00             | 335.56              | 0.65             |                     |                  |
| 334.51              | 0.00             | 335.04              | 0.00             | 335.57              | 0.72             |                     |                  |
| 334.52              | 0.00             | 335.05              | 0.00             | 335.58              | 0.80             |                     |                  |

**Stage-Area-Storage for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Storage<br>(acre-feet) | Elevation<br>(feet) | Storage<br>(acre-feet) |
|---------------------|------------------------|---------------------|------------------------|
| 334.00              | 0.000                  | 335.06              | 0.026                  |
| 334.02              | 0.000                  | 335.08              | 0.027                  |
| 334.04              | 0.000                  | 335.10              | 0.028                  |
| 334.06              | 0.000                  | 335.12              | 0.029                  |
| 334.08              | 0.001                  | 335.14              | 0.029                  |
| 334.10              | 0.001                  | 335.16              | 0.030                  |
| 334.12              | 0.001                  | 335.18              | 0.031                  |
| 334.14              | 0.001                  | 335.20              | 0.032                  |
| 334.16              | 0.001                  | 335.22              | 0.033                  |
| 334.18              | 0.002                  | 335.24              | 0.034                  |
| 334.20              | 0.002                  | 335.26              | 0.035                  |
| 334.22              | 0.002                  | 335.28              | 0.037                  |
| 334.24              | 0.002                  | 335.30              | 0.038                  |
| 334.26              | 0.003                  | 335.32              | 0.039                  |
| 334.28              | 0.003                  | 335.34              | 0.040                  |
| 334.30              | 0.003                  | 335.36              | 0.041                  |
| 334.32              | 0.004                  | 335.38              | 0.042                  |
| 334.34              | 0.004                  | 335.40              | 0.043                  |
| 334.36              | 0.004                  | 335.42              | 0.044                  |
| 334.38              | 0.005                  | 335.44              | 0.046                  |
| 334.40              | 0.005                  | 335.46              | 0.047                  |
| 334.42              | 0.006                  | 335.48              | 0.048                  |
| 334.44              | 0.006                  | 335.50              | 0.049                  |
| 334.46              | 0.007                  | 335.52              | 0.051                  |
| 334.48              | 0.007                  | 335.54              | 0.052                  |
| 334.50              | 0.008                  | 335.56              | 0.053                  |
| 334.52              | 0.008                  | 335.58              | 0.055                  |
| 334.54              | 0.009                  | 335.60              | 0.056                  |
| 334.56              | 0.009                  | 335.62              | 0.057                  |
| 334.58              | 0.010                  | 335.64              | 0.059                  |
| 334.60              | 0.010                  | 335.66              | 0.060                  |
| 334.62              | 0.011                  | 335.68              | 0.062                  |
| 334.64              | 0.011                  | 335.70              | 0.063                  |
| 334.66              | 0.012                  | 335.72              | 0.064                  |
| 334.68              | 0.012                  | 335.74              | 0.066                  |
| 334.70              | 0.013                  | 335.76              | 0.067                  |
| 334.72              | 0.013                  | 335.78              | 0.069                  |
| 334.74              | 0.014                  | 335.80              | 0.071                  |
| 334.76              | 0.015                  | 335.82              | 0.072                  |
| 334.78              | 0.015                  | 335.84              | 0.074                  |
| 334.80              | 0.016                  | 335.86              | 0.075                  |
| 334.82              | 0.016                  | 335.88              | 0.077                  |
| 334.84              | 0.017                  | 335.90              | 0.079                  |
| 334.86              | 0.018                  | 335.92              | 0.080                  |
| 334.88              | 0.019                  | 335.94              | 0.082                  |
| 334.90              | 0.019                  | 335.96              | 0.084                  |
| 334.92              | 0.020                  | 335.98              | 0.085                  |
| 334.94              | 0.021                  | 336.00              | <b>0.087</b>           |
| 334.96              | 0.022                  |                     |                        |
| 334.98              | 0.022                  |                     |                        |
| 335.00              | 0.023                  |                     |                        |
| 335.02              | 0.024                  |                     |                        |
| 335.04              | 0.025                  |                     |                        |

**Summary for Pond 5ST: Existing Sediment Trap**

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.09" for 1-yr event  
 Inflow = 0.07 cfs @ 12.60 hrs, Volume= 0.034 af  
 Outflow = 0.07 cfs @ 12.60 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min  
 Discarded = 0.07 cfs @ 12.60 hrs, Volume= 0.034 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 327.00' @ 0.00 hrs Surf.Area= 0.002 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 0.0 min ( 1,027.6 - 1,027.6 )

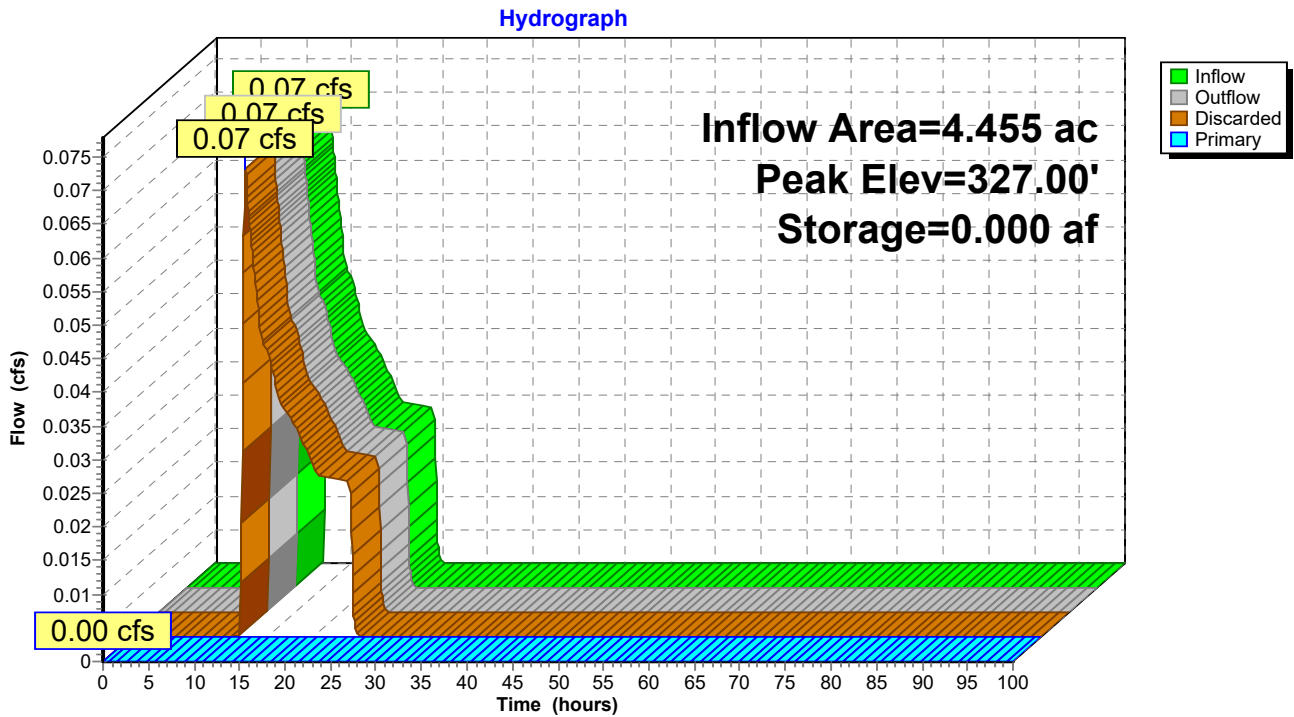
| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |  |
|------------------|-------------------|---------------|--|-----------------------|------------------|--|
| #1               | 327.00'           | 0.230 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |  |
| 327.00           | 0.002             | 70.1          | 0.000  | 0.000                 | 0.002            |  |
| 328.00           | 0.022             | 242.6         | 0.010  | 0.010                 | 0.101            |  |
| 329.00           | 0.048             | 394.7         | 0.034  | 0.044                 | 0.278            |  |
| 330.00           | 0.094             | 554.1         | 0.070  | 0.114                 | 0.554            |  |
| 331.00           | 0.140             | 615.9         | 0.116  | 0.230                 | 0.687            |  |

| Device | Routing   | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|---|--|--|--|--|--|--|--|--|--|--|
| #1     | Discarded | 327.00' | <b>100.00 in/hr Exfiltration over Horizontal area</b>           |  |  |  |  |  |  |  |  |  |  |
| #2     | Primary   | 330.00' | <b>12.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83                         |  |  |  |  |  |  |  |  |  |  |

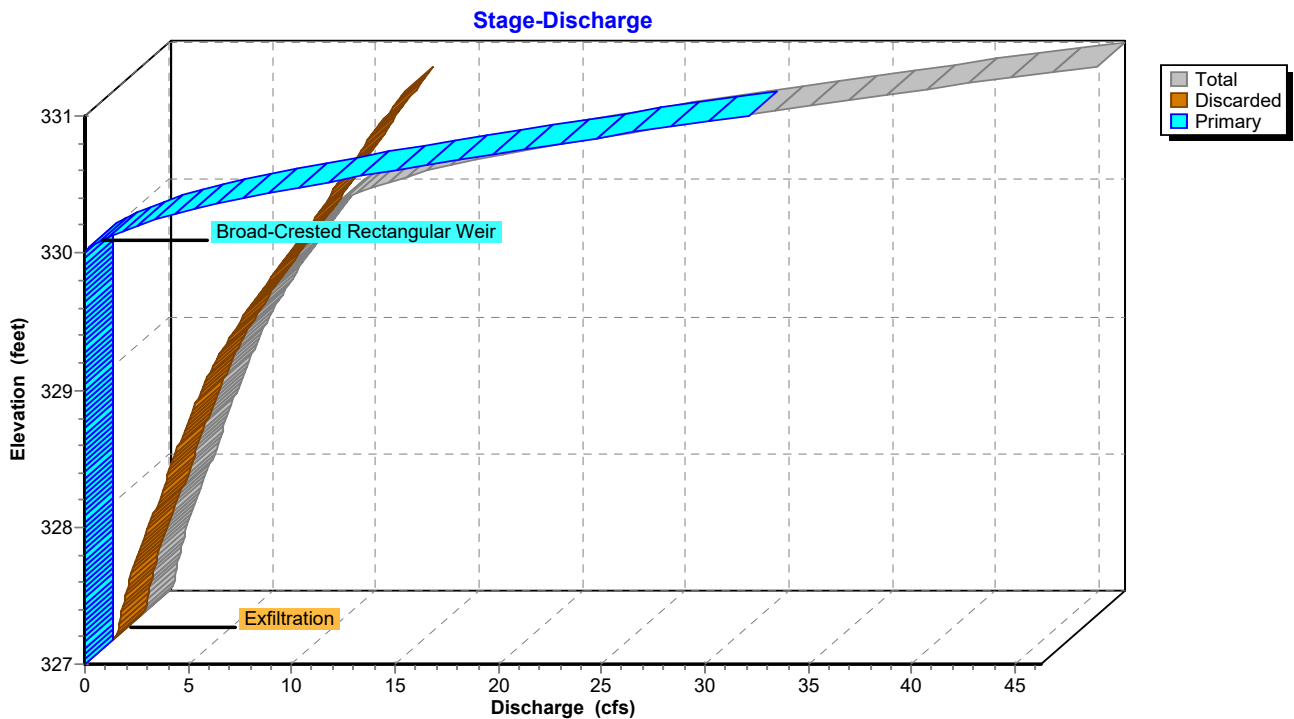
**Discarded OutFlow** Max=0.00 cfs @ 12.60 hrs HW=327.00' (Free Discharge)  
 ↑1=Exfiltration (Passes 0.00 cfs of 0.20 cfs potential flow)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=327.00' TW=0.00' (Dynamic Tailwater)  
 ↑2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

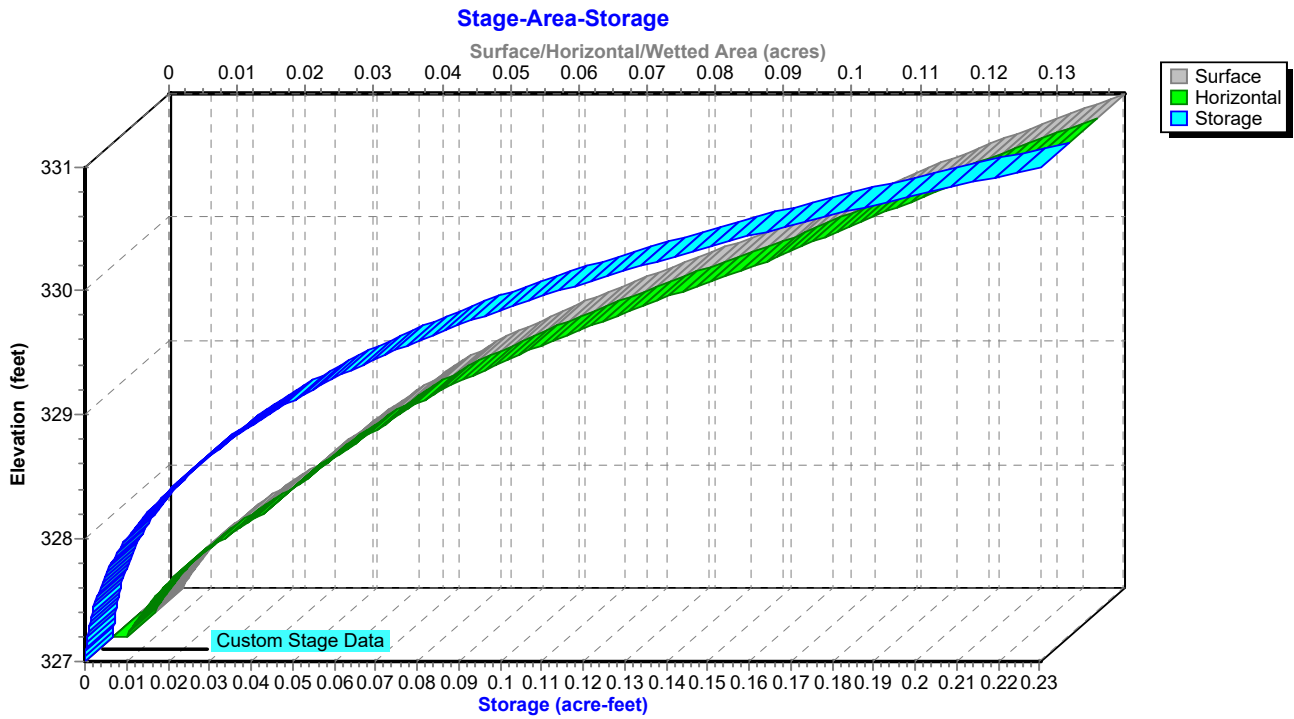
### Pond 5ST: Existing Sediment Trap



### Pond 5ST: Existing Sediment Trap



### Pond 5ST: Existing Sediment Trap



**Hydrograph for Pond 5ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|-----------------|---------------|
| 0.00         | 0.00         | 0.000               | <b>327.00</b>    | 0.00          | 0.00            | <b>0.00</b>   |
| 2.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 5.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 7.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 10.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 12.50        | <b>0.07</b>  | 0.000               | 327.00           | <b>0.07</b>   | <b>0.07</b>     | 0.00          |
| 15.00        | <b>0.04</b>  | 0.000               | 327.00           | <b>0.04</b>   | <b>0.04</b>     | 0.00          |
| 17.50        | 0.03         | 0.000               | 327.00           | 0.03          | 0.03            | 0.00          |
| 20.00        | 0.03         | 0.000               | 327.00           | 0.03          | 0.03            | 0.00          |
| 22.50        | 0.02         | <b>0.000</b>        | 327.00           | 0.02          | 0.02            | 0.00          |
| 25.00        | 0.00         | <b>0.000</b>        | 327.00           | 0.00          | 0.00            | 0.00          |
| 27.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 30.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 32.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 35.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 37.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 40.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 42.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 45.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 47.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 50.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 52.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 55.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 57.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 60.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 62.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 65.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 67.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 70.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 72.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 75.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 77.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 80.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 82.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 85.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 87.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 90.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 92.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 95.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 97.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 100.00       | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |

**Stage-Discharge for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) |
|---------------------|--------------------|--------------------|------------------|---------------------|--------------------|--------------------|------------------|
| 327.00              | 0.00               | 0.00               | 0.00             | 329.65              | 7.68               | 7.68               | 0.00             |
| 327.05              | 0.25               | 0.25               | 0.00             | 329.70              | 7.92               | 7.92               | 0.00             |
| 327.10              | 0.31               | 0.31               | 0.00             | 329.75              | 8.17               | 8.17               | 0.00             |
| 327.15              | 0.37               | 0.37               | 0.00             | 329.80              | 8.43               | 8.43               | 0.00             |
| 327.20              | 0.43               | 0.43               | 0.00             | 329.85              | 8.68               | 8.68               | 0.00             |
| 327.25              | 0.50               | 0.50               | 0.00             | 329.90              | 8.95               | 8.95               | 0.00             |
| 327.30              | 0.58               | 0.58               | 0.00             | 329.95              | 9.21               | 9.21               | 0.00             |
| 327.35              | 0.66               | 0.66               | 0.00             | 330.00              | 9.48               | 9.48               | 0.00             |
| 327.40              | 0.75               | 0.75               | 0.00             | 330.05              | 10.01              | 9.69               | 0.32             |
| 327.45              | 0.84               | 0.84               | 0.00             | 330.10              | 10.80              | 9.90               | 0.90             |
| 327.50              | 0.94               | 0.94               | 0.00             | 330.15              | 11.77              | 10.12              | 1.65             |
| 327.55              | 1.04               | 1.04               | 0.00             | 330.20              | 12.88              | 10.33              | 2.54             |
| 327.60              | 1.15               | 1.15               | 0.00             | 330.25              | 14.16              | 10.55              | 3.61             |
| 327.65              | 1.27               | 1.27               | 0.00             | 330.30              | 15.58              | 10.77              | 4.81             |
| 327.70              | 1.39               | 1.39               | 0.00             | 330.35              | 17.15              | 11.00              | 6.15             |
| 327.75              | 1.51               | 1.51               | 0.00             | 330.40              | 18.84              | 11.22              | 7.62             |
| 327.80              | 1.64               | 1.64               | 0.00             | 330.45              | 20.72              | 11.45              | 9.26             |
| 327.85              | 1.78               | 1.78               | 0.00             | 330.50              | 22.73              | 11.68              | 11.05            |
| 327.90              | 1.92               | 1.92               | 0.00             | 330.55              | 24.90              | 11.92              | 12.98            |
| 327.95              | 2.07               | 2.07               | 0.00             | 330.60              | 27.21              | 12.15              | 15.06            |
| 328.00              | 2.22               | 2.22               | 0.00             | 330.65              | 29.34              | 12.39              | 16.95            |
| 328.05              | 2.33               | 2.33               | 0.00             | 330.70              | 31.53              | 12.63              | 18.91            |
| 328.10              | 2.44               | 2.44               | 0.00             | 330.75              | 33.80              | 12.87              | 20.93            |
| 328.15              | 2.55               | 2.55               | 0.00             | 330.80              | 36.13              | 13.12              | 23.01            |
| 328.20              | 2.66               | 2.66               | 0.00             | 330.85              | 38.56              | 13.36              | 25.20            |
| 328.25              | 2.78               | 2.78               | 0.00             | 330.90              | 41.07              | 13.61              | 27.46            |
| 328.30              | 2.90               | 2.90               | 0.00             | 330.95              | 43.64              | 13.86              | 29.78            |
| 328.35              | 3.02               | 3.02               | 0.00             | 331.00              | <b>46.28</b>       | <b>14.12</b>       | <b>32.16</b>     |
| 328.40              | 3.15               | 3.15               | 0.00             |                     |                    |                    |                  |
| 328.45              | 3.27               | 3.27               | 0.00             |                     |                    |                    |                  |
| 328.50              | 3.40               | 3.40               | 0.00             |                     |                    |                    |                  |
| 328.55              | 3.54               | 3.54               | 0.00             |                     |                    |                    |                  |
| 328.60              | 3.67               | 3.67               | 0.00             |                     |                    |                    |                  |
| 328.65              | 3.81               | 3.81               | 0.00             |                     |                    |                    |                  |
| 328.70              | 3.95               | 3.95               | 0.00             |                     |                    |                    |                  |
| 328.75              | 4.09               | 4.09               | 0.00             |                     |                    |                    |                  |
| 328.80              | 4.23               | 4.23               | 0.00             |                     |                    |                    |                  |
| 328.85              | 4.38               | 4.38               | 0.00             |                     |                    |                    |                  |
| 328.90              | 4.53               | 4.53               | 0.00             |                     |                    |                    |                  |
| 328.95              | 4.68               | 4.68               | 0.00             |                     |                    |                    |                  |
| 329.00              | 4.84               | 4.84               | 0.00             |                     |                    |                    |                  |
| 329.05              | 5.04               | 5.04               | 0.00             |                     |                    |                    |                  |
| 329.10              | 5.23               | 5.23               | 0.00             |                     |                    |                    |                  |
| 329.15              | 5.44               | 5.44               | 0.00             |                     |                    |                    |                  |
| 329.20              | 5.64               | 5.64               | 0.00             |                     |                    |                    |                  |
| 329.25              | 5.85               | 5.85               | 0.00             |                     |                    |                    |                  |
| 329.30              | 6.07               | 6.07               | 0.00             |                     |                    |                    |                  |
| 329.35              | 6.29               | 6.29               | 0.00             |                     |                    |                    |                  |
| 329.40              | 6.51               | 6.51               | 0.00             |                     |                    |                    |                  |
| 329.45              | 6.74               | 6.74               | 0.00             |                     |                    |                    |                  |
| 329.50              | 6.97               | 6.97               | 0.00             |                     |                    |                    |                  |
| 329.55              | 7.20               | 7.20               | 0.00             |                     |                    |                    |                  |
| 329.60              | 7.44               | 7.44               | 0.00             |                     |                    |                    |                  |



**Stage-Area-Storage for Pond 5ST: Existing Sediment Trap**

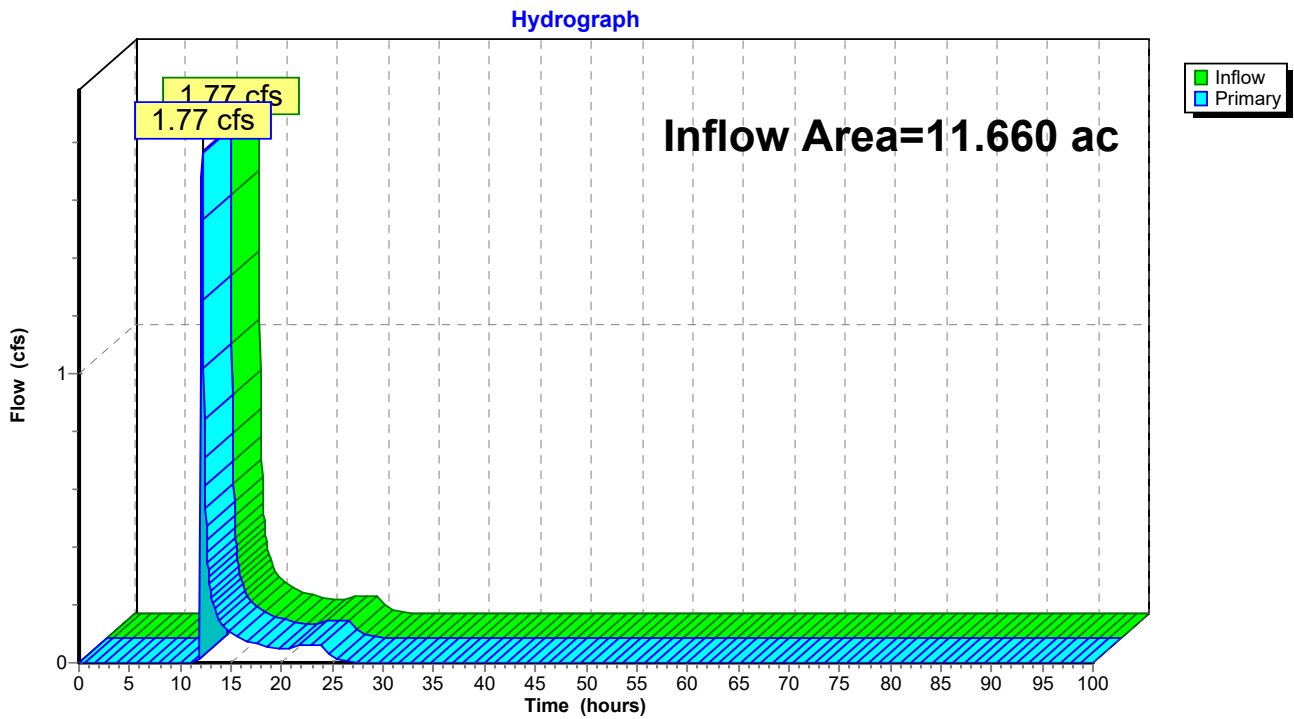
| Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|-----------------------|------------------------|---------------------|--------------------|-----------------------|------------------------|
| 327.00              | 0.002              | 0.002                 | 0.000                  | 329.65              | 0.076              | 0.076                 | 0.084                  |
| 327.05              | 0.002              | 0.002                 | 0.000                  | 329.70              | 0.079              | 0.079                 | 0.088                  |
| 327.10              | 0.003              | 0.003                 | 0.000                  | 329.75              | 0.081              | 0.081                 | 0.092                  |
| 327.15              | 0.004              | 0.004                 | 0.000                  | 329.80              | 0.084              | 0.084                 | 0.096                  |
| 327.20              | 0.004              | 0.004                 | 0.001                  | 329.85              | 0.086              | 0.086                 | 0.101                  |
| 327.25              | 0.005              | 0.005                 | 0.001                  | 329.90              | 0.089              | 0.089                 | 0.105                  |
| 327.30              | 0.006              | 0.006                 | 0.001                  | 329.95              | 0.091              | 0.091                 | 0.109                  |
| 327.35              | 0.007              | 0.007                 | 0.001                  | 330.00              | 0.094              | 0.094                 | 0.114                  |
| 327.40              | 0.007              | 0.007                 | 0.002                  | 330.05              | 0.096              | 0.096                 | 0.119                  |
| 327.45              | 0.008              | 0.008                 | 0.002                  | 330.10              | 0.098              | 0.098                 | 0.124                  |
| 327.50              | 0.009              | 0.009                 | 0.003                  | 330.15              | 0.100              | 0.100                 | 0.129                  |
| 327.55              | 0.010              | 0.010                 | 0.003                  | 330.20              | 0.102              | 0.102                 | 0.134                  |
| 327.60              | 0.011              | 0.011                 | 0.004                  | 330.25              | 0.105              | 0.105                 | 0.139                  |
| 327.65              | 0.013              | 0.013                 | 0.004                  | 330.30              | 0.107              | 0.107                 | 0.144                  |
| 327.70              | 0.014              | 0.014                 | 0.005                  | 330.35              | 0.109              | 0.109                 | 0.150                  |
| 327.75              | 0.015              | 0.015                 | 0.006                  | 330.40              | 0.111              | 0.111                 | 0.155                  |
| 327.80              | 0.016              | 0.016                 | 0.006                  | 330.45              | 0.114              | 0.114                 | 0.161                  |
| 327.85              | 0.018              | 0.018                 | 0.007                  | 330.50              | 0.116              | 0.116                 | 0.166                  |
| 327.90              | 0.019              | 0.019                 | 0.008                  | 330.55              | 0.118              | 0.118                 | 0.172                  |
| 327.95              | 0.020              | 0.020                 | 0.009                  | 330.60              | 0.121              | 0.121                 | 0.178                  |
| 328.00              | 0.022              | 0.022                 | 0.010                  | 330.65              | 0.123              | 0.123                 | 0.184                  |
| 328.05              | 0.023              | 0.023                 | 0.011                  | 330.70              | 0.125              | 0.125                 | 0.191                  |
| 328.10              | 0.024              | 0.024                 | 0.013                  | 330.75              | 0.128              | 0.128                 | 0.197                  |
| 328.15              | 0.025              | 0.025                 | 0.014                  | 330.80              | 0.130              | 0.130                 | 0.203                  |
| 328.20              | 0.026              | 0.026                 | 0.015                  | 330.85              | 0.133              | 0.133                 | 0.210                  |
| 328.25              | 0.028              | 0.028                 | 0.016                  | 330.90              | 0.135              | 0.135                 | 0.217                  |
| 328.30              | 0.029              | 0.029                 | 0.018                  | 330.95              | 0.137              | 0.137                 | 0.223                  |
| 328.35              | 0.030              | 0.030                 | 0.019                  | 331.00              | <b>0.140</b>       | <b>0.140</b>          | <b>0.230</b>           |
| 328.40              | 0.031              | 0.031                 | 0.021                  |                     |                    |                       |                        |
| 328.45              | 0.032              | 0.032                 | 0.022                  |                     |                    |                       |                        |
| 328.50              | 0.034              | 0.034                 | 0.024                  |                     |                    |                       |                        |
| 328.55              | 0.035              | 0.035                 | 0.026                  |                     |                    |                       |                        |
| 328.60              | 0.036              | 0.036                 | 0.028                  |                     |                    |                       |                        |
| 328.65              | 0.038              | 0.038                 | 0.029                  |                     |                    |                       |                        |
| 328.70              | 0.039              | 0.039                 | 0.031                  |                     |                    |                       |                        |
| 328.75              | 0.041              | 0.041                 | 0.033                  |                     |                    |                       |                        |
| 328.80              | 0.042              | 0.042                 | 0.035                  |                     |                    |                       |                        |
| 328.85              | 0.043              | 0.043                 | 0.038                  |                     |                    |                       |                        |
| 328.90              | 0.045              | 0.045                 | 0.040                  |                     |                    |                       |                        |
| 328.95              | 0.046              | 0.046                 | 0.042                  |                     |                    |                       |                        |
| 329.00              | 0.048              | 0.048                 | 0.044                  |                     |                    |                       |                        |
| 329.05              | 0.050              | 0.050                 | 0.047                  |                     |                    |                       |                        |
| 329.10              | 0.052              | 0.052                 | 0.049                  |                     |                    |                       |                        |
| 329.15              | 0.054              | 0.054                 | 0.052                  |                     |                    |                       |                        |
| 329.20              | 0.056              | 0.056                 | 0.055                  |                     |                    |                       |                        |
| 329.25              | 0.058              | 0.058                 | 0.058                  |                     |                    |                       |                        |
| 329.30              | 0.060              | 0.060                 | 0.061                  |                     |                    |                       |                        |
| 329.35              | 0.062              | 0.062                 | 0.064                  |                     |                    |                       |                        |
| 329.40              | 0.065              | 0.065                 | 0.067                  |                     |                    |                       |                        |
| 329.45              | 0.067              | 0.067                 | 0.070                  |                     |                    |                       |                        |
| 329.50              | 0.069              | 0.069                 | 0.073                  |                     |                    |                       |                        |
| 329.55              | 0.071              | 0.071                 | 0.077                  |                     |                    |                       |                        |
| 329.60              | 0.074              | 0.074                 | 0.081                  |                     |                    |                       |                        |

### Summary for Link AP3: Analysis Point 3

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 0.14" for 1-yr event  
Inflow = 1.77 cfs @ 12.14 hrs, Volume= 0.134 af  
Primary = 1.77 cfs @ 12.14 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3



**Hydrograph for Link AP3: Analysis Point 3**

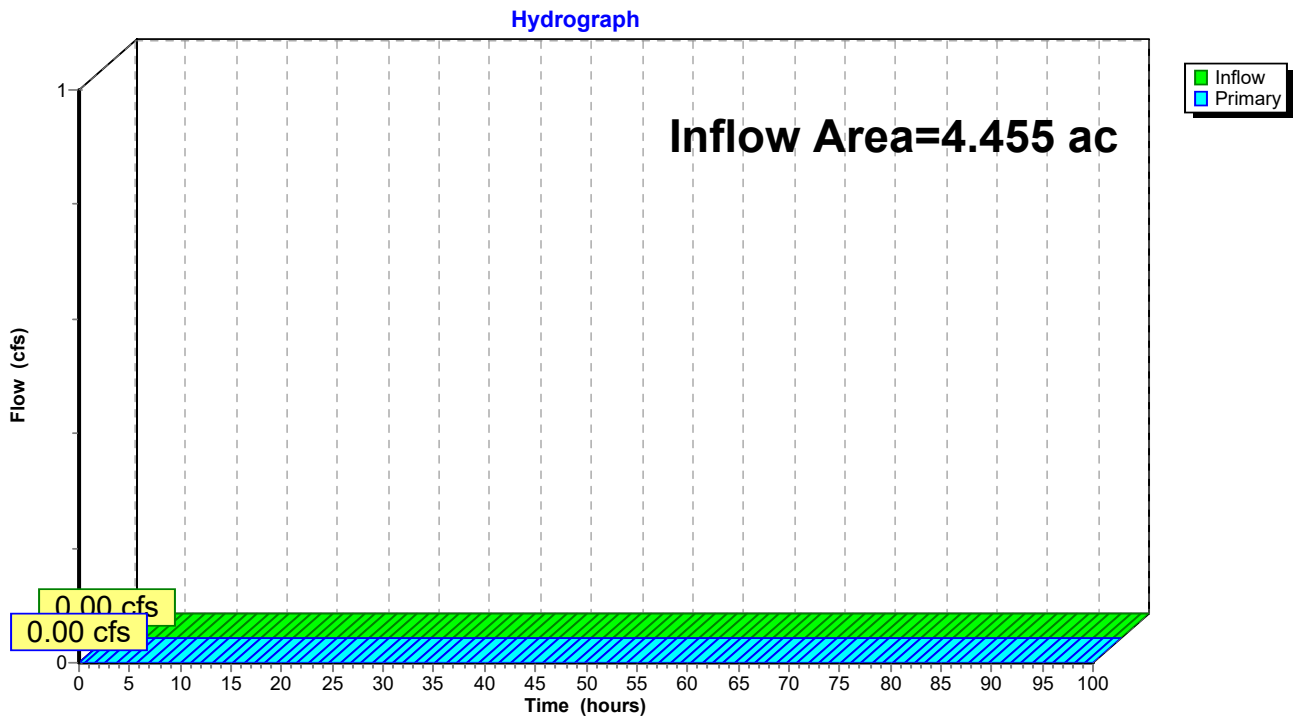
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.08</b>  | 0.00             | <b>0.08</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.24</b>  | 0.00             | <b>0.24</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.14         | 0.00             | 0.14          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.10         | 0.00             | 0.10          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.08         | 0.00             | 0.08          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.07         | 0.00             | 0.07          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.06         | 0.00             | 0.06          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.05         | 0.00             | 0.05          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.05         | 0.00             | 0.05          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.05         | 0.00             | 0.05          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.06         | 0.00             | 0.06          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.06         | 0.00             | 0.06          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.06         | 0.00             | 0.06          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.02         | 0.00             | 0.02          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.01         | 0.00             | 0.01          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

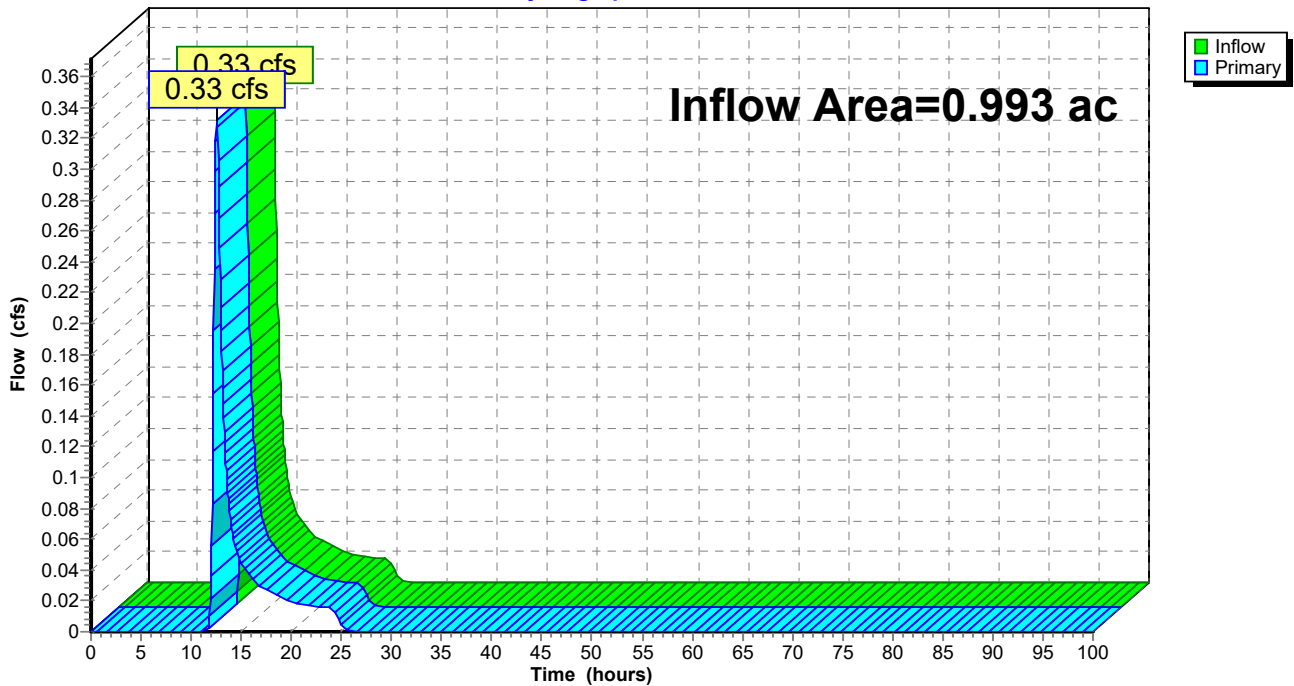
### Summary for Link AP5: Analysis Point 5

Inflow Area = 0.993 ac, 0.00% Impervious, Inflow Depth = 0.62" for 1-yr event  
Inflow = 0.33 cfs @ 12.55 hrs, Volume= 0.052 af  
Primary = 0.33 cfs @ 12.55 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5

Hydrograph



**Hydrograph for Link AP5: Analysis Point 5**

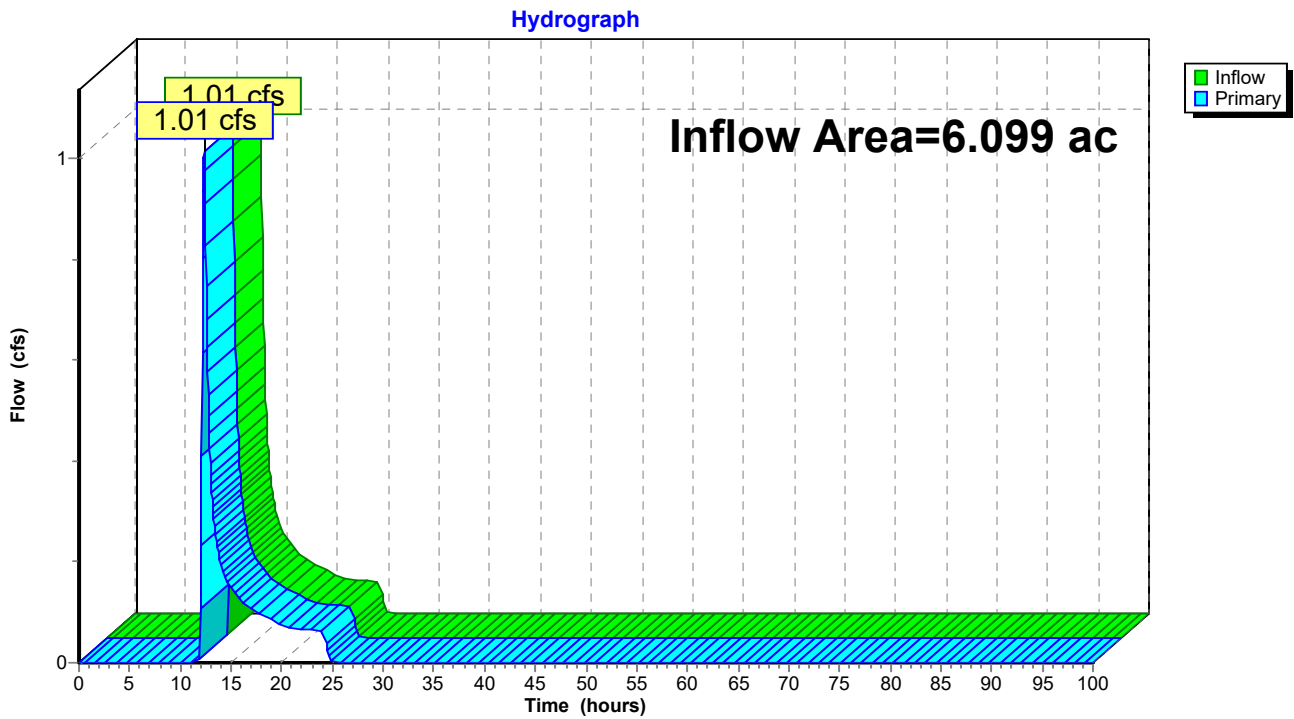
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.04</b>  | 0.00             | <b>0.04</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.20</b>  | 0.00             | <b>0.20</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.07         | 0.00             | 0.07          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.04         | 0.00             | 0.04          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.03         | 0.00             | 0.03          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.03         | 0.00             | 0.03          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.03         | 0.00             | 0.03          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.02         | 0.00             | 0.02          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.02         | 0.00             | 0.02          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.02         | 0.00             | 0.02          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.02         | 0.00             | 0.02          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.02         | 0.00             | 0.02          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.02         | 0.00             | 0.02          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP6: Analysis Point 6

Inflow Area = 6.099 ac, 0.00% Impervious, Inflow Depth = 0.31" for 1-yr event  
Inflow = 1.01 cfs @ 12.34 hrs, Volume= 0.157 af  
Primary = 1.01 cfs @ 12.34 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6





**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.11</b>  | 0.00             | <b>0.11</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.37</b>  | 0.00             | <b>0.37</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.20         | 0.00             | 0.20          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.15         | 0.00             | 0.15          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.12         | 0.00             | 0.12          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.11         | 0.00             | 0.11          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.10         | 0.00             | 0.10          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.09         | 0.00             | 0.09          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.07         | 0.00             | 0.07          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.07         | 0.00             | 0.07          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.07         | 0.00             | 0.07          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.06         | 0.00             | 0.06          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.06         | 0.00             | 0.06          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Existing Stormwater Conditions\_Final D Soils Gre Type II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|  |  |
|--|--|
| <b>Subcatchment S4a: Subcatchment 4a</b> | Runoff Area=9.901 ac 9.99% Impervious Runoff Depth=0.35"<br>Flow Length=937' Tc=37.6 min CN=53 Runoff=1.22 cfs 0.289 af                        |
| <b>Subcatchment S4b: Subcatchment 4b</b> | Runoff Area=1.759 ac 2.39% Impervious Runoff Depth=2.47"<br>Flow Length=440' Tc=10.5 min CN=88 Runoff=6.34 cfs 0.362 af                        |
| <b>Subcatchment S5: Subcatchment 5</b>   | Runoff Area=4.455 ac 0.00% Impervious Runoff Depth=0.59"<br>Flow Length=712' Tc=22.0 min CN=59 Runoff=1.94 cfs 0.217 af                        |
| <b>Subcatchment S6: Subcatchment 6</b>   | Runoff Area=0.993 ac 0.00% Impervious Runoff Depth=1.67"<br>Flow Length=664' Tc=50.0 min CN=78 Runoff=0.99 cfs 0.138 af                        |
| <b>Subcatchment S7: Subcatchment 7</b>   | Runoff Area=6.099 ac 0.00% Impervious Runoff Depth=1.09"<br>Flow Length=900' Tc=30.6 min CN=69 Runoff=5.13 cfs 0.553 af                        |
| <b>Pond 3ST: Existing Sediment Trap</b>  | Peak Elev=337.62' Storage=0.204 af Inflow=1.22 cfs 0.289 af<br>Outflow=1.02 cfs 0.278 af   |
| <b>Pond 4ST: Existing Sediment Trap</b>  | Peak Elev=335.98' Storage=0.085 af Inflow=6.34 cfs 0.641 af<br>Outflow=5.52 cfs 0.596 af   |
| <b>Pond 5ST: Existing Sediment Trap</b>  | Peak Elev=327.85' Storage=0.007 af Inflow=1.94 cfs 0.217 af<br>Discarded=1.78 cfs 0.217 af Primary=0.00 cfs 0.000 af Outflow=1.78 cfs 0.217 af |
| <b>Link AP3: Analysis Point 3</b>        | Inflow=5.52 cfs 0.596 af<br>Primary=5.52 cfs 0.596 af  |
| <b>Link AP4: Analysis Point 4</b>        | Inflow=0.00 cfs 0.000 af<br>Primary=0.00 cfs 0.000 af  |
| <b>Link AP5: Analysis Point 5</b>        | Inflow=0.99 cfs 0.138 af<br>Primary=0.99 cfs 0.138 af  |
| <b>Link AP6: Analysis Point 6</b>        | Inflow=5.13 cfs 0.553 af<br>Primary=5.13 cfs 0.553 af  |

**Total Runoff Area = 23.207 ac Runoff Volume = 1.559 af Average Runoff Depth = 0.81"**  
**95.56% Pervious = 22.176 ac 4.44% Impervious = 1.031 ac**

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 1.22 cfs @ 12.50 hrs, Volume= 0.289 af, Depth= 0.35"

Routed to Pond 3ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.105     | 98 | Roofs, HSG A                  |
| 0.351     | 98 | Paved parking, HSG A          |
| 0.470     | 98 | Paved roads, HSG A            |
| 4.623     | 30 | Woods, Good, HSG A            |
| 0.565     | 77 | Woods, Good, HSG D            |
| 0.682     | 30 | Meadow, non-grazed, HSG A     |
| 1.306     | 78 | Meadow, non-grazed, HSG D     |
| 0.124     | 77 | Fallow, bare soil, HSG A      |
| 0.900     | 94 | Fallow, bare soil, HSG D      |
| 0.519     | 39 | >75% Grass cover, Good, HSG A |
| 0.193     | 30 | Woods, Good, HSG A            |
| 0.063     | 98 | Water Surface, HSG A          |
| 9.901     | 53 | Weighted Average              |
| 8.912     |    | 90.01% Pervious Area          |
| 0.989     |    | 9.99% Impervious Area         |

**1096 Existing Stormwater Conditions\_Final D Soils Gre Type II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

Printed 12/13/2024

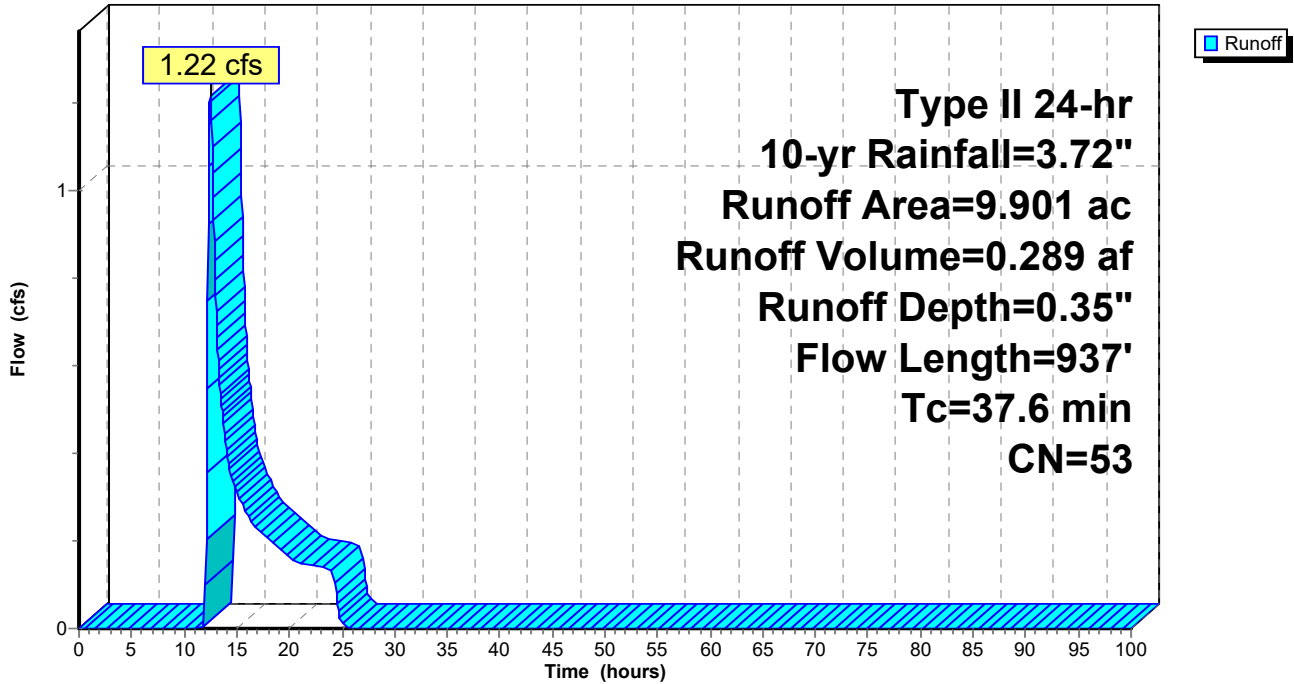
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                    |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"         |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 2.7         | 71               | 0.0039           | 0.44                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.9         | 132              | 0.0032           | 0.57                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 0.2         | 33               | 0.1262           | 2.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.5         | 38               | 0.0271           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 37.6        | 937              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph



**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.35            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.35            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.35            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.35            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.35            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.35            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.35            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.35            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.35            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.35            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.35            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.35            | 0.00         |
| 12.00        | 2.47             | 0.05            | <b>0.04</b>  | 65.00        | 3.72             | 0.35            | 0.00         |
| 13.00        | 2.87             | 0.12            | <b>0.76</b>  | 66.00        | 3.72             | 0.35            | 0.00         |
| 14.00        | 3.05             | 0.16            | 0.41         | 67.00        | 3.72             | 0.35            | 0.00         |
| 15.00        | 3.18             | 0.19            | 0.31         | 68.00        | 3.72             | 0.35            | 0.00         |
| 16.00        | 3.27             | 0.22            | 0.26         | 69.00        | 3.72             | 0.35            | 0.00         |
| 17.00        | 3.35             | 0.24            | 0.22         | 70.00        | 3.72             | 0.35            | 0.00         |
| 18.00        | 3.43             | 0.26            | 0.21         | 71.00        | 3.72             | 0.35            | 0.00         |
| 19.00        | 3.49             | 0.28            | 0.18         | 72.00        | 3.72             | 0.35            | 0.00         |
| 20.00        | 3.54             | 0.29            | 0.16         | 73.00        | 3.72             | 0.35            | 0.00         |
| 21.00        | 3.59             | 0.31            | 0.15         | 74.00        | 3.72             | 0.35            | 0.00         |
| 22.00        | 3.63             | 0.32            | 0.14         | 75.00        | 3.72             | 0.35            | 0.00         |
| 23.00        | 3.68             | 0.34            | 0.14         | 76.00        | 3.72             | 0.35            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.35</b>     | 0.14         | 77.00        | 3.72             | 0.35            | 0.00         |
| 25.00        | 3.72             | 0.35            | 0.01         | 78.00        | 3.72             | 0.35            | 0.00         |
| 26.00        | 3.72             | 0.35            | 0.00         | 79.00        | 3.72             | 0.35            | 0.00         |
| 27.00        | 3.72             | 0.35            | 0.00         | 80.00        | 3.72             | 0.35            | 0.00         |
| 28.00        | 3.72             | 0.35            | 0.00         | 81.00        | 3.72             | 0.35            | 0.00         |
| 29.00        | 3.72             | 0.35            | 0.00         | 82.00        | 3.72             | 0.35            | 0.00         |
| 30.00        | 3.72             | 0.35            | 0.00         | 83.00        | 3.72             | 0.35            | 0.00         |
| 31.00        | 3.72             | 0.35            | 0.00         | 84.00        | 3.72             | 0.35            | 0.00         |
| 32.00        | 3.72             | 0.35            | 0.00         | 85.00        | 3.72             | 0.35            | 0.00         |
| 33.00        | 3.72             | 0.35            | 0.00         | 86.00        | 3.72             | 0.35            | 0.00         |
| 34.00        | 3.72             | 0.35            | 0.00         | 87.00        | 3.72             | 0.35            | 0.00         |
| 35.00        | 3.72             | 0.35            | 0.00         | 88.00        | 3.72             | 0.35            | 0.00         |
| 36.00        | 3.72             | 0.35            | 0.00         | 89.00        | 3.72             | 0.35            | 0.00         |
| 37.00        | 3.72             | 0.35            | 0.00         | 90.00        | 3.72             | 0.35            | 0.00         |
| 38.00        | 3.72             | 0.35            | 0.00         | 91.00        | 3.72             | 0.35            | 0.00         |
| 39.00        | 3.72             | 0.35            | 0.00         | 92.00        | 3.72             | 0.35            | 0.00         |
| 40.00        | 3.72             | 0.35            | 0.00         | 93.00        | 3.72             | 0.35            | 0.00         |
| 41.00        | 3.72             | 0.35            | 0.00         | 94.00        | 3.72             | 0.35            | 0.00         |
| 42.00        | 3.72             | 0.35            | 0.00         | 95.00        | 3.72             | 0.35            | 0.00         |
| 43.00        | 3.72             | 0.35            | 0.00         | 96.00        | 3.72             | 0.35            | 0.00         |
| 44.00        | 3.72             | 0.35            | 0.00         | 97.00        | 3.72             | 0.35            | 0.00         |
| 45.00        | 3.72             | 0.35            | 0.00         | 98.00        | 3.72             | 0.35            | 0.00         |
| 46.00        | 3.72             | 0.35            | 0.00         | 99.00        | 3.72             | 0.35            | 0.00         |
| 47.00        | 3.72             | 0.35            | 0.00         | 100.00       | 3.72             | 0.35            | 0.00         |
| 48.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 6.34 cfs @ 12.02 hrs, Volume= 0.362 af, Depth= 2.47"

Routed to Pond 4ST : Existing Sediment Trap

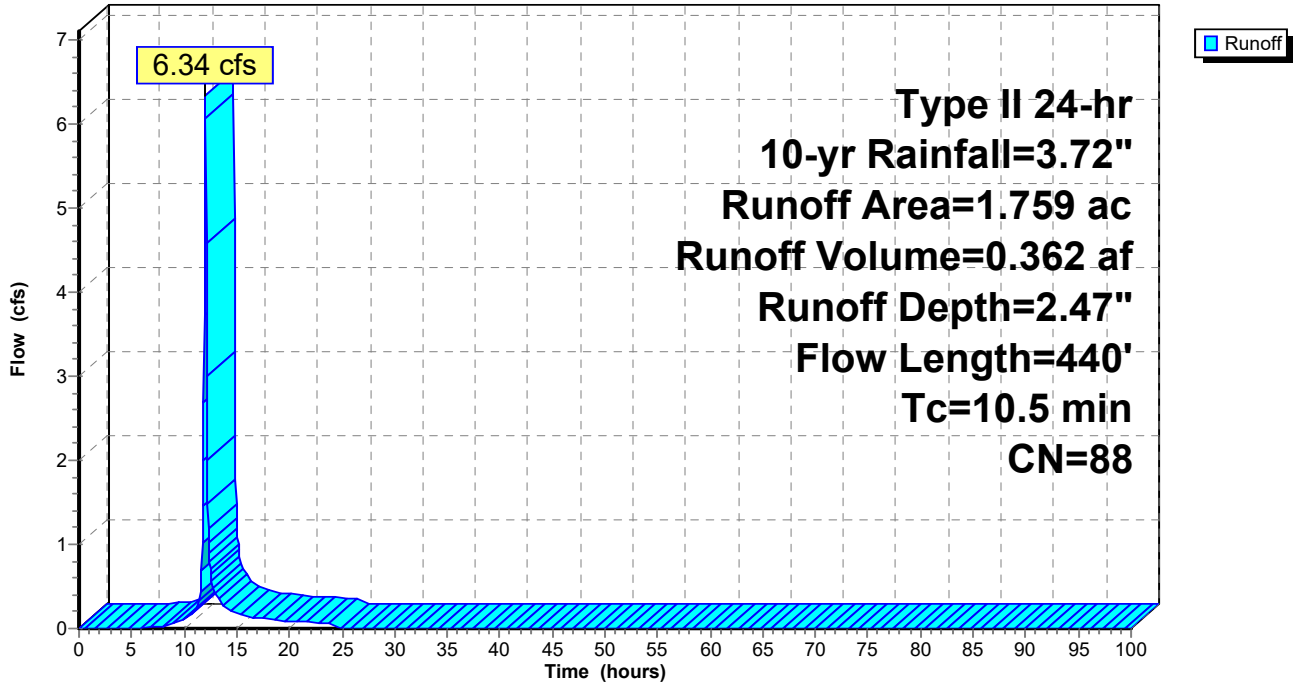
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.106     | 77 | Woods, Good, HSG D                   |
| 0.399     | 78 | Meadow, non-grazed, HSG D            |
| 0.090     | 77 | Fallow, bare soil, HSG A             |
| 0.990     | 94 | Fallow, bare soil, HSG D             |
| 0.132     | 89 | Row crops, straight row, Good, HSG D |
| 0.042     | 98 | Water Surface, HSG D                 |
| 1.759     | 88 | Weighted Average                     |
| 1.717     |    | 97.61% Pervious Area                 |
| 0.042     |    | 2.39% Impervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.9      | 28            | 0.0880        | 0.52              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 1.7      | 31            | 0.0230        | 0.31              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 2.8      | 40            | 0.0110        | 0.24              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 4.1      | 256           | 0.0110        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.7      | 58            | 0.0174        | 1.32              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.3      | 27            | 0.0370        | 1.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 10.5     | 440           | Total         |                   |                |   |

### Subcatchment S4b: Subcatchment 4b

Hydrograph





**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 2.47               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 2.47               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 2.47               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 2.47               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 2.47               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 2.47               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 2.47               | 0.00            |
| 7.00            | 0.37                | 0.01               | 0.01            | 60.00           | 3.72                | 2.47               | 0.00            |
| 8.00            | 0.45                | 0.02               | 0.03            | 61.00           | 3.72                | 2.47               | 0.00            |
| 9.00            | 0.55                | 0.05               | 0.06            | 62.00           | 3.72                | 2.47               | 0.00            |
| 10.00           | 0.67                | 0.09               | 0.10            | 63.00           | 3.72                | 2.47               | 0.00            |
| 11.00           | 0.87                | 0.18               | 0.22            | 64.00           | 3.72                | 2.47               | 0.00            |
| 12.00           | 2.47                | 1.35               | <b>6.25</b>     | 65.00           | 3.72                | 2.47               | 0.00            |
| 13.00           | 2.87                | 1.70               | 0.40            | 66.00           | 3.72                | 2.47               | 0.00            |
| 14.00           | 3.05                | 1.86               | 0.24            | 67.00           | 3.72                | 2.47               | 0.00            |
| 15.00           | 3.18                | 1.97               | 0.18            | 68.00           | 3.72                | 2.47               | 0.00            |
| 16.00           | 3.27                | 2.06               | 0.14            | 69.00           | 3.72                | 2.47               | 0.00            |
| 17.00           | 3.35                | 2.14               | 0.12            | 70.00           | 3.72                | 2.47               | 0.00            |
| 18.00           | 3.43                | 2.20               | 0.11            | 71.00           | 3.72                | 2.47               | 0.00            |
| 19.00           | 3.49                | 2.26               | 0.10            | 72.00           | 3.72                | 2.47               | 0.00            |
| 20.00           | 3.54                | 2.31               | 0.08            | 73.00           | 3.72                | 2.47               | 0.00            |
| 21.00           | 3.59                | 2.35               | 0.08            | 74.00           | 3.72                | 2.47               | 0.00            |
| 22.00           | 3.63                | 2.39               | 0.07            | 75.00           | 3.72                | 2.47               | 0.00            |
| 23.00           | 3.68                | 2.43               | 0.07            | 76.00           | 3.72                | 2.47               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>2.47</b>        | 0.07            | 77.00           | 3.72                | 2.47               | 0.00            |
| 25.00           | 3.72                | 2.47               | 0.00            | 78.00           | 3.72                | 2.47               | 0.00            |
| 26.00           | 3.72                | 2.47               | 0.00            | 79.00           | 3.72                | 2.47               | 0.00            |
| 27.00           | 3.72                | 2.47               | 0.00            | 80.00           | 3.72                | 2.47               | 0.00            |
| 28.00           | 3.72                | 2.47               | 0.00            | 81.00           | 3.72                | 2.47               | 0.00            |
| 29.00           | 3.72                | 2.47               | 0.00            | 82.00           | 3.72                | 2.47               | 0.00            |
| 30.00           | 3.72                | 2.47               | 0.00            | 83.00           | 3.72                | 2.47               | 0.00            |
| 31.00           | 3.72                | 2.47               | 0.00            | 84.00           | 3.72                | 2.47               | 0.00            |
| 32.00           | 3.72                | 2.47               | 0.00            | 85.00           | 3.72                | 2.47               | 0.00            |
| 33.00           | 3.72                | 2.47               | 0.00            | 86.00           | 3.72                | 2.47               | 0.00            |
| 34.00           | 3.72                | 2.47               | 0.00            | 87.00           | 3.72                | 2.47               | 0.00            |
| 35.00           | 3.72                | 2.47               | 0.00            | 88.00           | 3.72                | 2.47               | 0.00            |
| 36.00           | 3.72                | 2.47               | 0.00            | 89.00           | 3.72                | 2.47               | 0.00            |
| 37.00           | 3.72                | 2.47               | 0.00            | 90.00           | 3.72                | 2.47               | 0.00            |
| 38.00           | 3.72                | 2.47               | 0.00            | 91.00           | 3.72                | 2.47               | 0.00            |
| 39.00           | 3.72                | 2.47               | 0.00            | 92.00           | 3.72                | 2.47               | 0.00            |
| 40.00           | 3.72                | 2.47               | 0.00            | 93.00           | 3.72                | 2.47               | 0.00            |
| 41.00           | 3.72                | 2.47               | 0.00            | 94.00           | 3.72                | 2.47               | 0.00            |
| 42.00           | 3.72                | 2.47               | 0.00            | 95.00           | 3.72                | 2.47               | 0.00            |
| 43.00           | 3.72                | 2.47               | 0.00            | 96.00           | 3.72                | 2.47               | 0.00            |
| 44.00           | 3.72                | 2.47               | 0.00            | 97.00           | 3.72                | 2.47               | 0.00            |
| 45.00           | 3.72                | 2.47               | 0.00            | 98.00           | 3.72                | 2.47               | 0.00            |
| 46.00           | 3.72                | 2.47               | 0.00            | 99.00           | 3.72                | 2.47               | 0.00            |
| 47.00           | 3.72                | 2.47               | 0.00            | 100.00          | 3.72                | 2.47               | 0.00            |
| 48.00           | 3.72                | 2.47               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 2.47               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 2.47               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 2.47               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 2.47               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S5: Subcatchment 5**

Runoff = 1.94 cfs @ 12.20 hrs, Volume= 0.217 af, Depth= 0.59"  
 Routed to Pond 5ST : Existing Sediment Trap

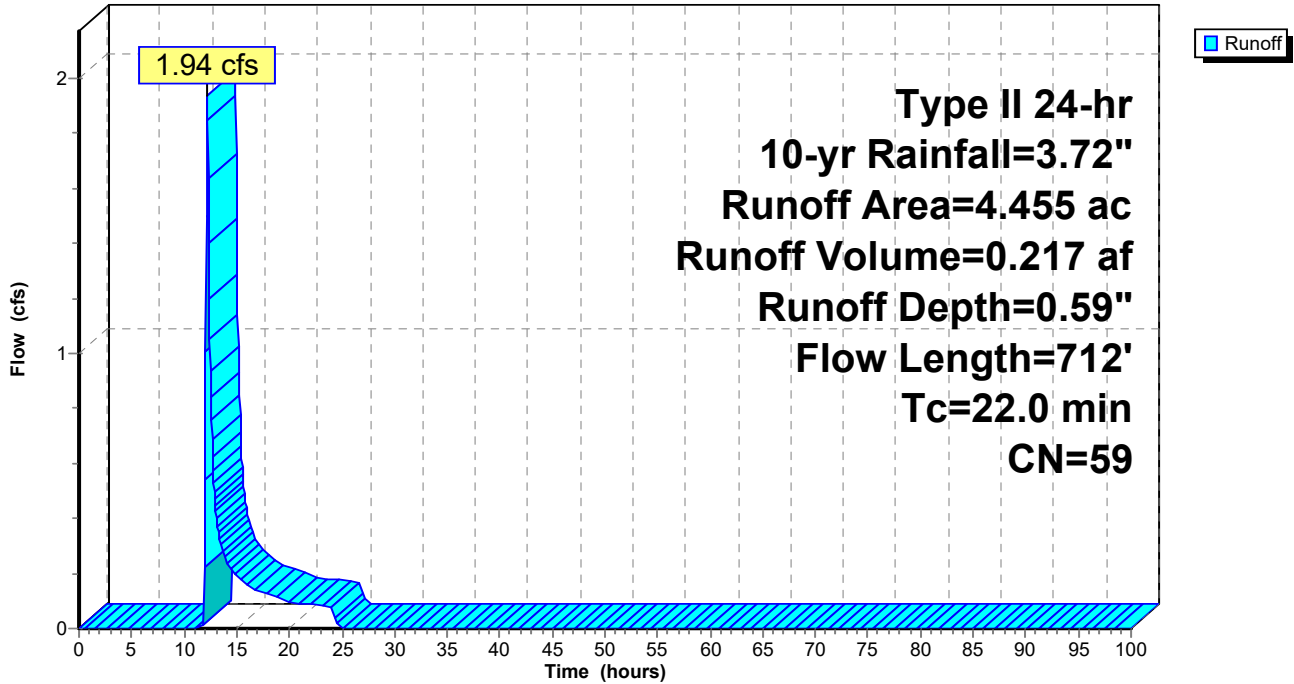
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.583     | 30 | Woods, Good, HSG A                   |
| 0.823     | 30 | Meadow, non-grazed, HSG A            |
| 1.339     | 77 | Fallow, bare soil, HSG A             |
| 0.095     | 94 | Fallow, bare soil, HSG D             |
| 1.532     | 67 | Row crops, straight row, Good, HSG A |
| 0.083     | 89 | Row crops, straight row, Good, HSG D |
| 4.455     | 59 | Weighted Average                     |
| 4.455     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.1     | 44            | 0.0120        | 0.07              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59"                    |
| 3.5      | 56            | 0.0117        | 0.26              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.3      | 17            | 0.0095        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.9      | 40            | 0.0113        | 0.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.7      | 230           | 0.0105        | 1.02              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.4      | 50            | 0.0402        | 2.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.5      | 113           | 0.0156        | 1.25              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.4      | 124           | 0.0230        | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 25            | 0.0940        | 3.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 13            | 0.0790        | 2.81              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 22.0     | 712           | Total         |                   |                |   |

### Subcatchment S5: Subcatchment 5

Hydrograph



**Hydrograph for Subcatchment S5: Subcatchment 5**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.59            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.59            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.59            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.59            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.59            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.59            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.59            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.59            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.59            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.59            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.59            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.59            | 0.00         |
| 12.00        | 2.47             | 0.14            | <b>0.54</b>  | 65.00        | 3.72             | 0.59            | 0.00         |
| 13.00        | 2.87             | 0.26            | <b>0.43</b>  | 66.00        | 3.72             | 0.59            | 0.00         |
| 14.00        | 3.05             | 0.32            | 0.25         | 67.00        | 3.72             | 0.59            | 0.00         |
| 15.00        | 3.18             | 0.36            | 0.20         | 68.00        | 3.72             | 0.59            | 0.00         |
| 16.00        | 3.27             | 0.40            | 0.16         | 69.00        | 3.72             | 0.59            | 0.00         |
| 17.00        | 3.35             | 0.43            | 0.14         | 70.00        | 3.72             | 0.59            | 0.00         |
| 18.00        | 3.43             | 0.46            | 0.13         | 71.00        | 3.72             | 0.59            | 0.00         |
| 19.00        | 3.49             | 0.49            | 0.11         | 72.00        | 3.72             | 0.59            | 0.00         |
| 20.00        | 3.54             | 0.51            | 0.10         | 73.00        | 3.72             | 0.59            | 0.00         |
| 21.00        | 3.59             | 0.53            | 0.09         | 74.00        | 3.72             | 0.59            | 0.00         |
| 22.00        | 3.63             | 0.55            | 0.09         | 75.00        | 3.72             | 0.59            | 0.00         |
| 23.00        | 3.68             | 0.57            | 0.08         | 76.00        | 3.72             | 0.59            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.59</b>     | 0.08         | 77.00        | 3.72             | 0.59            | 0.00         |
| 25.00        | 3.72             | 0.59            | 0.00         | 78.00        | 3.72             | 0.59            | 0.00         |
| 26.00        | 3.72             | 0.59            | 0.00         | 79.00        | 3.72             | 0.59            | 0.00         |
| 27.00        | 3.72             | 0.59            | 0.00         | 80.00        | 3.72             | 0.59            | 0.00         |
| 28.00        | 3.72             | 0.59            | 0.00         | 81.00        | 3.72             | 0.59            | 0.00         |
| 29.00        | 3.72             | 0.59            | 0.00         | 82.00        | 3.72             | 0.59            | 0.00         |
| 30.00        | 3.72             | 0.59            | 0.00         | 83.00        | 3.72             | 0.59            | 0.00         |
| 31.00        | 3.72             | 0.59            | 0.00         | 84.00        | 3.72             | 0.59            | 0.00         |
| 32.00        | 3.72             | 0.59            | 0.00         | 85.00        | 3.72             | 0.59            | 0.00         |
| 33.00        | 3.72             | 0.59            | 0.00         | 86.00        | 3.72             | 0.59            | 0.00         |
| 34.00        | 3.72             | 0.59            | 0.00         | 87.00        | 3.72             | 0.59            | 0.00         |
| 35.00        | 3.72             | 0.59            | 0.00         | 88.00        | 3.72             | 0.59            | 0.00         |
| 36.00        | 3.72             | 0.59            | 0.00         | 89.00        | 3.72             | 0.59            | 0.00         |
| 37.00        | 3.72             | 0.59            | 0.00         | 90.00        | 3.72             | 0.59            | 0.00         |
| 38.00        | 3.72             | 0.59            | 0.00         | 91.00        | 3.72             | 0.59            | 0.00         |
| 39.00        | 3.72             | 0.59            | 0.00         | 92.00        | 3.72             | 0.59            | 0.00         |
| 40.00        | 3.72             | 0.59            | 0.00         | 93.00        | 3.72             | 0.59            | 0.00         |
| 41.00        | 3.72             | 0.59            | 0.00         | 94.00        | 3.72             | 0.59            | 0.00         |
| 42.00        | 3.72             | 0.59            | 0.00         | 95.00        | 3.72             | 0.59            | 0.00         |
| 43.00        | 3.72             | 0.59            | 0.00         | 96.00        | 3.72             | 0.59            | 0.00         |
| 44.00        | 3.72             | 0.59            | 0.00         | 97.00        | 3.72             | 0.59            | 0.00         |
| 45.00        | 3.72             | 0.59            | 0.00         | 98.00        | 3.72             | 0.59            | 0.00         |
| 46.00        | 3.72             | 0.59            | 0.00         | 99.00        | 3.72             | 0.59            | 0.00         |
| 47.00        | 3.72             | 0.59            | 0.00         | 100.00       | 3.72             | 0.59            | 0.00         |
| 48.00        | 3.72             | 0.59            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.59            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.59            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.59            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.59            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S6: Subcatchment 6**

Runoff = 0.99 cfs @ 12.51 hrs, Volume= 0.138 af, Depth= 1.67"  
 Routed to Link AP5 : Analysis Point 5

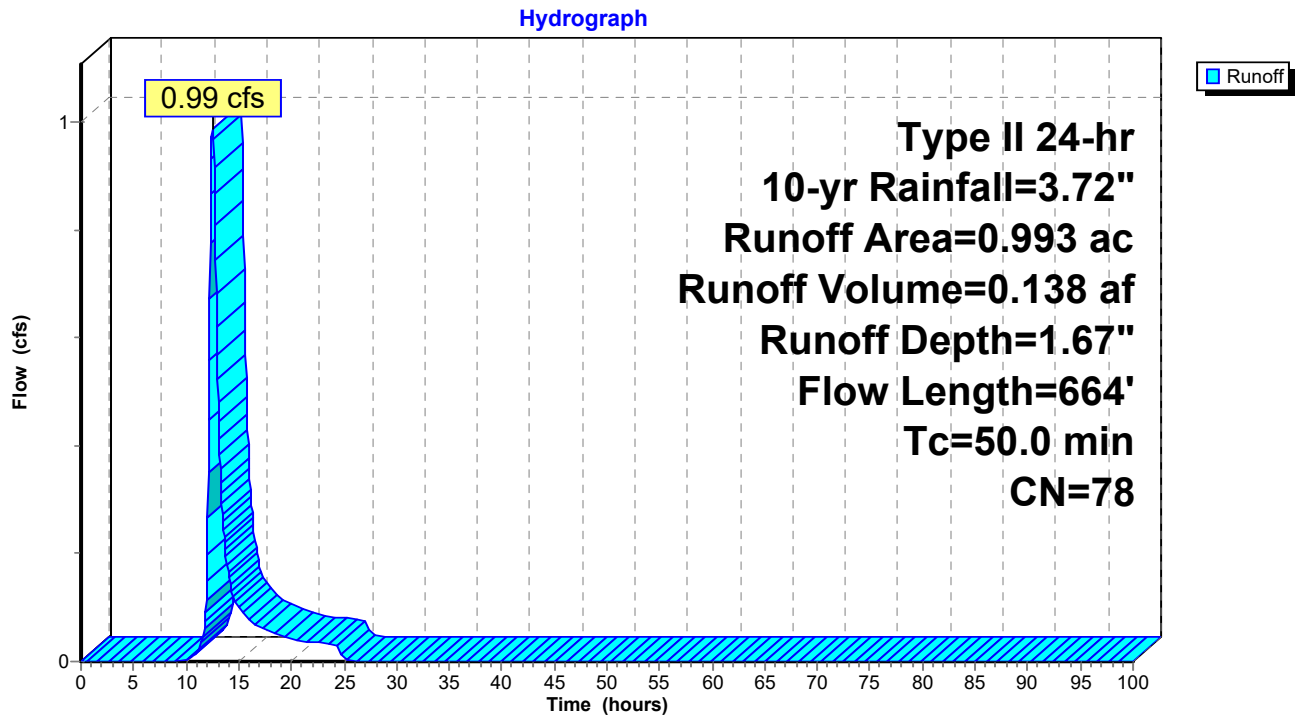
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.993     | 78 | Meadow, non-grazed, HSG D |
| 0.993     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 29.0     | 100           | 0.0013        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.4      | 10            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.6      | 15            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.3      | 9             | 0.0057        | 0.53              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0083        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 209           | 0.0047        | 0.48              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2      | 81            | 0.0244        | 1.09              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 50.0     | 664           | Total         |                   |                |   |

### Subcatchment S6: Subcatchment 6



**Hydrograph for Subcatchment S6: Subcatchment 6**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 1.67            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 1.67            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 1.67            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 1.67            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 1.67            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 1.67            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 1.67            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 1.67            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 1.67            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 1.67            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 1.67            | 0.00         |
| 11.00        | 0.87             | 0.03            | 0.02         | 64.00        | 3.72             | 1.67            | 0.00         |
| 12.00        | 2.47             | 0.77            | <b>0.20</b>  | 65.00        | 3.72             | 1.67            | 0.00         |
| 13.00        | 2.87             | 1.04            | <b>0.52</b>  | 66.00        | 3.72             | 1.67            | 0.00         |
| 14.00        | 3.05             | 1.16            | 0.16         | 67.00        | 3.72             | 1.67            | 0.00         |
| 15.00        | 3.18             | 1.26            | 0.10         | 68.00        | 3.72             | 1.67            | 0.00         |
| 16.00        | 3.27             | 1.33            | 0.08         | 69.00        | 3.72             | 1.67            | 0.00         |
| 17.00        | 3.35             | 1.39            | 0.06         | 70.00        | 3.72             | 1.67            | 0.00         |
| 18.00        | 3.43             | 1.44            | 0.06         | 71.00        | 3.72             | 1.67            | 0.00         |
| 19.00        | 3.49             | 1.49            | 0.05         | 72.00        | 3.72             | 1.67            | 0.00         |
| 20.00        | 3.54             | 1.53            | 0.04         | 73.00        | 3.72             | 1.67            | 0.00         |
| 21.00        | 3.59             | 1.57            | 0.04         | 74.00        | 3.72             | 1.67            | 0.00         |
| 22.00        | 3.63             | 1.60            | 0.04         | 75.00        | 3.72             | 1.67            | 0.00         |
| 23.00        | 3.68             | 1.63            | 0.03         | 76.00        | 3.72             | 1.67            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>1.67</b>     | 0.03         | 77.00        | 3.72             | 1.67            | 0.00         |
| 25.00        | 3.72             | 1.67            | 0.01         | 78.00        | 3.72             | 1.67            | 0.00         |
| 26.00        | 3.72             | 1.67            | 0.00         | 79.00        | 3.72             | 1.67            | 0.00         |
| 27.00        | 3.72             | 1.67            | 0.00         | 80.00        | 3.72             | 1.67            | 0.00         |
| 28.00        | 3.72             | 1.67            | 0.00         | 81.00        | 3.72             | 1.67            | 0.00         |
| 29.00        | 3.72             | 1.67            | 0.00         | 82.00        | 3.72             | 1.67            | 0.00         |
| 30.00        | 3.72             | 1.67            | 0.00         | 83.00        | 3.72             | 1.67            | 0.00         |
| 31.00        | 3.72             | 1.67            | 0.00         | 84.00        | 3.72             | 1.67            | 0.00         |
| 32.00        | 3.72             | 1.67            | 0.00         | 85.00        | 3.72             | 1.67            | 0.00         |
| 33.00        | 3.72             | 1.67            | 0.00         | 86.00        | 3.72             | 1.67            | 0.00         |
| 34.00        | 3.72             | 1.67            | 0.00         | 87.00        | 3.72             | 1.67            | 0.00         |
| 35.00        | 3.72             | 1.67            | 0.00         | 88.00        | 3.72             | 1.67            | 0.00         |
| 36.00        | 3.72             | 1.67            | 0.00         | 89.00        | 3.72             | 1.67            | 0.00         |
| 37.00        | 3.72             | 1.67            | 0.00         | 90.00        | 3.72             | 1.67            | 0.00         |
| 38.00        | 3.72             | 1.67            | 0.00         | 91.00        | 3.72             | 1.67            | 0.00         |
| 39.00        | 3.72             | 1.67            | 0.00         | 92.00        | 3.72             | 1.67            | 0.00         |
| 40.00        | 3.72             | 1.67            | 0.00         | 93.00        | 3.72             | 1.67            | 0.00         |
| 41.00        | 3.72             | 1.67            | 0.00         | 94.00        | 3.72             | 1.67            | 0.00         |
| 42.00        | 3.72             | 1.67            | 0.00         | 95.00        | 3.72             | 1.67            | 0.00         |
| 43.00        | 3.72             | 1.67            | 0.00         | 96.00        | 3.72             | 1.67            | 0.00         |
| 44.00        | 3.72             | 1.67            | 0.00         | 97.00        | 3.72             | 1.67            | 0.00         |
| 45.00        | 3.72             | 1.67            | 0.00         | 98.00        | 3.72             | 1.67            | 0.00         |
| 46.00        | 3.72             | 1.67            | 0.00         | 99.00        | 3.72             | 1.67            | 0.00         |
| 47.00        | 3.72             | 1.67            | 0.00         | 100.00       | 3.72             | 1.67            | 0.00         |
| 48.00        | 3.72             | 1.67            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 1.67            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 1.67            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 1.67            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 1.67            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S7: Subcatchment 7**

Runoff = 5.13 cfs @ 12.28 hrs, Volume= 0.553 af, Depth= 1.09"

Routed to Link AP6 : Analysis Point 6

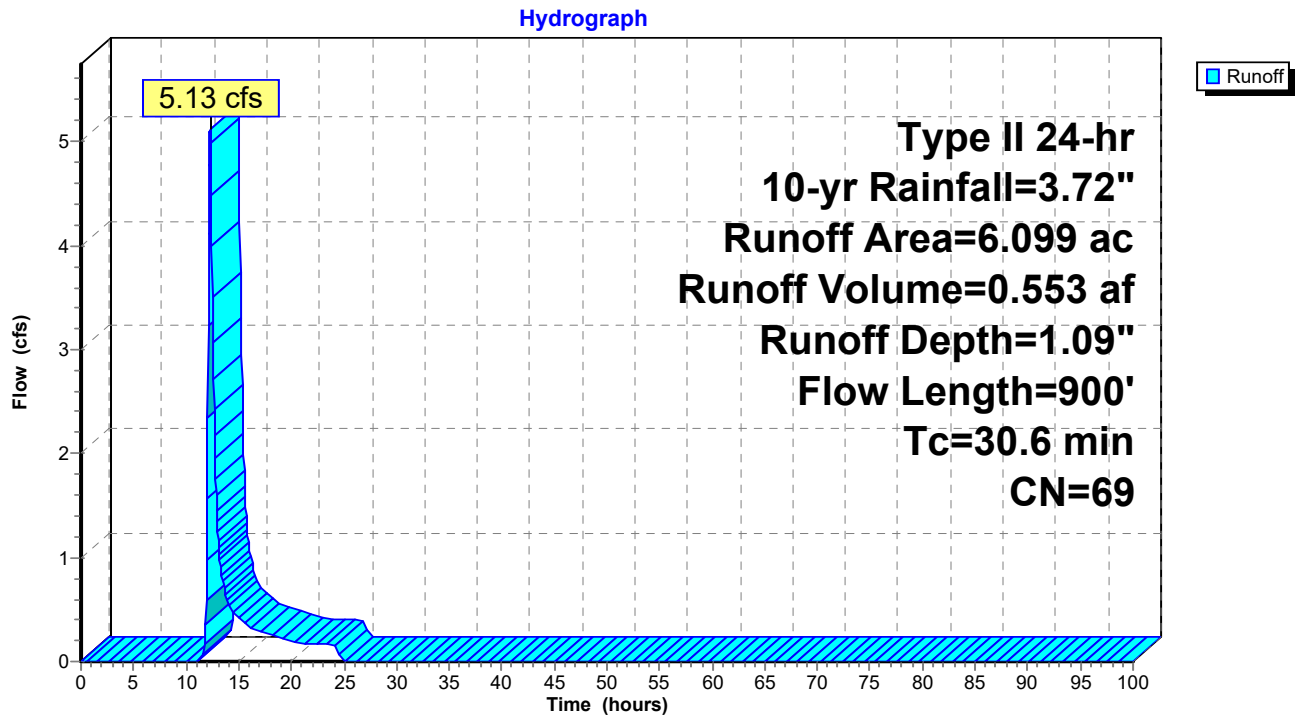
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.054     | 77 | Woods, Good, HSG D                   |
| 1.251     | 30 | Meadow, non-grazed, HSG A            |
| 0.578     | 78 | Meadow, non-grazed, HSG D            |
| 0.291     | 77 | Fallow, bare soil, HSG A             |
| 0.576     | 94 | Fallow, bare soil, HSG D             |
| 1.716     | 67 | Row crops, straight row, Good, HSG A |
| 1.633     | 89 | Row crops, straight row, Good, HSG D |
| 6.099     | 69 | Weighted Average                     |
| 6.099     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 13.2     | 100           | 0.0158        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Cultivated: Residue>20% n= 0.170 P2= 2.59"          |
| 4.9      | 348           | 0.0170        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 1.3      | 83            | 0.0137        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 2.5      | 51            | 0.0012        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 1.6      | 56            | 0.0044        | 0.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 0.9      | 24            | 0.0021        | 0.46              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 6.2      | 238           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps      |
| 30.6     | 900           | Total         |                   |                |  |



### Subcatchment S7: Subcatchment 7



**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 1.09               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 1.09               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 1.09               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 1.09               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 1.09               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 1.09               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 1.09               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 1.09               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.00            | 61.00           | 3.72                | 1.09               | 0.00            |
| 9.00            | 0.55                | 0.00               | 0.00            | 62.00           | 3.72                | 1.09               | 0.00            |
| 10.00           | 0.67                | 0.00               | 0.00            | 63.00           | 3.72                | 1.09               | 0.00            |
| 11.00           | 0.87                | 0.00               | 0.00            | 64.00           | 3.72                | 1.09               | 0.00            |
| 12.00           | 2.47                | 0.41               | <b>1.56</b>     | 65.00           | 3.72                | 1.09               | 0.00            |
| 13.00           | 2.87                | 0.60               | <b>1.24</b>     | 66.00           | 3.72                | 1.09               | 0.00            |
| 14.00           | 3.05                | 0.70               | 0.57            | 67.00           | 3.72                | 1.09               | 0.00            |
| 15.00           | 3.18                | 0.77               | 0.42            | 68.00           | 3.72                | 1.09               | 0.00            |
| 16.00           | 3.27                | 0.82               | 0.34            | 69.00           | 3.72                | 1.09               | 0.00            |
| 17.00           | 3.35                | 0.87               | 0.29            | 70.00           | 3.72                | 1.09               | 0.00            |
| 18.00           | 3.43                | 0.91               | 0.26            | 71.00           | 3.72                | 1.09               | 0.00            |
| 19.00           | 3.49                | 0.95               | 0.23            | 72.00           | 3.72                | 1.09               | 0.00            |
| 20.00           | 3.54                | 0.98               | 0.19            | 73.00           | 3.72                | 1.09               | 0.00            |
| 21.00           | 3.59                | 1.01               | 0.18            | 74.00           | 3.72                | 1.09               | 0.00            |
| 22.00           | 3.63                | 1.04               | 0.17            | 75.00           | 3.72                | 1.09               | 0.00            |
| 23.00           | 3.68                | 1.06               | 0.17            | 76.00           | 3.72                | 1.09               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>1.09</b>        | 0.16            | 77.00           | 3.72                | 1.09               | 0.00            |
| 25.00           | 3.72                | 1.09               | 0.01            | 78.00           | 3.72                | 1.09               | 0.00            |
| 26.00           | 3.72                | 1.09               | 0.00            | 79.00           | 3.72                | 1.09               | 0.00            |
| 27.00           | 3.72                | 1.09               | 0.00            | 80.00           | 3.72                | 1.09               | 0.00            |
| 28.00           | 3.72                | 1.09               | 0.00            | 81.00           | 3.72                | 1.09               | 0.00            |
| 29.00           | 3.72                | 1.09               | 0.00            | 82.00           | 3.72                | 1.09               | 0.00            |
| 30.00           | 3.72                | 1.09               | 0.00            | 83.00           | 3.72                | 1.09               | 0.00            |
| 31.00           | 3.72                | 1.09               | 0.00            | 84.00           | 3.72                | 1.09               | 0.00            |
| 32.00           | 3.72                | 1.09               | 0.00            | 85.00           | 3.72                | 1.09               | 0.00            |
| 33.00           | 3.72                | 1.09               | 0.00            | 86.00           | 3.72                | 1.09               | 0.00            |
| 34.00           | 3.72                | 1.09               | 0.00            | 87.00           | 3.72                | 1.09               | 0.00            |
| 35.00           | 3.72                | 1.09               | 0.00            | 88.00           | 3.72                | 1.09               | 0.00            |
| 36.00           | 3.72                | 1.09               | 0.00            | 89.00           | 3.72                | 1.09               | 0.00            |
| 37.00           | 3.72                | 1.09               | 0.00            | 90.00           | 3.72                | 1.09               | 0.00            |
| 38.00           | 3.72                | 1.09               | 0.00            | 91.00           | 3.72                | 1.09               | 0.00            |
| 39.00           | 3.72                | 1.09               | 0.00            | 92.00           | 3.72                | 1.09               | 0.00            |
| 40.00           | 3.72                | 1.09               | 0.00            | 93.00           | 3.72                | 1.09               | 0.00            |
| 41.00           | 3.72                | 1.09               | 0.00            | 94.00           | 3.72                | 1.09               | 0.00            |
| 42.00           | 3.72                | 1.09               | 0.00            | 95.00           | 3.72                | 1.09               | 0.00            |
| 43.00           | 3.72                | 1.09               | 0.00            | 96.00           | 3.72                | 1.09               | 0.00            |
| 44.00           | 3.72                | 1.09               | 0.00            | 97.00           | 3.72                | 1.09               | 0.00            |
| 45.00           | 3.72                | 1.09               | 0.00            | 98.00           | 3.72                | 1.09               | 0.00            |
| 46.00           | 3.72                | 1.09               | 0.00            | 99.00           | 3.72                | 1.09               | 0.00            |
| 47.00           | 3.72                | 1.09               | 0.00            | 100.00          | 3.72                | 1.09               | 0.00            |
| 48.00           | 3.72                | 1.09               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 1.09               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 1.09               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 1.09               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 1.09               | 0.00            |                 |                     |                    |                 |

**Summary for Pond 3ST: Existing Sediment Trap**

Inflow Area = 9.901 ac, 9.99% Impervious, Inflow Depth = 0.35" for 10-yr event  
 Inflow = 1.22 cfs @ 12.50 hrs, Volume= 0.289 af  
 Outflow = 1.02 cfs @ 12.72 hrs, Volume= 0.278 af, Atten= 16%, Lag= 13.0 min  
 Primary = 1.02 cfs @ 12.72 hrs, Volume= 0.278 af  
 Routed to Pond 4ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.42' Surf.Area= 0.130 ac Storage= 0.177 af  
 Peak Elev= 337.62' @ 12.72 hrs Surf.Area= 0.141 ac Storage= 0.204 af (0.028 af above start)

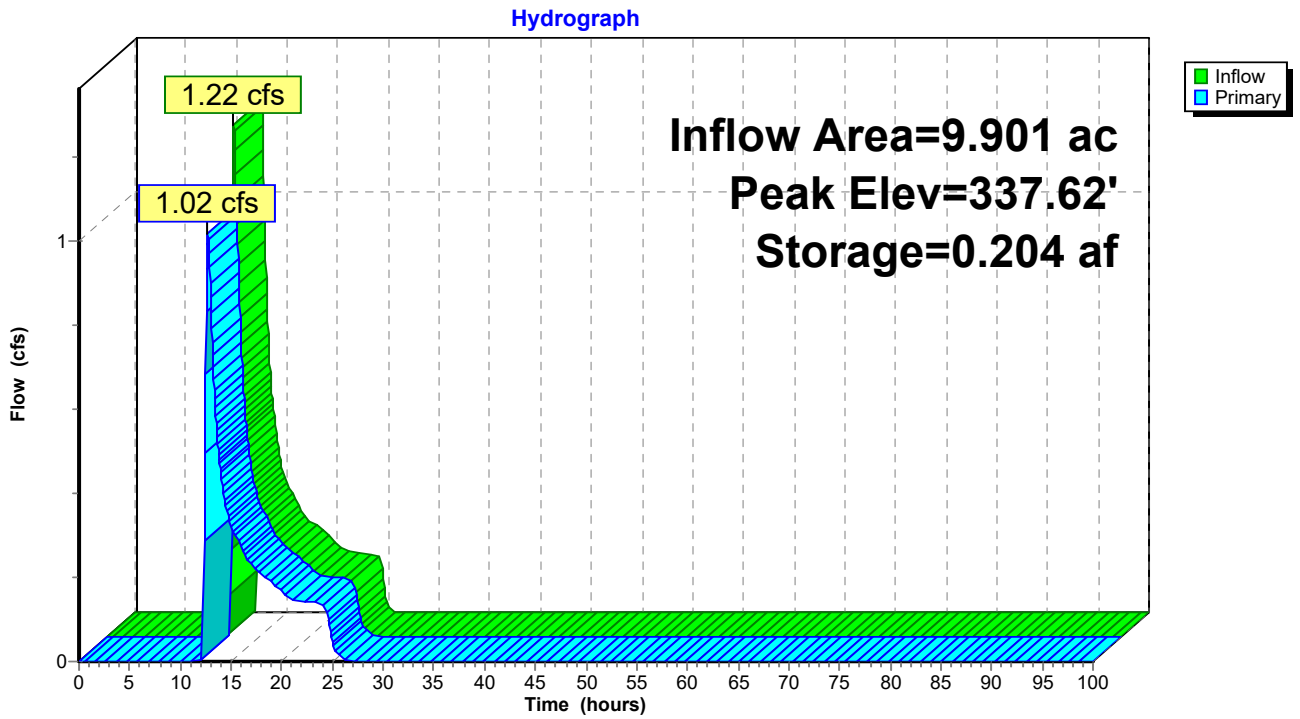
Plug-Flow detention time= 483.6 min calculated for 0.102 af (35% of inflow)  
 Center-of-Mass det. time= 27.5 min ( 998.7 - 971.2 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 335.00'              | 0.261 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 335.00              | 0.023                | 277.9            | 0.000  | 0.000                    | 0.023               |  |
| 336.00              | 0.063                | 408.6            | 0.041  | 0.041                    | 0.187               |  |
| 337.00              | 0.109                | 536.8            | 0.085  | 0.126                    | 0.409               |  |
| 338.00              | 0.163                | 586.1            | 0.135  | 0.261                    | 0.511               |  |

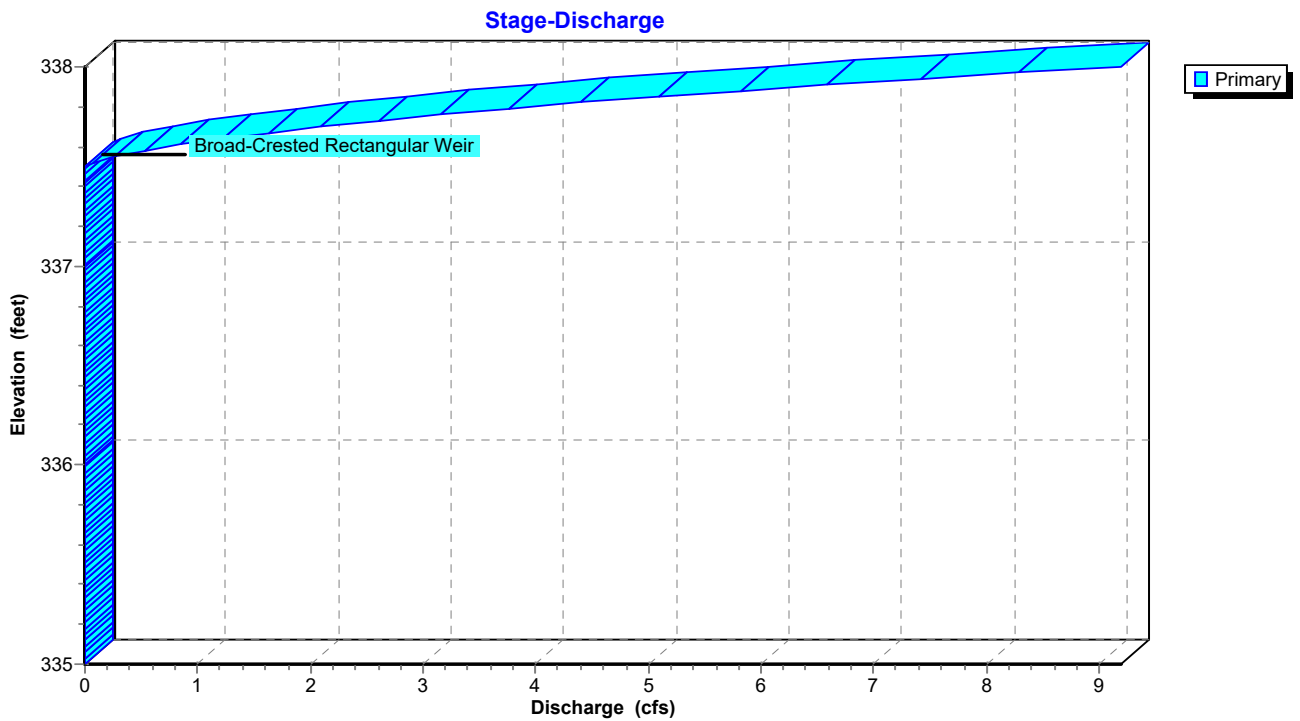
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 337.50' | <b>10.0' long x 5.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88                         |  |  |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=1.02 cfs @ 12.72 hrs HW=337.62' TW=335.66' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 1.02 cfs @ 0.82 fps)

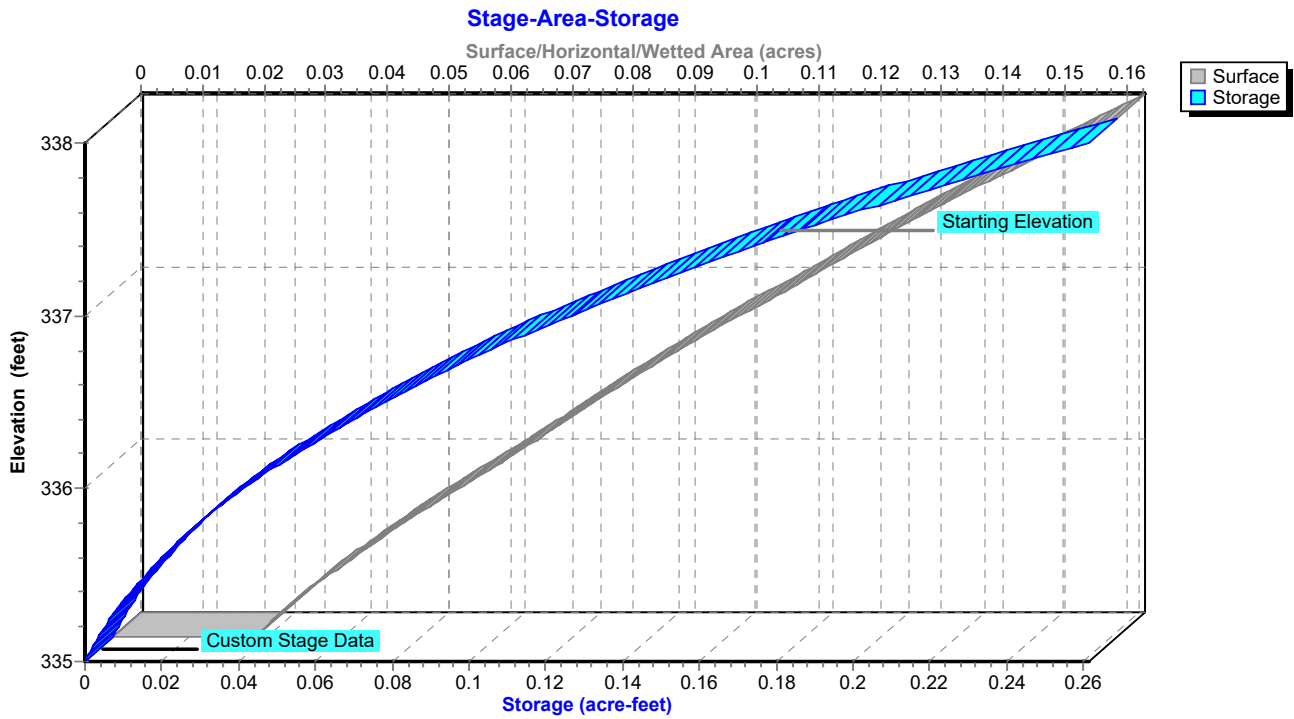
**Pond 3ST: Existing Sediment Trap**



**Pond 3ST: Existing Sediment Trap**



### Pond 3ST: Existing Sediment Trap



**Hydrograph for Pond 3ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 2.50            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 5.00            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 7.50            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 10.00           | 0.00            | 0.177                  | 337.42              | 0.00             |
| 12.50           | <b>1.22</b>     | <b>0.200</b>           | <b>337.59</b>       | <b>0.68</b>      |
| 15.00           | 0.31            | <b>0.195</b>           | <b>337.56</b>       | <b>0.32</b>      |
| 17.50           | 0.21            | 0.193                  | 337.54              | 0.22             |
| 20.00           | 0.16            | 0.192                  | 337.54              | 0.17             |
| 22.50           | 0.14            | 0.192                  | 337.53              | 0.14             |
| 25.00           | 0.01            | 0.189                  | 337.52              | 0.05             |
| 27.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 30.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 32.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 35.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 37.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 40.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 42.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 45.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 47.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 50.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 52.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 55.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 57.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 60.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 62.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 65.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 67.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 70.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 72.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 75.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 77.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 80.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 82.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 85.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 87.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 90.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 92.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 95.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 97.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 100.00          | 0.00            | 0.187                  | 337.50              | 0.00             |

**Stage-Discharge for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 335.00              | 0.00             | 336.06              | 0.00             | 337.12              | 0.00             |
| 335.02              | 0.00             | 336.08              | 0.00             | 337.14              | 0.00             |
| 335.04              | 0.00             | 336.10              | 0.00             | 337.16              | 0.00             |
| 335.06              | 0.00             | 336.12              | 0.00             | 337.18              | 0.00             |
| 335.08              | 0.00             | 336.14              | 0.00             | 337.20              | 0.00             |
| 335.10              | 0.00             | 336.16              | 0.00             | 337.22              | 0.00             |
| 335.12              | 0.00             | 336.18              | 0.00             | 337.24              | 0.00             |
| 335.14              | 0.00             | 336.20              | 0.00             | 337.26              | 0.00             |
| 335.16              | 0.00             | 336.22              | 0.00             | 337.28              | 0.00             |
| 335.18              | 0.00             | 336.24              | 0.00             | 337.30              | 0.00             |
| 335.20              | 0.00             | 336.26              | 0.00             | 337.32              | 0.00             |
| 335.22              | 0.00             | 336.28              | 0.00             | 337.34              | 0.00             |
| 335.24              | 0.00             | 336.30              | 0.00             | 337.36              | 0.00             |
| 335.26              | 0.00             | 336.32              | 0.00             | 337.38              | 0.00             |
| 335.28              | 0.00             | 336.34              | 0.00             | 337.40              | 0.00             |
| 335.30              | 0.00             | 336.36              | 0.00             | 337.42              | 0.00             |
| 335.32              | 0.00             | 336.38              | 0.00             | 337.44              | 0.00             |
| 335.34              | 0.00             | 336.40              | 0.00             | 337.46              | 0.00             |
| 335.36              | 0.00             | 336.42              | 0.00             | 337.48              | 0.00             |
| 335.38              | 0.00             | 336.44              | 0.00             | 337.50              | 0.00             |
| 335.40              | 0.00             | 336.46              | 0.00             | 337.52              | 0.07             |
| 335.42              | 0.00             | 336.48              | 0.00             | 337.54              | 0.19             |
| 335.44              | 0.00             | 336.50              | 0.00             | 337.56              | 0.34             |
| 335.46              | 0.00             | 336.52              | 0.00             | 337.58              | 0.53             |
| 335.48              | 0.00             | 336.54              | 0.00             | 337.60              | 0.74             |
| 335.50              | 0.00             | 336.56              | 0.00             | 337.62              | 0.97             |
| 335.52              | 0.00             | 336.58              | 0.00             | 337.64              | 1.23             |
| 335.54              | 0.00             | 336.60              | 0.00             | 337.66              | 1.50             |
| 335.56              | 0.00             | 336.62              | 0.00             | 337.68              | 1.79             |
| 335.58              | 0.00             | 336.64              | 0.00             | 337.70              | 2.09             |
| 335.60              | 0.00             | 336.66              | 0.00             | 337.72              | 2.43             |
| 335.62              | 0.00             | 336.68              | 0.00             | 337.74              | 2.79             |
| 335.64              | 0.00             | 336.70              | 0.00             | 337.76              | 3.17             |
| 335.66              | 0.00             | 336.72              | 0.00             | 337.78              | 3.56             |
| 335.68              | 0.00             | 336.74              | 0.00             | 337.80              | 3.98             |
| 335.70              | 0.00             | 336.76              | 0.00             | 337.82              | 4.41             |
| 335.72              | 0.00             | 336.78              | 0.00             | 337.84              | 4.86             |
| 335.74              | 0.00             | 336.80              | 0.00             | 337.86              | 5.33             |
| 335.76              | 0.00             | 336.82              | 0.00             | 337.88              | 5.82             |
| 335.78              | 0.00             | 336.84              | 0.00             | 337.90              | 6.32             |
| 335.80              | 0.00             | 336.86              | 0.00             | 337.92              | 6.86             |
| 335.82              | 0.00             | 336.88              | 0.00             | 337.94              | 7.41             |
| 335.84              | 0.00             | 336.90              | 0.00             | 337.96              | 7.99             |
| 335.86              | 0.00             | 336.92              | 0.00             | 337.98              | 8.58             |
| 335.88              | 0.00             | 336.94              | 0.00             | 338.00              | <b>9.19</b>      |
| 335.90              | 0.00             | 336.96              | 0.00             |                     |                  |
| 335.92              | 0.00             | 336.98              | 0.00             |                     |                  |
| 335.94              | 0.00             | 337.00              | 0.00             |                     |                  |
| 335.96              | 0.00             | 337.02              | 0.00             |                     |                  |
| 335.98              | 0.00             | 337.04              | 0.00             |                     |                  |
| 336.00              | 0.00             | 337.06              | 0.00             |                     |                  |
| 336.02              | 0.00             | 337.08              | 0.00             |                     |                  |
| 336.04              | 0.00             | 337.10              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 335.00              | 0.023              | 0.000                  | 337.65              | 0.143              | 0.208                  |
| 335.05              | 0.025              | 0.001                  | 337.70              | 0.146              | 0.215                  |
| 335.10              | 0.026              | 0.002                  | 337.75              | 0.148              | 0.222                  |
| 335.15              | 0.028              | 0.004                  | 337.80              | 0.151              | 0.230                  |
| 335.20              | 0.029              | 0.005                  | 337.85              | 0.154              | 0.238                  |
| 335.25              | 0.031              | 0.007                  | 337.90              | 0.157              | 0.245                  |
| 335.30              | 0.033              | 0.008                  | 337.95              | 0.160              | 0.253                  |
| 335.35              | 0.035              | 0.010                  | 338.00              | <b>0.163</b>       | <b>0.261</b>           |
| 335.40              | 0.037              | 0.012                  |                     |                    |                        |
| 335.45              | 0.039              | 0.014                  |                     |                    |                        |
| 335.50              | 0.041              | 0.016                  |                     |                    |                        |
| 335.55              | 0.043              | 0.018                  |                     |                    |                        |
| 335.60              | 0.045              | 0.020                  |                     |                    |                        |
| 335.65              | 0.047              | 0.022                  |                     |                    |                        |
| 335.70              | 0.049              | 0.025                  |                     |                    |                        |
| 335.75              | 0.051              | 0.027                  |                     |                    |                        |
| 335.80              | 0.053              | 0.030                  |                     |                    |                        |
| 335.85              | 0.056              | 0.032                  |                     |                    |                        |
| 335.90              | 0.058              | 0.035                  |                     |                    |                        |
| 335.95              | 0.061              | 0.038                  |                     |                    |                        |
| 336.00              | 0.063              | 0.041                  |                     |                    |                        |
| 336.05              | 0.065              | 0.045                  |                     |                    |                        |
| 336.10              | 0.067              | 0.048                  |                     |                    |                        |
| 336.15              | 0.069              | 0.051                  |                     |                    |                        |
| 336.20              | 0.071              | 0.055                  |                     |                    |                        |
| 336.25              | 0.073              | 0.058                  |                     |                    |                        |
| 336.30              | 0.075              | 0.062                  |                     |                    |                        |
| 336.35              | 0.078              | 0.066                  |                     |                    |                        |
| 336.40              | 0.080              | 0.070                  |                     |                    |                        |
| 336.45              | 0.082              | 0.074                  |                     |                    |                        |
| 336.50              | 0.084              | 0.078                  |                     |                    |                        |
| 336.55              | 0.087              | 0.082                  |                     |                    |                        |
| 336.60              | 0.089              | 0.087                  |                     |                    |                        |
| 336.65              | 0.091              | 0.091                  |                     |                    |                        |
| 336.70              | 0.094              | 0.096                  |                     |                    |                        |
| 336.75              | 0.096              | 0.101                  |                     |                    |                        |
| 336.80              | 0.099              | 0.106                  |                     |                    |                        |
| 336.85              | 0.101              | 0.111                  |                     |                    |                        |
| 336.90              | 0.104              | 0.116                  |                     |                    |                        |
| 336.95              | 0.106              | 0.121                  |                     |                    |                        |
| 337.00              | 0.109              | 0.126                  |                     |                    |                        |
| 337.05              | 0.111              | 0.132                  |                     |                    |                        |
| 337.10              | 0.114              | 0.137                  |                     |                    |                        |
| 337.15              | 0.116              | 0.143                  |                     |                    |                        |
| 337.20              | 0.119              | 0.149                  |                     |                    |                        |
| 337.25              | 0.121              | 0.155                  |                     |                    |                        |
| 337.30              | 0.124              | 0.161                  |                     |                    |                        |
| 337.35              | 0.127              | 0.168                  |                     |                    |                        |
| 337.40              | 0.129              | 0.174                  |                     |                    |                        |
| 337.45              | 0.132              | 0.180                  |                     |                    |                        |
| 337.50              | 0.135              | 0.187                  |                     |                    |                        |
| 337.55              | 0.137              | 0.194                  |                     |                    |                        |
| 337.60              | 0.140              | 0.201                  |                     |                    |                        |



**Summary for Pond 4ST: Existing Sediment Trap**

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 0.66" for 10-yr event  
 Inflow = 6.34 cfs @ 12.02 hrs, Volume= 0.641 af  
 Outflow = 5.52 cfs @ 12.07 hrs, Volume= 0.596 af, Atten= 13%, Lag= 3.2 min  
 Primary = 5.52 cfs @ 12.07 hrs, Volume= 0.596 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 335.98' @ 12.07 hrs Surf.Area= 0.118 ac Storage= 0.085 af

Plug-Flow detention time= 67.6 min calculated for 0.596 af (93% of inflow)  
 Center-of-Mass det. time= 29.4 min ( 921.5 - 892.1 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 334.00' | 0.003 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #2     | 334.00' | 0.006 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #3     | 334.55' | 0.078 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
|        |         | 0.087 af      | Total Available Storage                                    |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.002             | 58.0          | 0.000                 | 0.000                 | 0.002            |
| 334.55           | 0.008             | 171.7         | 0.003                 | 0.003                 | 0.050            |

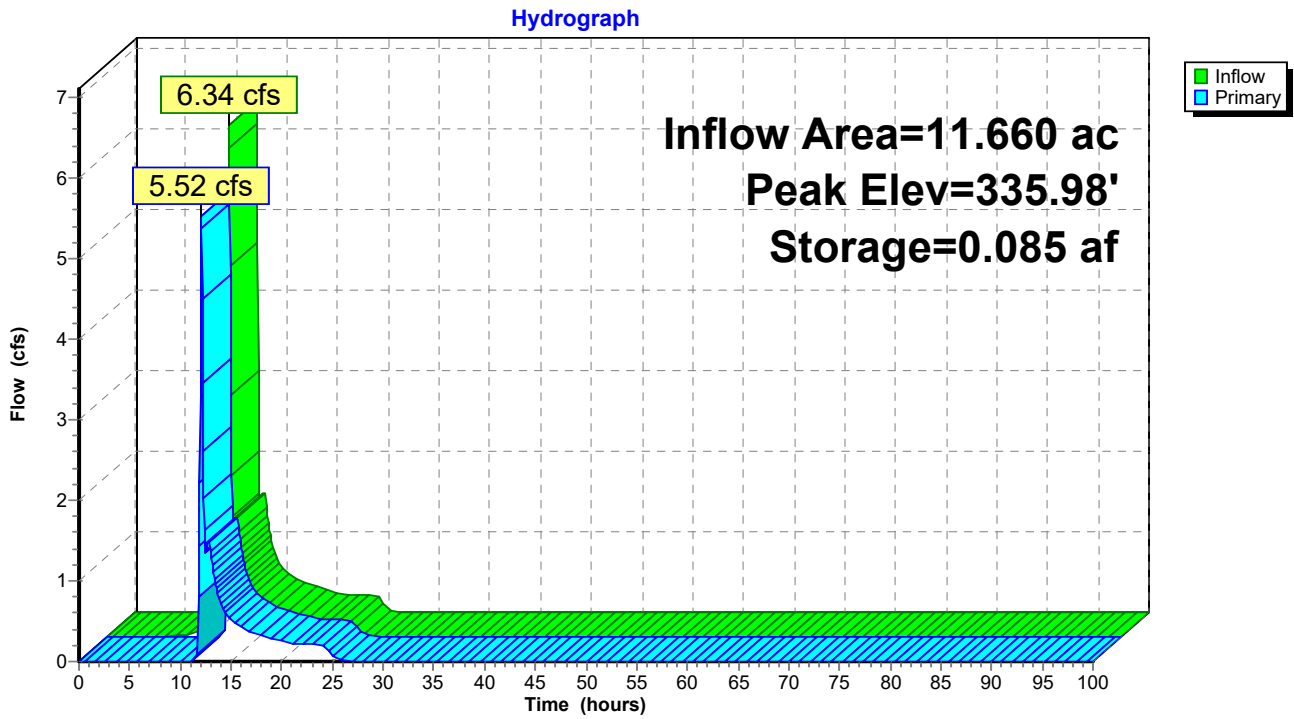
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.004             | 74.4          | 0.000                 | 0.000                 | 0.004            |
| 334.55           | 0.022             | 366.8         | 0.006                 | 0.006                 | 0.240            |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.55           | 0.022             | 366.8         | 0.000                 | 0.000                 | 0.022            |
| 335.00           | 0.042             | 462.0         | 0.014                 | 0.014                 | 0.166            |
| 336.00           | 0.089             | 513.4         | 0.064                 | 0.078                 | 0.258            |

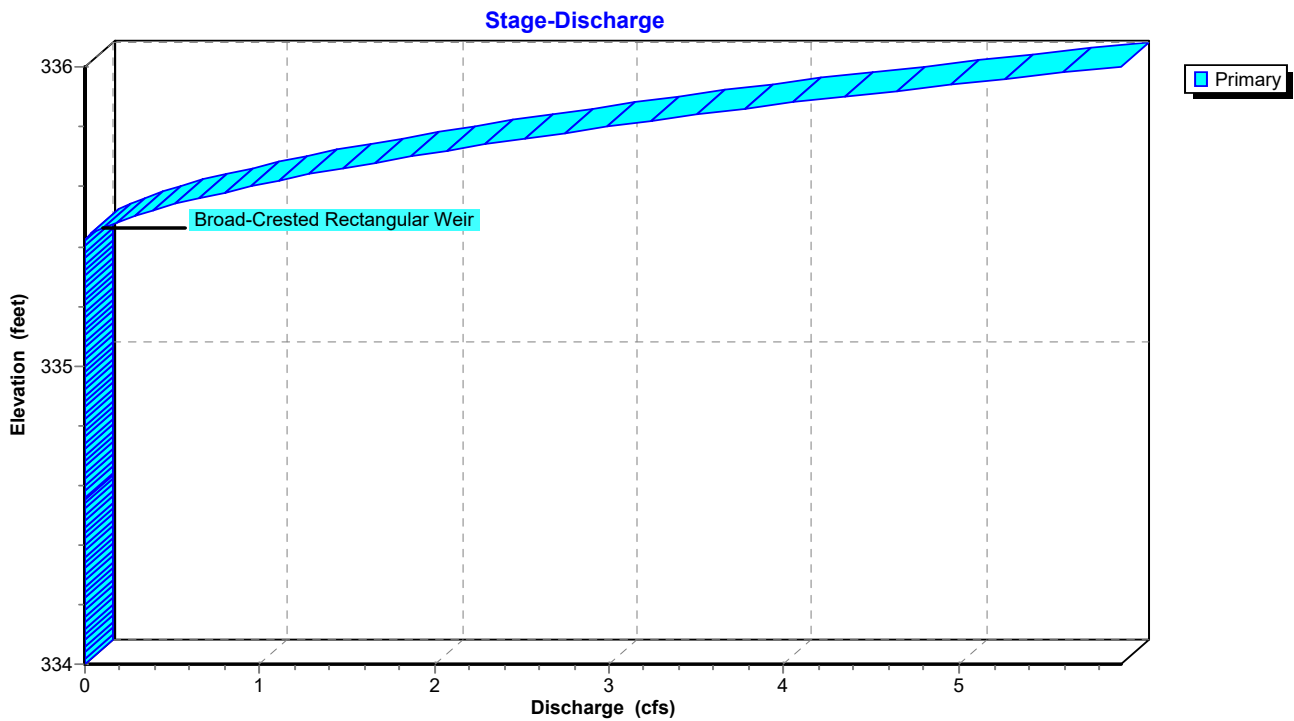
| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 335.42' | <b>5.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=5.40 cfs @ 12.07 hrs HW=335.97' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 5.40 cfs @ 1.97 fps)

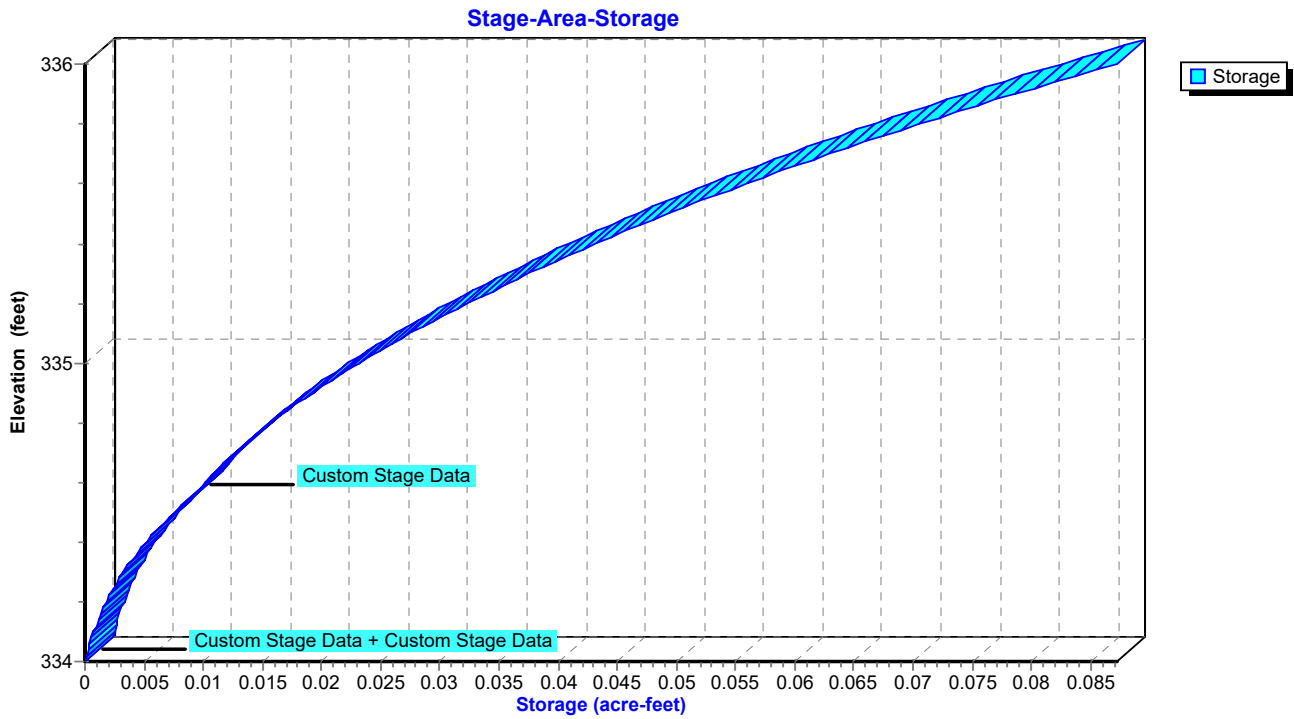
**Pond 4ST: Existing Sediment Trap**



**Pond 4ST: Existing Sediment Trap**



### Pond 4ST: Existing Sediment Trap



**Hydrograph for Pond 4ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 2.50            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 5.00            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 7.50            | 0.02            | 0.001                  | 334.17              | 0.00             |
| 10.00           | <b>0.10</b>     | <b>0.012</b>           | <b>334.67</b>       | <b>0.00</b>      |
| 12.50           | <b>1.40</b>     | <b>0.059</b>           | <b>335.65</b>       | <b>1.34</b>      |
| 15.00           | 0.51            | 0.052                  | 335.54              | 0.52             |
| 17.50           | 0.34            | 0.050                  | 335.51              | 0.34             |
| 20.00           | 0.25            | 0.049                  | 335.49              | 0.25             |
| 22.50           | 0.21            | 0.049                  | 335.49              | 0.21             |
| 25.00           | 0.05            | 0.046                  | 335.45              | 0.07             |
| 27.50           | 0.00            | 0.045                  | 335.42              | 0.00             |
| 30.00           | 0.00            | 0.045                  | 335.42              | 0.00             |
| 32.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 35.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 37.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 40.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 42.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 45.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 47.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 50.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 52.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 55.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 57.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 60.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 62.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 65.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 67.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 70.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 72.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 75.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 77.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 80.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 82.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 85.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 87.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 90.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 92.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 95.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 97.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 100.00          | 0.00            | 0.044                  | 335.42              | 0.00             |

**Stage-Discharge for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 334.00              | 0.00             | 334.53              | 0.00             | 335.06              | 0.00             | 335.59              | 0.87             |
| 334.01              | 0.00             | 334.54              | 0.00             | 335.07              | 0.00             | 335.60              | 0.95             |
| 334.02              | 0.00             | 334.55              | 0.00             | 335.08              | 0.00             | 335.61              | 1.03             |
| 334.03              | 0.00             | 334.56              | 0.00             | 335.09              | 0.00             | 335.62              | 1.11             |
| 334.04              | 0.00             | 334.57              | 0.00             | 335.10              | 0.00             | 335.63              | 1.20             |
| 334.05              | 0.00             | 334.58              | 0.00             | 335.11              | 0.00             | 335.64              | 1.29             |
| 334.06              | 0.00             | 334.59              | 0.00             | 335.12              | 0.00             | 335.65              | 1.38             |
| 334.07              | 0.00             | 334.60              | 0.00             | 335.13              | 0.00             | 335.66              | 1.47             |
| 334.08              | 0.00             | 334.61              | 0.00             | 335.14              | 0.00             | 335.67              | 1.57             |
| 334.09              | 0.00             | 334.62              | 0.00             | 335.15              | 0.00             | 335.68              | 1.66             |
| 334.10              | 0.00             | 334.63              | 0.00             | 335.16              | 0.00             | 335.69              | 1.76             |
| 334.11              | 0.00             | 334.64              | 0.00             | 335.17              | 0.00             | 335.70              | 1.87             |
| 334.12              | 0.00             | 334.65              | 0.00             | 335.18              | 0.00             | 335.71              | 1.97             |
| 334.13              | 0.00             | 334.66              | 0.00             | 335.19              | 0.00             | 335.72              | 2.07             |
| 334.14              | 0.00             | 334.67              | 0.00             | 335.20              | 0.00             | 335.73              | 2.18             |
| 334.15              | 0.00             | 334.68              | 0.00             | 335.21              | 0.00             | 335.74              | 2.29             |
| 334.16              | 0.00             | 334.69              | 0.00             | 335.22              | 0.00             | 335.75              | 2.40             |
| 334.17              | 0.00             | 334.70              | 0.00             | 335.23              | 0.00             | 335.76              | 2.52             |
| 334.18              | 0.00             | 334.71              | 0.00             | 335.24              | 0.00             | 335.77              | 2.63             |
| 334.19              | 0.00             | 334.72              | 0.00             | 335.25              | 0.00             | 335.78              | 2.75             |
| 334.20              | 0.00             | 334.73              | 0.00             | 335.26              | 0.00             | 335.79              | 2.87             |
| 334.21              | 0.00             | 334.74              | 0.00             | 335.27              | 0.00             | 335.80              | 2.99             |
| 334.22              | 0.00             | 334.75              | 0.00             | 335.28              | 0.00             | 335.81              | 3.11             |
| 334.23              | 0.00             | 334.76              | 0.00             | 335.29              | 0.00             | 335.82              | 3.24             |
| 334.24              | 0.00             | 334.77              | 0.00             | 335.30              | 0.00             | 335.83              | 3.37             |
| 334.25              | 0.00             | 334.78              | 0.00             | 335.31              | 0.00             | 335.84              | 3.50             |
| 334.26              | 0.00             | 334.79              | 0.00             | 335.32              | 0.00             | 335.85              | 3.64             |
| 334.27              | 0.00             | 334.80              | 0.00             | 335.33              | 0.00             | 335.86              | 3.78             |
| 334.28              | 0.00             | 334.81              | 0.00             | 335.34              | 0.00             | 335.87              | 3.92             |
| 334.29              | 0.00             | 334.82              | 0.00             | 335.35              | 0.00             | 335.88              | 4.06             |
| 334.30              | 0.00             | 334.83              | 0.00             | 335.36              | 0.00             | 335.89              | 4.20             |
| 334.31              | 0.00             | 334.84              | 0.00             | 335.37              | 0.00             | 335.90              | 4.35             |
| 334.32              | 0.00             | 334.85              | 0.00             | 335.38              | 0.00             | 335.91              | 4.50             |
| 334.33              | 0.00             | 334.86              | 0.00             | 335.39              | 0.00             | 335.92              | 4.65             |
| 334.34              | 0.00             | 334.87              | 0.00             | 335.40              | 0.00             | 335.93              | 4.80             |
| 334.35              | 0.00             | 334.88              | 0.00             | 335.41              | 0.00             | 335.94              | 4.96             |
| 334.36              | 0.00             | 334.89              | 0.00             | 335.42              | 0.00             | 335.95              | 5.11             |
| 334.37              | 0.00             | 334.90              | 0.00             | 335.43              | 0.01             | 335.96              | 5.27             |
| 334.38              | 0.00             | 334.91              | 0.00             | 335.44              | 0.04             | 335.97              | 5.44             |
| 334.39              | 0.00             | 334.92              | 0.00             | 335.45              | 0.06             | 335.98              | 5.60             |
| 334.40              | 0.00             | 334.93              | 0.00             | 335.46              | 0.10             | 335.99              | 5.76             |
| 334.41              | 0.00             | 334.94              | 0.00             | 335.47              | 0.14             | 336.00              | <b>5.93</b>      |
| 334.42              | 0.00             | 334.95              | 0.00             | 335.48              | 0.18             |                     |                  |
| 334.43              | 0.00             | 334.96              | 0.00             | 335.49              | 0.23             |                     |                  |
| 334.44              | 0.00             | 334.97              | 0.00             | 335.50              | 0.28             |                     |                  |
| 334.45              | 0.00             | 334.98              | 0.00             | 335.51              | 0.34             |                     |                  |
| 334.46              | 0.00             | 334.99              | 0.00             | 335.52              | 0.39             |                     |                  |
| 334.47              | 0.00             | 335.00              | 0.00             | 335.53              | 0.45             |                     |                  |
| 334.48              | 0.00             | 335.01              | 0.00             | 335.54              | 0.52             |                     |                  |
| 334.49              | 0.00             | 335.02              | 0.00             | 335.55              | 0.58             |                     |                  |
| 334.50              | 0.00             | 335.03              | 0.00             | 335.56              | 0.65             |                     |                  |
| 334.51              | 0.00             | 335.04              | 0.00             | 335.57              | 0.72             |                     |                  |
| 334.52              | 0.00             | 335.05              | 0.00             | 335.58              | 0.80             |                     |                  |

**Stage-Area-Storage for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Storage<br>(acre-feet) | Elevation<br>(feet) | Storage<br>(acre-feet) |
|---------------------|------------------------|---------------------|------------------------|
| 334.00              | 0.000                  | 335.06              | 0.026                  |
| 334.02              | 0.000                  | 335.08              | 0.027                  |
| 334.04              | 0.000                  | 335.10              | 0.028                  |
| 334.06              | 0.000                  | 335.12              | 0.029                  |
| 334.08              | 0.001                  | 335.14              | 0.029                  |
| 334.10              | 0.001                  | 335.16              | 0.030                  |
| 334.12              | 0.001                  | 335.18              | 0.031                  |
| 334.14              | 0.001                  | 335.20              | 0.032                  |
| 334.16              | 0.001                  | 335.22              | 0.033                  |
| 334.18              | 0.002                  | 335.24              | 0.034                  |
| 334.20              | 0.002                  | 335.26              | 0.035                  |
| 334.22              | 0.002                  | 335.28              | 0.037                  |
| 334.24              | 0.002                  | 335.30              | 0.038                  |
| 334.26              | 0.003                  | 335.32              | 0.039                  |
| 334.28              | 0.003                  | 335.34              | 0.040                  |
| 334.30              | 0.003                  | 335.36              | 0.041                  |
| 334.32              | 0.004                  | 335.38              | 0.042                  |
| 334.34              | 0.004                  | 335.40              | 0.043                  |
| 334.36              | 0.004                  | 335.42              | 0.044                  |
| 334.38              | 0.005                  | 335.44              | 0.046                  |
| 334.40              | 0.005                  | 335.46              | 0.047                  |
| 334.42              | 0.006                  | 335.48              | 0.048                  |
| 334.44              | 0.006                  | 335.50              | 0.049                  |
| 334.46              | 0.007                  | 335.52              | 0.051                  |
| 334.48              | 0.007                  | 335.54              | 0.052                  |
| 334.50              | 0.008                  | 335.56              | 0.053                  |
| 334.52              | 0.008                  | 335.58              | 0.055                  |
| 334.54              | 0.009                  | 335.60              | 0.056                  |
| 334.56              | 0.009                  | 335.62              | 0.057                  |
| 334.58              | 0.010                  | 335.64              | 0.059                  |
| 334.60              | 0.010                  | 335.66              | 0.060                  |
| 334.62              | 0.011                  | 335.68              | 0.062                  |
| 334.64              | 0.011                  | 335.70              | 0.063                  |
| 334.66              | 0.012                  | 335.72              | 0.064                  |
| 334.68              | 0.012                  | 335.74              | 0.066                  |
| 334.70              | 0.013                  | 335.76              | 0.067                  |
| 334.72              | 0.013                  | 335.78              | 0.069                  |
| 334.74              | 0.014                  | 335.80              | 0.071                  |
| 334.76              | 0.015                  | 335.82              | 0.072                  |
| 334.78              | 0.015                  | 335.84              | 0.074                  |
| 334.80              | 0.016                  | 335.86              | 0.075                  |
| 334.82              | 0.016                  | 335.88              | 0.077                  |
| 334.84              | 0.017                  | 335.90              | 0.079                  |
| 334.86              | 0.018                  | 335.92              | 0.080                  |
| 334.88              | 0.019                  | 335.94              | 0.082                  |
| 334.90              | 0.019                  | 335.96              | 0.084                  |
| 334.92              | 0.020                  | 335.98              | 0.085                  |
| 334.94              | 0.021                  | 336.00              | <b>0.087</b>           |
| 334.96              | 0.022                  |                     |                        |
| 334.98              | 0.022                  |                     |                        |
| 335.00              | 0.023                  |                     |                        |
| 335.02              | 0.024                  |                     |                        |
| 335.04              | 0.025                  |                     |                        |

**Summary for Pond 5ST: Existing Sediment Trap**

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.59" for 10-yr event  
 Inflow = 1.94 cfs @ 12.20 hrs, Volume= 0.217 af  
 Outflow = 1.78 cfs @ 12.27 hrs, Volume= 0.217 af, Atten= 8%, Lag= 4.1 min  
 Discarded = 1.78 cfs @ 12.27 hrs, Volume= 0.217 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 327.85' @ 12.27 hrs Surf.Area= 0.018 ac Storage= 0.007 af

Plug-Flow detention time= 1.0 min calculated for 0.217 af (100% of inflow)  
 Center-of-Mass det. time= 1.0 min ( 920.5 - 919.5 )

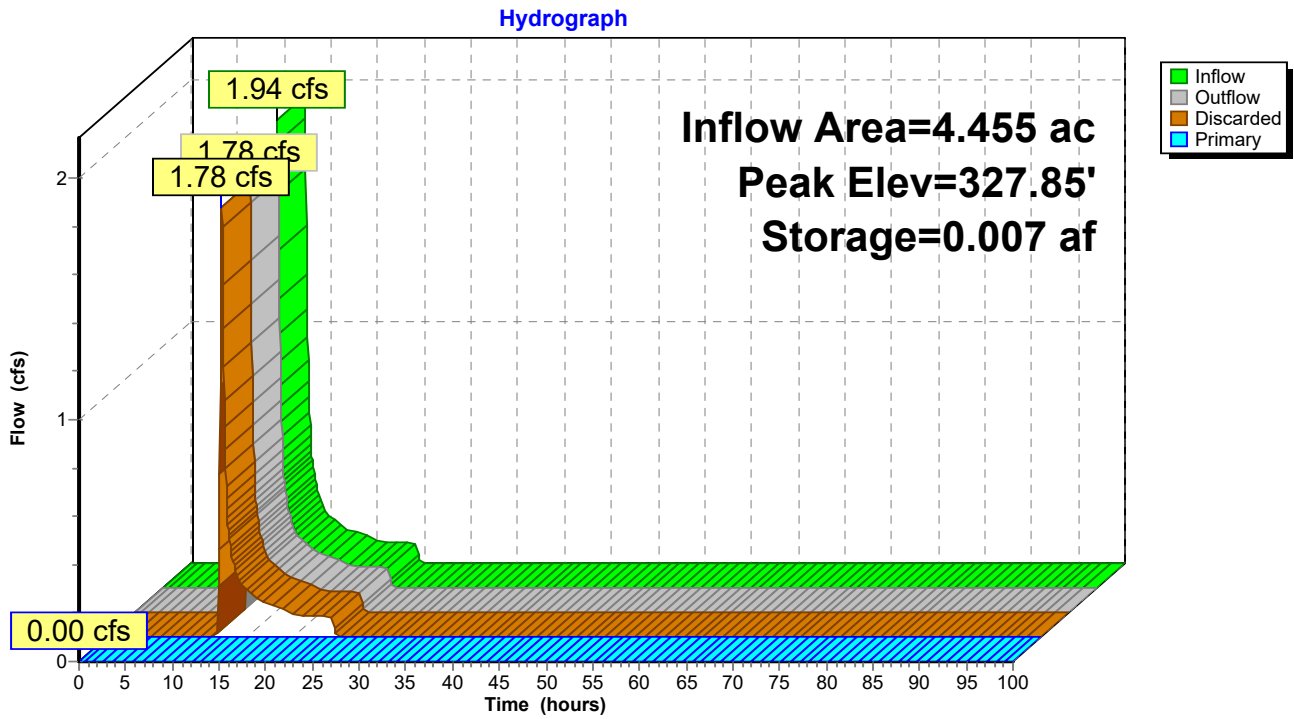
| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |  |
|------------------|-------------------|---------------|--|-----------------------|------------------|--|
| #1               | 327.00'           | 0.230 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |  |
| 327.00           | 0.002             | 70.1          | 0.000  | 0.000                 | 0.002            |  |
| 328.00           | 0.022             | 242.6         | 0.010  | 0.010                 | 0.101            |  |
| 329.00           | 0.048             | 394.7         | 0.034  | 0.044                 | 0.278            |  |
| 330.00           | 0.094             | 554.1         | 0.070  | 0.114                 | 0.554            |  |
| 331.00           | 0.140             | 615.9         | 0.116  | 0.230                 | 0.687            |  |

| Device | Routing   | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Discarded | 327.00' | <b>100.00 in/hr Exfiltration over Horizontal area</b>           |  |  |  |  |  |  |  |  |  |
| #2     | Primary   | 330.00' | <b>12.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83                         |  |  |  |  |  |  |  |  |  |

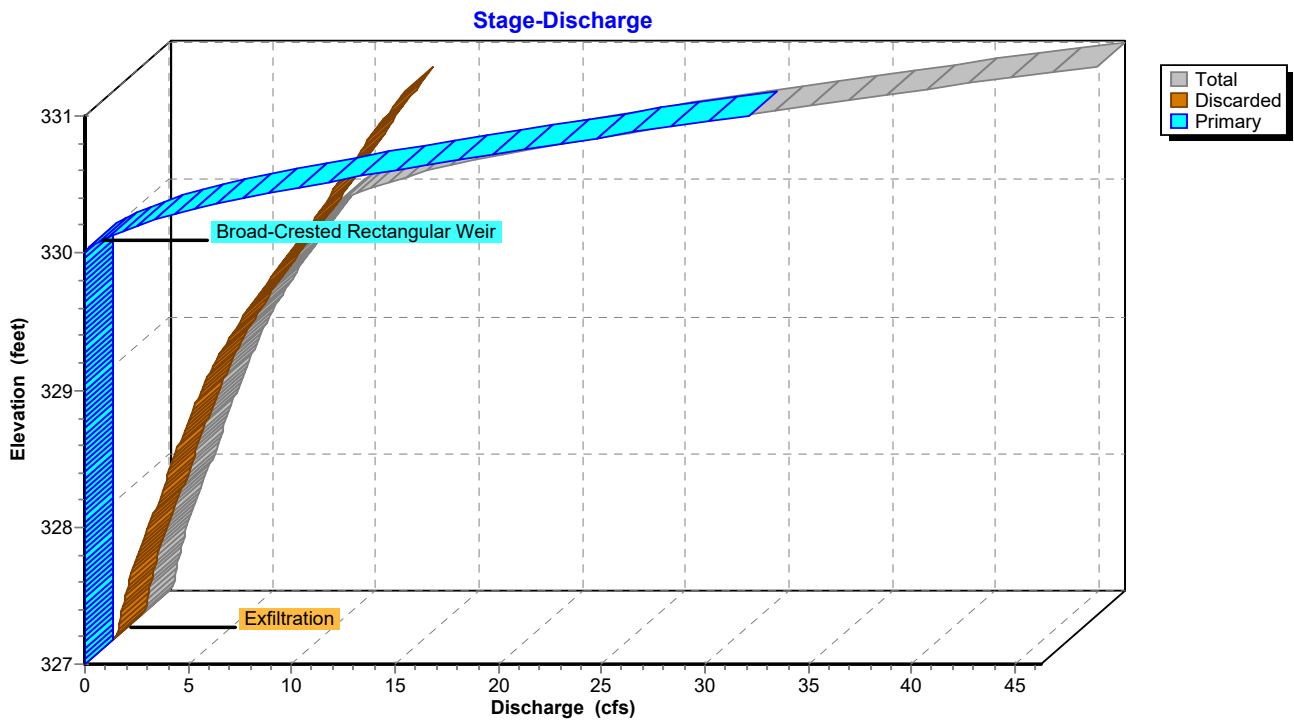
**Discarded OutFlow** Max=1.76 cfs @ 12.27 hrs HW=327.84' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 1.76 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=327.00' TW=0.00' (Dynamic Tailwater)  
 ↑2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond 5ST: Existing Sediment Trap**

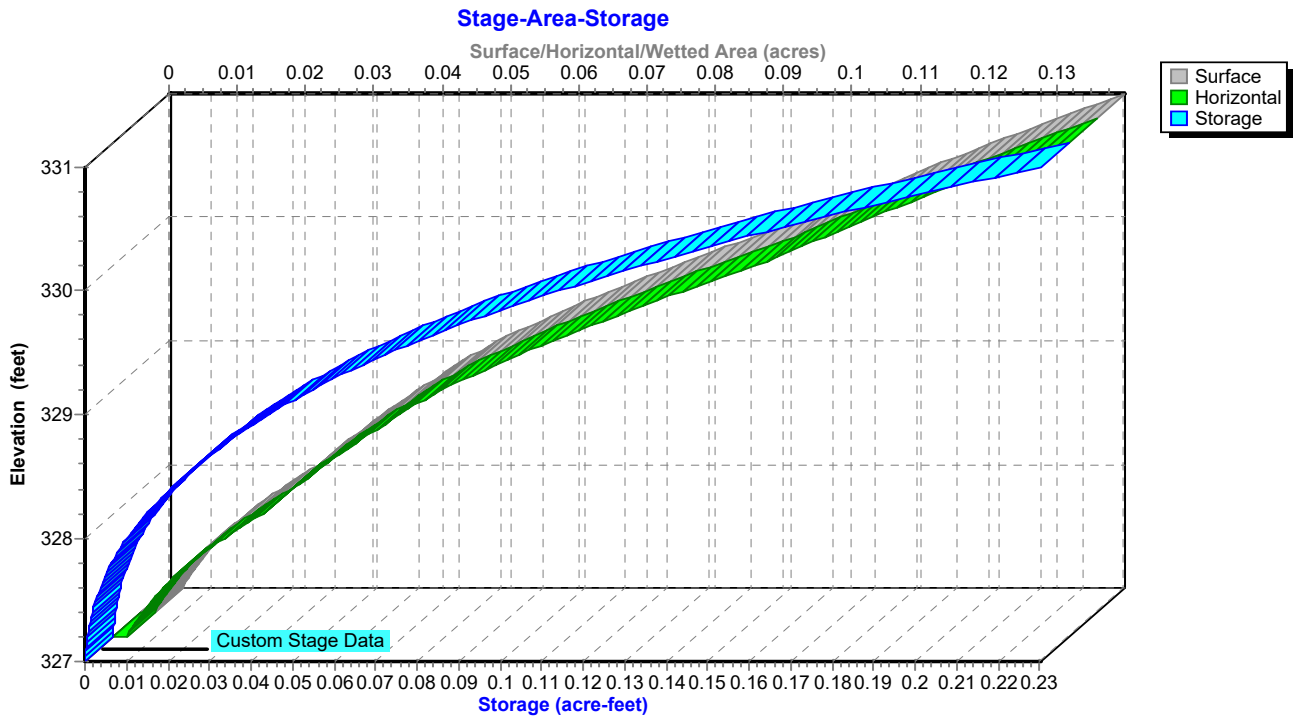


**Pond 5ST: Existing Sediment Trap**





### Pond 5ST: Existing Sediment Trap



**Hydrograph for Pond 5ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|-----------------|---------------|
| 0.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | <b>0.00</b>   |
| 2.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 5.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 7.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0.000</b>        | <b>327.00</b>    | <b>0.00</b>   | <b>0.00</b>     | 0.00          |
| 12.50        | <b>0.94</b>  | <b>0.003</b>        | <b>327.58</b>    | <b>1.12</b>   | <b>1.12</b>     | 0.00          |
| 15.00        | 0.20         | 0.000               | 327.00           | 0.20          | 0.20            | 0.00          |
| 17.50        | 0.13         | 0.000               | 327.00           | 0.13          | 0.13            | 0.00          |
| 20.00        | 0.10         | 0.000               | 327.00           | 0.10          | 0.10            | 0.00          |
| 22.50        | 0.09         | 0.000               | 327.00           | 0.09          | 0.09            | 0.00          |
| 25.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 27.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 30.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 32.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 35.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 37.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 40.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 42.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 45.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 47.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 50.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 52.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 55.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 57.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 60.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 62.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 65.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 67.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 70.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 72.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 75.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 77.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 80.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 82.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 85.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 87.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 90.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 92.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 95.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 97.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 100.00       | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |

**Stage-Discharge for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) |
|---------------------|--------------------|--------------------|------------------|---------------------|--------------------|--------------------|------------------|
| 327.00              | 0.00               | 0.00               | 0.00             | 329.65              | 7.68               | 7.68               | 0.00             |
| 327.05              | 0.25               | 0.25               | 0.00             | 329.70              | 7.92               | 7.92               | 0.00             |
| 327.10              | 0.31               | 0.31               | 0.00             | 329.75              | 8.17               | 8.17               | 0.00             |
| 327.15              | 0.37               | 0.37               | 0.00             | 329.80              | 8.43               | 8.43               | 0.00             |
| 327.20              | 0.43               | 0.43               | 0.00             | 329.85              | 8.68               | 8.68               | 0.00             |
| 327.25              | 0.50               | 0.50               | 0.00             | 329.90              | 8.95               | 8.95               | 0.00             |
| 327.30              | 0.58               | 0.58               | 0.00             | 329.95              | 9.21               | 9.21               | 0.00             |
| 327.35              | 0.66               | 0.66               | 0.00             | 330.00              | 9.48               | 9.48               | 0.00             |
| 327.40              | 0.75               | 0.75               | 0.00             | 330.05              | 10.01              | 9.69               | 0.32             |
| 327.45              | 0.84               | 0.84               | 0.00             | 330.10              | 10.80              | 9.90               | 0.90             |
| 327.50              | 0.94               | 0.94               | 0.00             | 330.15              | 11.77              | 10.12              | 1.65             |
| 327.55              | 1.04               | 1.04               | 0.00             | 330.20              | 12.88              | 10.33              | 2.54             |
| 327.60              | 1.15               | 1.15               | 0.00             | 330.25              | 14.16              | 10.55              | 3.61             |
| 327.65              | 1.27               | 1.27               | 0.00             | 330.30              | 15.58              | 10.77              | 4.81             |
| 327.70              | 1.39               | 1.39               | 0.00             | 330.35              | 17.15              | 11.00              | 6.15             |
| 327.75              | 1.51               | 1.51               | 0.00             | 330.40              | 18.84              | 11.22              | 7.62             |
| 327.80              | 1.64               | 1.64               | 0.00             | 330.45              | 20.72              | 11.45              | 9.26             |
| 327.85              | 1.78               | 1.78               | 0.00             | 330.50              | 22.73              | 11.68              | 11.05            |
| 327.90              | 1.92               | 1.92               | 0.00             | 330.55              | 24.90              | 11.92              | 12.98            |
| 327.95              | 2.07               | 2.07               | 0.00             | 330.60              | 27.21              | 12.15              | 15.06            |
| 328.00              | 2.22               | 2.22               | 0.00             | 330.65              | 29.34              | 12.39              | 16.95            |
| 328.05              | 2.33               | 2.33               | 0.00             | 330.70              | 31.53              | 12.63              | 18.91            |
| 328.10              | 2.44               | 2.44               | 0.00             | 330.75              | 33.80              | 12.87              | 20.93            |
| 328.15              | 2.55               | 2.55               | 0.00             | 330.80              | 36.13              | 13.12              | 23.01            |
| 328.20              | 2.66               | 2.66               | 0.00             | 330.85              | 38.56              | 13.36              | 25.20            |
| 328.25              | 2.78               | 2.78               | 0.00             | 330.90              | 41.07              | 13.61              | 27.46            |
| 328.30              | 2.90               | 2.90               | 0.00             | 330.95              | 43.64              | 13.86              | 29.78            |
| 328.35              | 3.02               | 3.02               | 0.00             | 331.00              | <b>46.28</b>       | <b>14.12</b>       | <b>32.16</b>     |
| 328.40              | 3.15               | 3.15               | 0.00             |                     |                    |                    |                  |
| 328.45              | 3.27               | 3.27               | 0.00             |                     |                    |                    |                  |
| 328.50              | 3.40               | 3.40               | 0.00             |                     |                    |                    |                  |
| 328.55              | 3.54               | 3.54               | 0.00             |                     |                    |                    |                  |
| 328.60              | 3.67               | 3.67               | 0.00             |                     |                    |                    |                  |
| 328.65              | 3.81               | 3.81               | 0.00             |                     |                    |                    |                  |
| 328.70              | 3.95               | 3.95               | 0.00             |                     |                    |                    |                  |
| 328.75              | 4.09               | 4.09               | 0.00             |                     |                    |                    |                  |
| 328.80              | 4.23               | 4.23               | 0.00             |                     |                    |                    |                  |
| 328.85              | 4.38               | 4.38               | 0.00             |                     |                    |                    |                  |
| 328.90              | 4.53               | 4.53               | 0.00             |                     |                    |                    |                  |
| 328.95              | 4.68               | 4.68               | 0.00             |                     |                    |                    |                  |
| 329.00              | 4.84               | 4.84               | 0.00             |                     |                    |                    |                  |
| 329.05              | 5.04               | 5.04               | 0.00             |                     |                    |                    |                  |
| 329.10              | 5.23               | 5.23               | 0.00             |                     |                    |                    |                  |
| 329.15              | 5.44               | 5.44               | 0.00             |                     |                    |                    |                  |
| 329.20              | 5.64               | 5.64               | 0.00             |                     |                    |                    |                  |
| 329.25              | 5.85               | 5.85               | 0.00             |                     |                    |                    |                  |
| 329.30              | 6.07               | 6.07               | 0.00             |                     |                    |                    |                  |
| 329.35              | 6.29               | 6.29               | 0.00             |                     |                    |                    |                  |
| 329.40              | 6.51               | 6.51               | 0.00             |                     |                    |                    |                  |
| 329.45              | 6.74               | 6.74               | 0.00             |                     |                    |                    |                  |
| 329.50              | 6.97               | 6.97               | 0.00             |                     |                    |                    |                  |
| 329.55              | 7.20               | 7.20               | 0.00             |                     |                    |                    |                  |
| 329.60              | 7.44               | 7.44               | 0.00             |                     |                    |                    |                  |

**Stage-Area-Storage for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|-----------------------|------------------------|---------------------|--------------------|-----------------------|------------------------|
| 327.00              | 0.002              | 0.002                 | 0.000                  | 329.65              | 0.076              | 0.076                 | 0.084                  |
| 327.05              | 0.002              | 0.002                 | 0.000                  | 329.70              | 0.079              | 0.079                 | 0.088                  |
| 327.10              | 0.003              | 0.003                 | 0.000                  | 329.75              | 0.081              | 0.081                 | 0.092                  |
| 327.15              | 0.004              | 0.004                 | 0.000                  | 329.80              | 0.084              | 0.084                 | 0.096                  |
| 327.20              | 0.004              | 0.004                 | 0.001                  | 329.85              | 0.086              | 0.086                 | 0.101                  |
| 327.25              | 0.005              | 0.005                 | 0.001                  | 329.90              | 0.089              | 0.089                 | 0.105                  |
| 327.30              | 0.006              | 0.006                 | 0.001                  | 329.95              | 0.091              | 0.091                 | 0.109                  |
| 327.35              | 0.007              | 0.007                 | 0.001                  | 330.00              | 0.094              | 0.094                 | 0.114                  |
| 327.40              | 0.007              | 0.007                 | 0.002                  | 330.05              | 0.096              | 0.096                 | 0.119                  |
| 327.45              | 0.008              | 0.008                 | 0.002                  | 330.10              | 0.098              | 0.098                 | 0.124                  |
| 327.50              | 0.009              | 0.009                 | 0.003                  | 330.15              | 0.100              | 0.100                 | 0.129                  |
| 327.55              | 0.010              | 0.010                 | 0.003                  | 330.20              | 0.102              | 0.102                 | 0.134                  |
| 327.60              | 0.011              | 0.011                 | 0.004                  | 330.25              | 0.105              | 0.105                 | 0.139                  |
| 327.65              | 0.013              | 0.013                 | 0.004                  | 330.30              | 0.107              | 0.107                 | 0.144                  |
| 327.70              | 0.014              | 0.014                 | 0.005                  | 330.35              | 0.109              | 0.109                 | 0.150                  |
| 327.75              | 0.015              | 0.015                 | 0.006                  | 330.40              | 0.111              | 0.111                 | 0.155                  |
| 327.80              | 0.016              | 0.016                 | 0.006                  | 330.45              | 0.114              | 0.114                 | 0.161                  |
| 327.85              | 0.018              | 0.018                 | 0.007                  | 330.50              | 0.116              | 0.116                 | 0.166                  |
| 327.90              | 0.019              | 0.019                 | 0.008                  | 330.55              | 0.118              | 0.118                 | 0.172                  |
| 327.95              | 0.020              | 0.020                 | 0.009                  | 330.60              | 0.121              | 0.121                 | 0.178                  |
| 328.00              | 0.022              | 0.022                 | 0.010                  | 330.65              | 0.123              | 0.123                 | 0.184                  |
| 328.05              | 0.023              | 0.023                 | 0.011                  | 330.70              | 0.125              | 0.125                 | 0.191                  |
| 328.10              | 0.024              | 0.024                 | 0.013                  | 330.75              | 0.128              | 0.128                 | 0.197                  |
| 328.15              | 0.025              | 0.025                 | 0.014                  | 330.80              | 0.130              | 0.130                 | 0.203                  |
| 328.20              | 0.026              | 0.026                 | 0.015                  | 330.85              | 0.133              | 0.133                 | 0.210                  |
| 328.25              | 0.028              | 0.028                 | 0.016                  | 330.90              | 0.135              | 0.135                 | 0.217                  |
| 328.30              | 0.029              | 0.029                 | 0.018                  | 330.95              | 0.137              | 0.137                 | 0.223                  |
| 328.35              | 0.030              | 0.030                 | 0.019                  | 331.00              | <b>0.140</b>       | <b>0.140</b>          | <b>0.230</b>           |
| 328.40              | 0.031              | 0.031                 | 0.021                  |                     |                    |                       |                        |
| 328.45              | 0.032              | 0.032                 | 0.022                  |                     |                    |                       |                        |
| 328.50              | 0.034              | 0.034                 | 0.024                  |                     |                    |                       |                        |
| 328.55              | 0.035              | 0.035                 | 0.026                  |                     |                    |                       |                        |
| 328.60              | 0.036              | 0.036                 | 0.028                  |                     |                    |                       |                        |
| 328.65              | 0.038              | 0.038                 | 0.029                  |                     |                    |                       |                        |
| 328.70              | 0.039              | 0.039                 | 0.031                  |                     |                    |                       |                        |
| 328.75              | 0.041              | 0.041                 | 0.033                  |                     |                    |                       |                        |
| 328.80              | 0.042              | 0.042                 | 0.035                  |                     |                    |                       |                        |
| 328.85              | 0.043              | 0.043                 | 0.038                  |                     |                    |                       |                        |
| 328.90              | 0.045              | 0.045                 | 0.040                  |                     |                    |                       |                        |
| 328.95              | 0.046              | 0.046                 | 0.042                  |                     |                    |                       |                        |
| 329.00              | 0.048              | 0.048                 | 0.044                  |                     |                    |                       |                        |
| 329.05              | 0.050              | 0.050                 | 0.047                  |                     |                    |                       |                        |
| 329.10              | 0.052              | 0.052                 | 0.049                  |                     |                    |                       |                        |
| 329.15              | 0.054              | 0.054                 | 0.052                  |                     |                    |                       |                        |
| 329.20              | 0.056              | 0.056                 | 0.055                  |                     |                    |                       |                        |
| 329.25              | 0.058              | 0.058                 | 0.058                  |                     |                    |                       |                        |
| 329.30              | 0.060              | 0.060                 | 0.061                  |                     |                    |                       |                        |
| 329.35              | 0.062              | 0.062                 | 0.064                  |                     |                    |                       |                        |
| 329.40              | 0.065              | 0.065                 | 0.067                  |                     |                    |                       |                        |
| 329.45              | 0.067              | 0.067                 | 0.070                  |                     |                    |                       |                        |
| 329.50              | 0.069              | 0.069                 | 0.073                  |                     |                    |                       |                        |
| 329.55              | 0.071              | 0.071                 | 0.077                  |                     |                    |                       |                        |
| 329.60              | 0.074              | 0.074                 | 0.081                  |                     |                    |                       |                        |

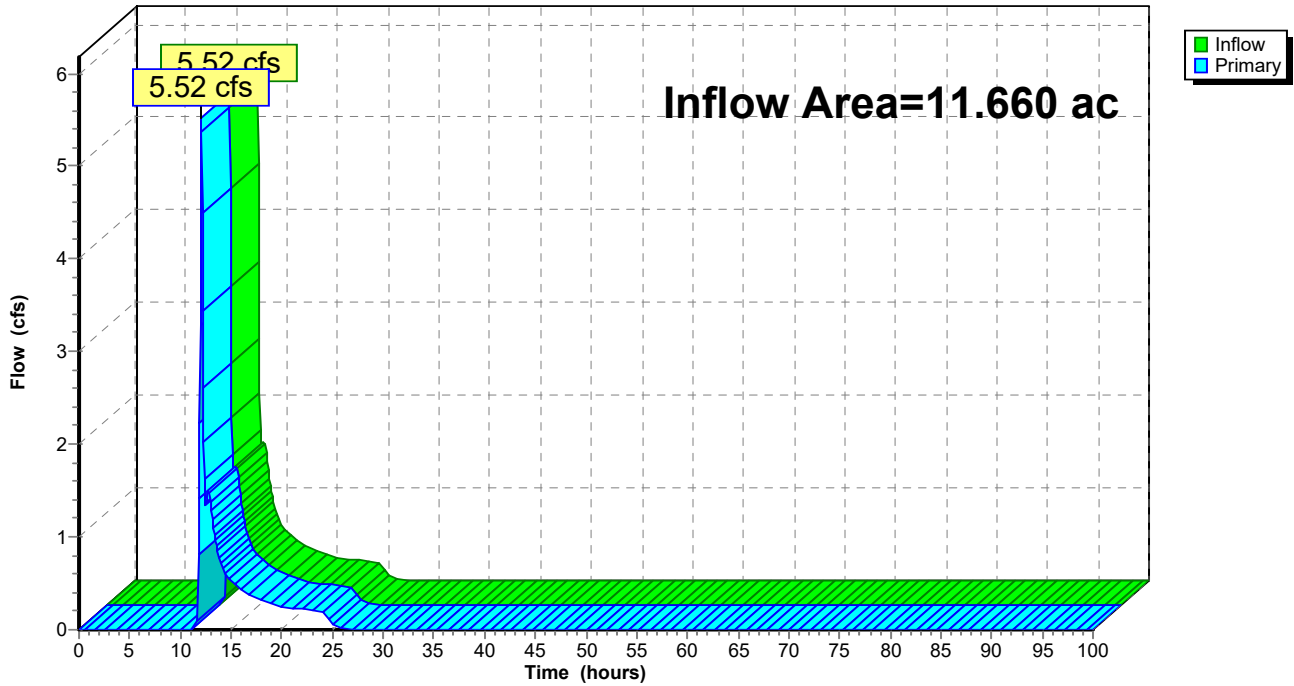
### Summary for Link AP3: Analysis Point 3

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 0.61" for 10-yr event  
Inflow = 5.52 cfs @ 12.07 hrs, Volume= 0.596 af  
Primary = 5.52 cfs @ 12.07 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3

Hydrograph



**Hydrograph for Link AP3: Analysis Point 3**

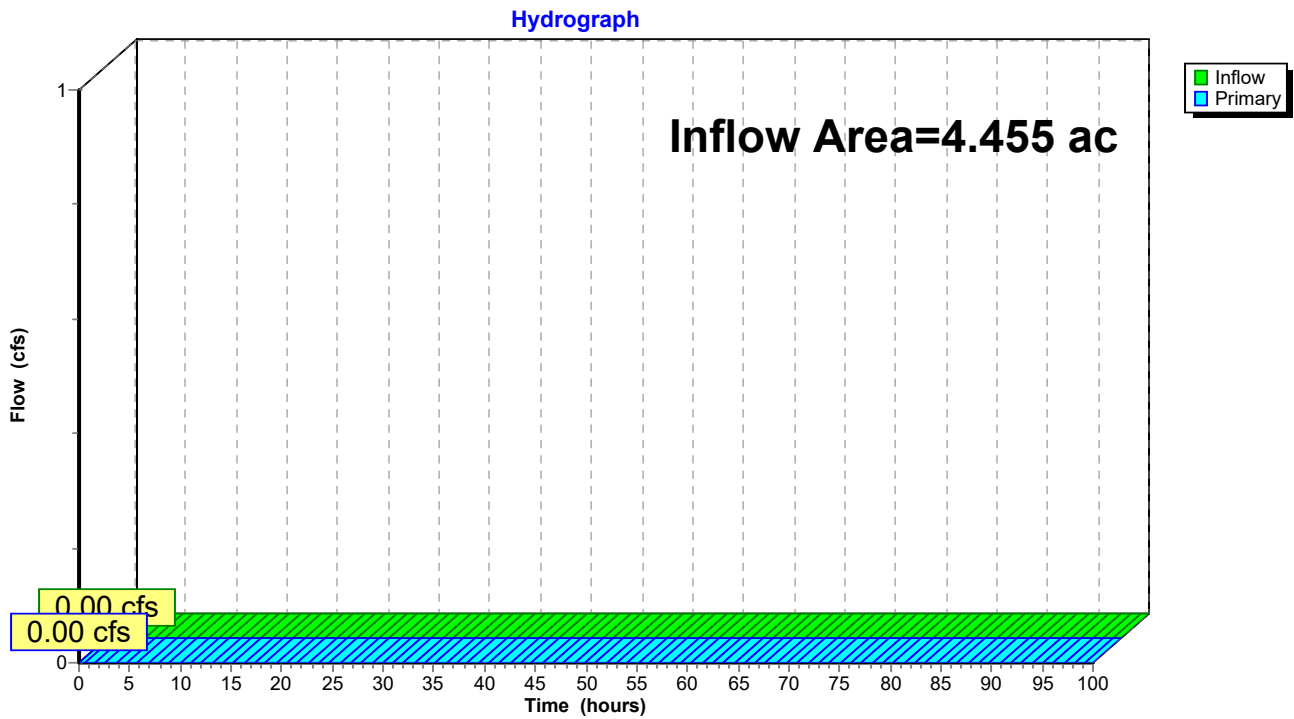
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>4.54</b>  | 0.00             | <b>4.54</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>1.35</b>  | 0.00             | <b>1.35</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.72         | 0.00             | 0.72          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.52         | 0.00             | 0.52          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.43         | 0.00             | 0.43          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.36         | 0.00             | 0.36          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.32         | 0.00             | 0.32          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.29         | 0.00             | 0.29          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.25         | 0.00             | 0.25          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.23         | 0.00             | 0.23          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.22         | 0.00             | 0.22          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.21         | 0.00             | 0.21          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.21         | 0.00             | 0.21          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.07         | 0.00             | 0.07          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.02         | 0.00             | 0.02          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

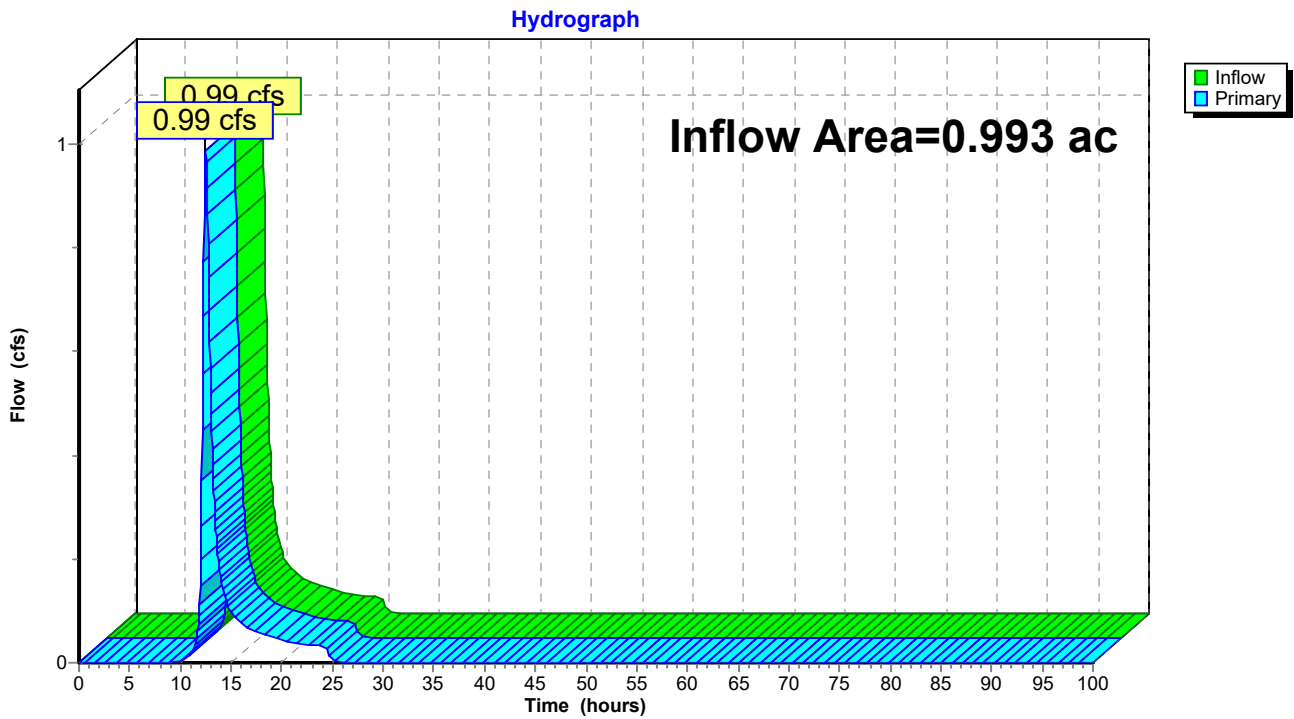


### Summary for Link AP5: Analysis Point 5

Inflow Area = 0.993 ac, 0.00% Impervious, Inflow Depth = 1.67" for 10-yr event  
Inflow = 0.99 cfs @ 12.51 hrs, Volume= 0.138 af  
Primary = 0.99 cfs @ 12.51 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5



**Hydrograph for Link AP5: Analysis Point 5**

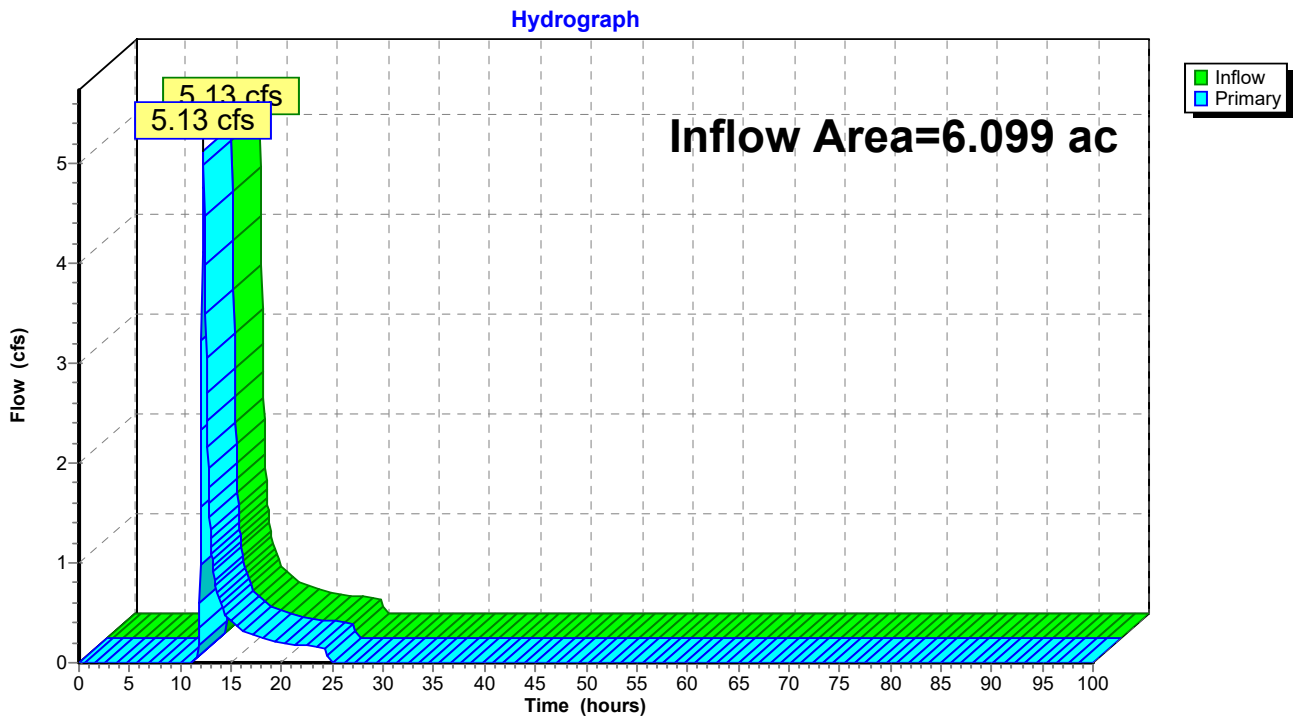
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.02         | 0.00             | 0.02          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.20</b>  | 0.00             | <b>0.20</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.52</b>  | 0.00             | <b>0.52</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.16         | 0.00             | 0.16          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.10         | 0.00             | 0.10          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.08         | 0.00             | 0.08          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.06         | 0.00             | 0.06          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.06         | 0.00             | 0.06          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.05         | 0.00             | 0.05          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.04         | 0.00             | 0.04          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.04         | 0.00             | 0.04          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.04         | 0.00             | 0.04          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.03         | 0.00             | 0.03          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.03         | 0.00             | 0.03          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP6: Analysis Point 6

Inflow Area = 6.099 ac, 0.00% Impervious, Inflow Depth = 1.09" for 10-yr event  
Inflow = 5.13 cfs @ 12.28 hrs, Volume= 0.553 af  
Primary = 5.13 cfs @ 12.28 hrs, Volume= 0.553 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>1.56</b>  | 0.00             | <b>1.56</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>1.24</b>  | 0.00             | <b>1.24</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.57         | 0.00             | 0.57          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.42         | 0.00             | 0.42          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.34         | 0.00             | 0.34          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.29         | 0.00             | 0.29          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.26         | 0.00             | 0.26          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.23         | 0.00             | 0.23          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.19         | 0.00             | 0.19          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.18         | 0.00             | 0.18          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.17         | 0.00             | 0.17          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.17         | 0.00             | 0.17          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.16         | 0.00             | 0.16          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Existing Stormwater Conditions\_Final D Soils Gre Type II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|  |  |
|--|--|
| <b>Subcatchment S4a: Subcatchment 4a</b> | Runoff Area=9.901 ac 9.99% Impervious Runoff Depth=0.67"<br>Flow Length=937' Tc=37.6 min CN=53 Runoff=3.20 cfs 0.550 af                        |
| <b>Subcatchment S4b: Subcatchment 4b</b> | Runoff Area=1.759 ac 2.39% Impervious Runoff Depth=3.25"<br>Flow Length=440' Tc=10.5 min CN=88 Runoff=8.25 cfs 0.477 af                        |
| <b>Subcatchment S5: Subcatchment 5</b>   | Runoff Area=4.455 ac 0.00% Impervious Runoff Depth=0.99"<br>Flow Length=712' Tc=22.0 min CN=59 Runoff=3.87 cfs 0.369 af                        |
| <b>Subcatchment S6: Subcatchment 6</b>   | Runoff Area=0.993 ac 0.00% Impervious Runoff Depth=2.34"<br>Flow Length=664' Tc=50.0 min CN=78 Runoff=1.41 cfs 0.194 af                        |
| <b>Subcatchment S7: Subcatchment 7</b>   | Runoff Area=6.099 ac 0.00% Impervious Runoff Depth=1.64"<br>Flow Length=900' Tc=30.6 min CN=69 Runoff=8.15 cfs 0.836 af                        |
| <b>Pond 3ST: Existing Sediment Trap</b>  | Peak Elev=337.75' Storage=0.222 af Inflow=3.20 cfs 0.550 af<br>Outflow=2.94 cfs 0.539 af   |
| <b>Pond 4ST: Existing Sediment Trap</b>  | Peak Elev=336.20' Storage=0.087 af Inflow=8.25 cfs 1.016 af<br>Outflow=9.22 cfs 0.971 af   |
| <b>Pond 5ST: Existing Sediment Trap</b>  | Peak Elev=328.44' Storage=0.022 af Inflow=3.87 cfs 0.369 af<br>Discarded=3.24 cfs 0.369 af Primary=0.00 cfs 0.000 af Outflow=3.24 cfs 0.369 af |
| <b>Link AP3: Analysis Point 3</b>        | Inflow=9.22 cfs 0.971 af<br>Primary=9.22 cfs 0.971 af  |
| <b>Link AP4: Analysis Point 4</b>        | Inflow=0.00 cfs 0.000 af<br>Primary=0.00 cfs 0.000 af  |
| <b>Link AP5: Analysis Point 5</b>        | Inflow=1.41 cfs 0.194 af<br>Primary=1.41 cfs 0.194 af  |
| <b>Link AP6: Analysis Point 6</b>        | Inflow=8.15 cfs 0.836 af<br>Primary=8.15 cfs 0.836 af  |

**Total Runoff Area = 23.207 ac Runoff Volume = 2.425 af Average Runoff Depth = 1.25"**  
**95.56% Pervious = 22.176 ac 4.44% Impervious = 1.031 ac**

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 3.20 cfs @ 12.43 hrs, Volume= 0.550 af, Depth= 0.67"  
 Routed to Pond 3ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.105     | 98 | Roofs, HSG A                  |
| 0.351     | 98 | Paved parking, HSG A          |
| 0.470     | 98 | Paved roads, HSG A            |
| 4.623     | 30 | Woods, Good, HSG A            |
| 0.565     | 77 | Woods, Good, HSG D            |
| 0.682     | 30 | Meadow, non-grazed, HSG A     |
| 1.306     | 78 | Meadow, non-grazed, HSG D     |
| 0.124     | 77 | Fallow, bare soil, HSG A      |
| 0.900     | 94 | Fallow, bare soil, HSG D      |
| 0.519     | 39 | >75% Grass cover, Good, HSG A |
| 0.193     | 30 | Woods, Good, HSG A            |
| 0.063     | 98 | Water Surface, HSG A          |
| 9.901     | 53 | Weighted Average              |
| 8.912     |    | 90.01% Pervious Area          |
| 0.989     |    | 9.99% Impervious Area         |

**1096 Existing Stormwater Conditions\_Final D Soils Gre Type II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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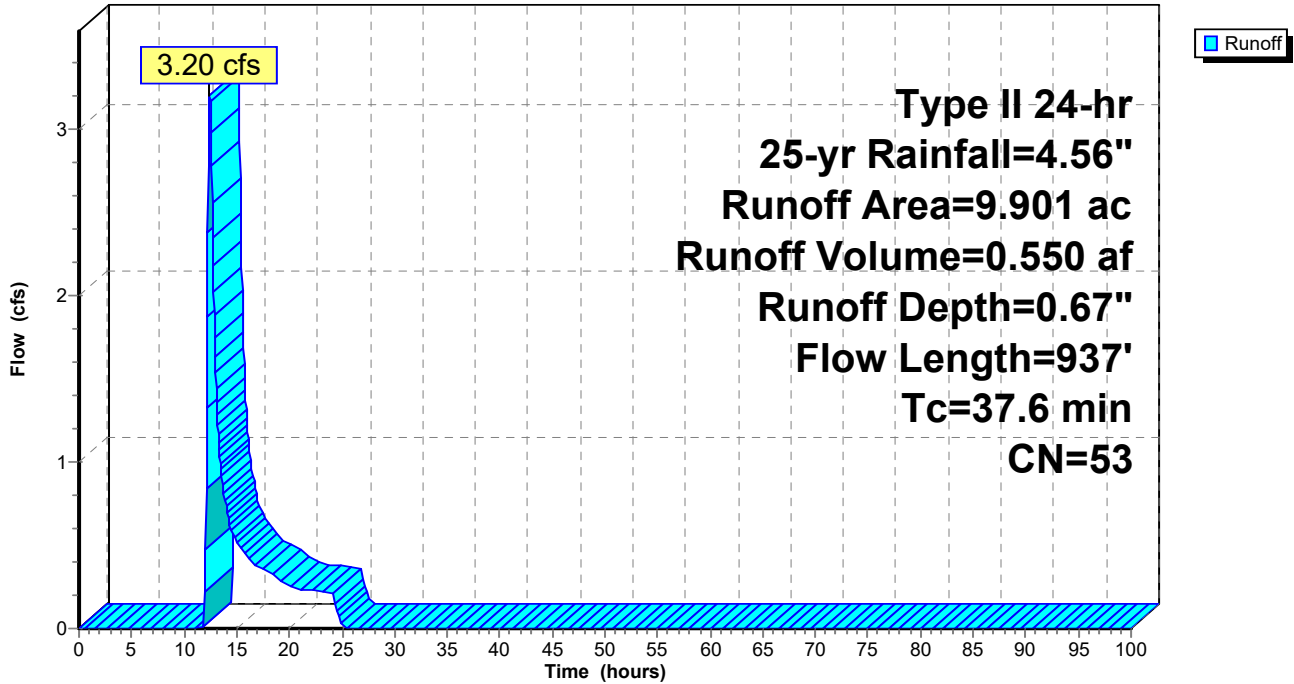
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                    |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"         |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 2.7         | 71               | 0.0039           | 0.44                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.9         | 132              | 0.0032           | 0.57                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 0.2         | 33               | 0.1262           | 2.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.5         | 38               | 0.0271           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 37.6        | 937              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph





**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 0.67            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 0.67            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 0.67            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 0.67            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 0.67            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 0.67            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 0.67            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 0.67            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 0.67            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 0.67            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 0.67            | 0.00         |
| 11.00        | 1.07             | 0.00            | 0.00         | 64.00        | 4.56             | 0.67            | 0.00         |
| 12.00        | 3.02             | 0.15            | <b>0.22</b>  | 65.00        | 4.56             | 0.67            | 0.00         |
| 13.00        | 3.52             | 0.29            | <b>1.53</b>  | 66.00        | 4.56             | 0.67            | 0.00         |
| 14.00        | 3.74             | 0.36            | 0.72         | 67.00        | 4.56             | 0.67            | 0.00         |
| 15.00        | 3.89             | 0.41            | 0.53         | 68.00        | 4.56             | 0.67            | 0.00         |
| 16.00        | 4.01             | 0.45            | 0.44         | 69.00        | 4.56             | 0.67            | 0.00         |
| 17.00        | 4.11             | 0.49            | 0.37         | 70.00        | 4.56             | 0.67            | 0.00         |
| 18.00        | 4.20             | 0.52            | 0.33         | 71.00        | 4.56             | 0.67            | 0.00         |
| 19.00        | 4.28             | 0.55            | 0.30         | 72.00        | 4.56             | 0.67            | 0.00         |
| 20.00        | 4.34             | 0.58            | 0.26         | 73.00        | 4.56             | 0.67            | 0.00         |
| 21.00        | 4.40             | 0.60            | 0.23         | 74.00        | 4.56             | 0.67            | 0.00         |
| 22.00        | 4.46             | 0.62            | 0.23         | 75.00        | 4.56             | 0.67            | 0.00         |
| 23.00        | 4.51             | 0.64            | 0.22         | 76.00        | 4.56             | 0.67            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>0.67</b>     | 0.21         | 77.00        | 4.56             | 0.67            | 0.00         |
| 25.00        | 4.56             | 0.67            | 0.02         | 78.00        | 4.56             | 0.67            | 0.00         |
| 26.00        | 4.56             | 0.67            | 0.00         | 79.00        | 4.56             | 0.67            | 0.00         |
| 27.00        | 4.56             | 0.67            | 0.00         | 80.00        | 4.56             | 0.67            | 0.00         |
| 28.00        | 4.56             | 0.67            | 0.00         | 81.00        | 4.56             | 0.67            | 0.00         |
| 29.00        | 4.56             | 0.67            | 0.00         | 82.00        | 4.56             | 0.67            | 0.00         |
| 30.00        | 4.56             | 0.67            | 0.00         | 83.00        | 4.56             | 0.67            | 0.00         |
| 31.00        | 4.56             | 0.67            | 0.00         | 84.00        | 4.56             | 0.67            | 0.00         |
| 32.00        | 4.56             | 0.67            | 0.00         | 85.00        | 4.56             | 0.67            | 0.00         |
| 33.00        | 4.56             | 0.67            | 0.00         | 86.00        | 4.56             | 0.67            | 0.00         |
| 34.00        | 4.56             | 0.67            | 0.00         | 87.00        | 4.56             | 0.67            | 0.00         |
| 35.00        | 4.56             | 0.67            | 0.00         | 88.00        | 4.56             | 0.67            | 0.00         |
| 36.00        | 4.56             | 0.67            | 0.00         | 89.00        | 4.56             | 0.67            | 0.00         |
| 37.00        | 4.56             | 0.67            | 0.00         | 90.00        | 4.56             | 0.67            | 0.00         |
| 38.00        | 4.56             | 0.67            | 0.00         | 91.00        | 4.56             | 0.67            | 0.00         |
| 39.00        | 4.56             | 0.67            | 0.00         | 92.00        | 4.56             | 0.67            | 0.00         |
| 40.00        | 4.56             | 0.67            | 0.00         | 93.00        | 4.56             | 0.67            | 0.00         |
| 41.00        | 4.56             | 0.67            | 0.00         | 94.00        | 4.56             | 0.67            | 0.00         |
| 42.00        | 4.56             | 0.67            | 0.00         | 95.00        | 4.56             | 0.67            | 0.00         |
| 43.00        | 4.56             | 0.67            | 0.00         | 96.00        | 4.56             | 0.67            | 0.00         |
| 44.00        | 4.56             | 0.67            | 0.00         | 97.00        | 4.56             | 0.67            | 0.00         |
| 45.00        | 4.56             | 0.67            | 0.00         | 98.00        | 4.56             | 0.67            | 0.00         |
| 46.00        | 4.56             | 0.67            | 0.00         | 99.00        | 4.56             | 0.67            | 0.00         |
| 47.00        | 4.56             | 0.67            | 0.00         | 100.00       | 4.56             | 0.67            | 0.00         |
| 48.00        | 4.56             | 0.67            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 0.67            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 0.67            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 0.67            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 0.67            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 8.25 cfs @ 12.02 hrs, Volume= 0.477 af, Depth= 3.25"  
 Routed to Pond 4ST : Existing Sediment Trap

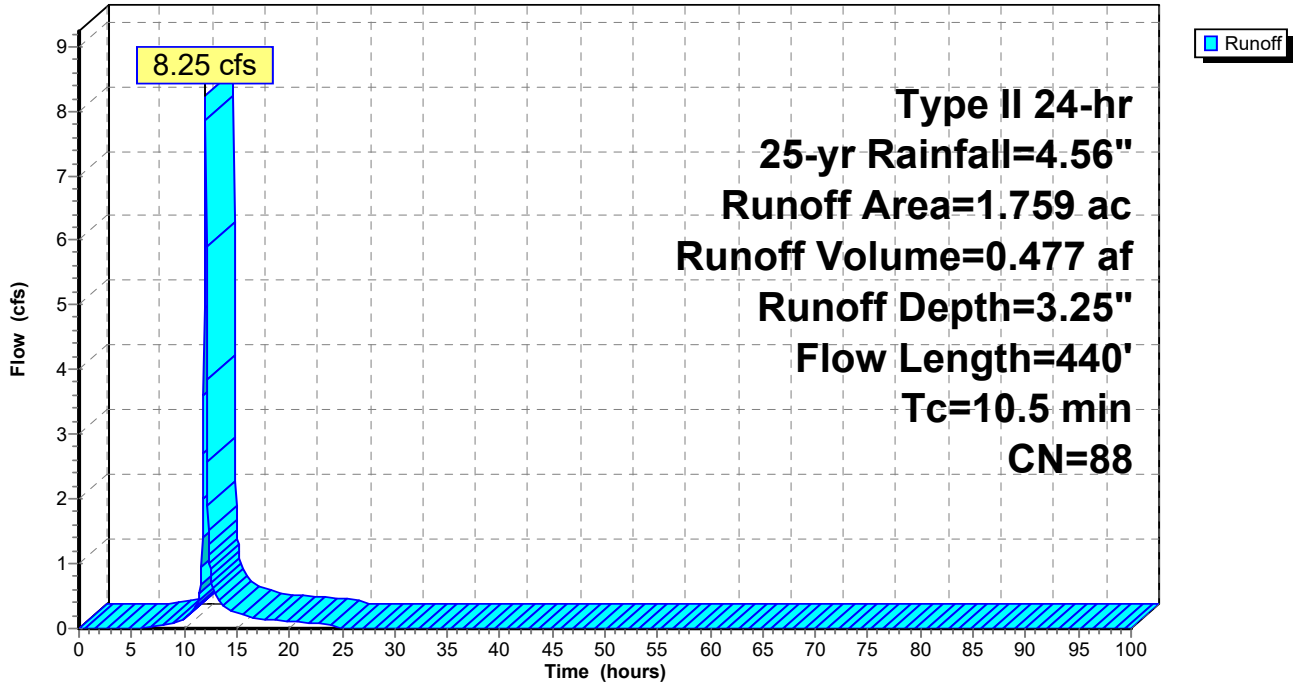
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.106     | 77 | Woods, Good, HSG D                   |
| 0.399     | 78 | Meadow, non-grazed, HSG D            |
| 0.090     | 77 | Fallow, bare soil, HSG A             |
| 0.990     | 94 | Fallow, bare soil, HSG D             |
| 0.132     | 89 | Row crops, straight row, Good, HSG D |
| 0.042     | 98 | Water Surface, HSG D                 |
| 1.759     | 88 | Weighted Average                     |
| 1.717     |    | 97.61% Pervious Area                 |
| 0.042     |    | 2.39% Impervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.9      | 28            | 0.0880        | 0.52              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 1.7      | 31            | 0.0230        | 0.31              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 2.8      | 40            | 0.0110        | 0.24              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 4.1      | 256           | 0.0110        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.7      | 58            | 0.0174        | 1.32              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.3      | 27            | 0.0370        | 1.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 10.5     | 440           | Total         |                   |                |   |

### Subcatchment S4b: Subcatchment 4b

Hydrograph



**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 3.25               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 3.25               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 3.25               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 3.25               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 3.25               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 3.25               | 0.00            |
| 6.00            | 0.36                | 0.01               | 0.02            | 59.00           | 4.56                | 3.25               | 0.00            |
| 7.00            | 0.45                | 0.02               | 0.03            | 60.00           | 4.56                | 3.25               | 0.00            |
| 8.00            | 0.55                | 0.05               | 0.05            | 61.00           | 4.56                | 3.25               | 0.00            |
| 9.00            | 0.67                | 0.09               | 0.09            | 62.00           | 4.56                | 3.25               | 0.00            |
| 10.00           | 0.83                | 0.16               | 0.14            | 63.00           | 4.56                | 3.25               | 0.00            |
| 11.00           | 1.07                | 0.30               | 0.31            | 64.00           | 4.56                | 3.25               | 0.00            |
| 12.00           | 3.02                | 1.84               | <b>8.15</b>     | 65.00           | 4.56                | 3.25               | 0.00            |
| 13.00           | 3.52                | 2.29               | 0.51            | 66.00           | 4.56                | 3.25               | 0.00            |
| 14.00           | 3.74                | 2.49               | 0.30            | 67.00           | 4.56                | 3.25               | 0.00            |
| 15.00           | 3.89                | 2.63               | 0.23            | 68.00           | 4.56                | 3.25               | 0.00            |
| 16.00           | 4.01                | 2.74               | 0.18            | 69.00           | 4.56                | 3.25               | 0.00            |
| 17.00           | 4.11                | 2.83               | 0.16            | 70.00           | 4.56                | 3.25               | 0.00            |
| 18.00           | 4.20                | 2.91               | 0.14            | 71.00           | 4.56                | 3.25               | 0.00            |
| 19.00           | 4.28                | 2.99               | 0.12            | 72.00           | 4.56                | 3.25               | 0.00            |
| 20.00           | 4.34                | 3.05               | 0.10            | 73.00           | 4.56                | 3.25               | 0.00            |
| 21.00           | 4.40                | 3.10               | 0.10            | 74.00           | 4.56                | 3.25               | 0.00            |
| 22.00           | 4.46                | 3.15               | 0.09            | 75.00           | 4.56                | 3.25               | 0.00            |
| 23.00           | 4.51                | 3.20               | 0.09            | 76.00           | 4.56                | 3.25               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>3.25</b>        | 0.08            | 77.00           | 4.56                | 3.25               | 0.00            |
| 25.00           | 4.56                | 3.25               | 0.00            | 78.00           | 4.56                | 3.25               | 0.00            |
| 26.00           | 4.56                | 3.25               | 0.00            | 79.00           | 4.56                | 3.25               | 0.00            |
| 27.00           | 4.56                | 3.25               | 0.00            | 80.00           | 4.56                | 3.25               | 0.00            |
| 28.00           | 4.56                | 3.25               | 0.00            | 81.00           | 4.56                | 3.25               | 0.00            |
| 29.00           | 4.56                | 3.25               | 0.00            | 82.00           | 4.56                | 3.25               | 0.00            |
| 30.00           | 4.56                | 3.25               | 0.00            | 83.00           | 4.56                | 3.25               | 0.00            |
| 31.00           | 4.56                | 3.25               | 0.00            | 84.00           | 4.56                | 3.25               | 0.00            |
| 32.00           | 4.56                | 3.25               | 0.00            | 85.00           | 4.56                | 3.25               | 0.00            |
| 33.00           | 4.56                | 3.25               | 0.00            | 86.00           | 4.56                | 3.25               | 0.00            |
| 34.00           | 4.56                | 3.25               | 0.00            | 87.00           | 4.56                | 3.25               | 0.00            |
| 35.00           | 4.56                | 3.25               | 0.00            | 88.00           | 4.56                | 3.25               | 0.00            |
| 36.00           | 4.56                | 3.25               | 0.00            | 89.00           | 4.56                | 3.25               | 0.00            |
| 37.00           | 4.56                | 3.25               | 0.00            | 90.00           | 4.56                | 3.25               | 0.00            |
| 38.00           | 4.56                | 3.25               | 0.00            | 91.00           | 4.56                | 3.25               | 0.00            |
| 39.00           | 4.56                | 3.25               | 0.00            | 92.00           | 4.56                | 3.25               | 0.00            |
| 40.00           | 4.56                | 3.25               | 0.00            | 93.00           | 4.56                | 3.25               | 0.00            |
| 41.00           | 4.56                | 3.25               | 0.00            | 94.00           | 4.56                | 3.25               | 0.00            |
| 42.00           | 4.56                | 3.25               | 0.00            | 95.00           | 4.56                | 3.25               | 0.00            |
| 43.00           | 4.56                | 3.25               | 0.00            | 96.00           | 4.56                | 3.25               | 0.00            |
| 44.00           | 4.56                | 3.25               | 0.00            | 97.00           | 4.56                | 3.25               | 0.00            |
| 45.00           | 4.56                | 3.25               | 0.00            | 98.00           | 4.56                | 3.25               | 0.00            |
| 46.00           | 4.56                | 3.25               | 0.00            | 99.00           | 4.56                | 3.25               | 0.00            |
| 47.00           | 4.56                | 3.25               | 0.00            | 100.00          | 4.56                | 3.25               | 0.00            |
| 48.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S5: Subcatchment 5**

Runoff = 3.87 cfs @ 12.18 hrs, Volume= 0.369 af, Depth= 0.99"

Routed to Pond 5ST : Existing Sediment Trap

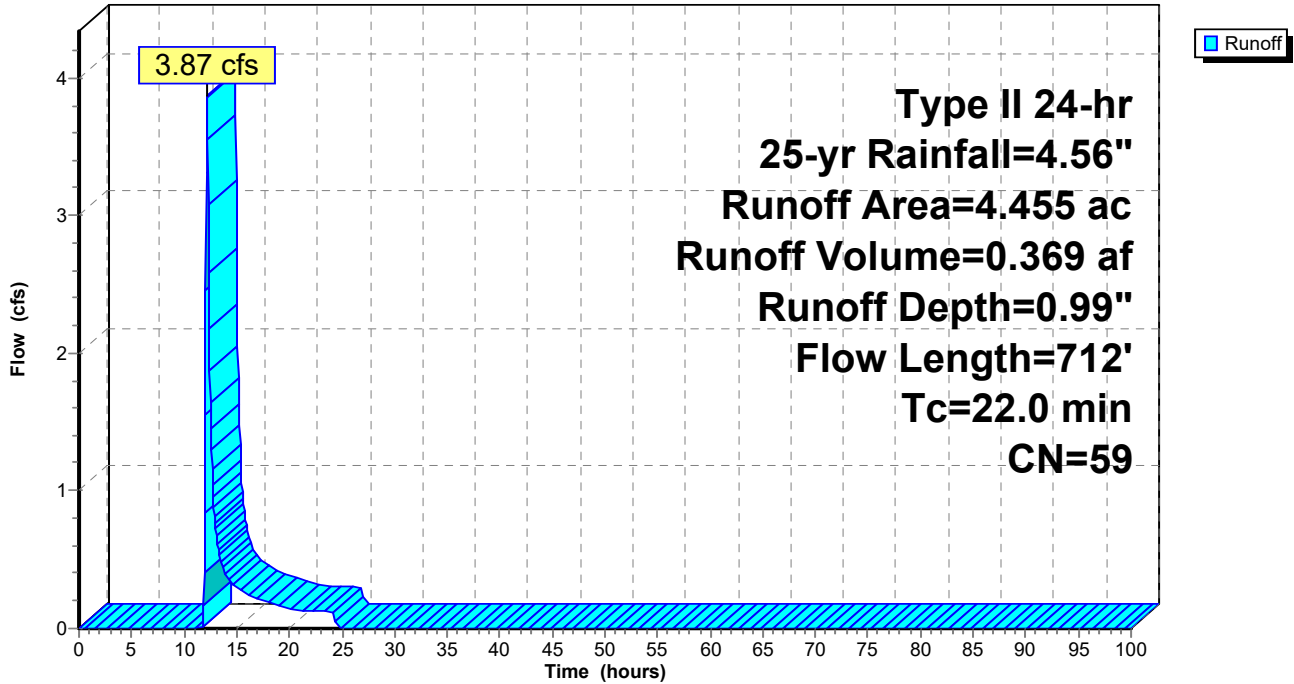
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.583     | 30 | Woods, Good, HSG A                   |
| 0.823     | 30 | Meadow, non-grazed, HSG A            |
| 1.339     | 77 | Fallow, bare soil, HSG A             |
| 0.095     | 94 | Fallow, bare soil, HSG D             |
| 1.532     | 67 | Row crops, straight row, Good, HSG A |
| 0.083     | 89 | Row crops, straight row, Good, HSG D |
| 4.455     | 59 | Weighted Average                     |
| 4.455     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.1     | 44            | 0.0120        | 0.07              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59"                    |
| 3.5      | 56            | 0.0117        | 0.26              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.3      | 17            | 0.0095        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.9      | 40            | 0.0113        | 0.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.7      | 230           | 0.0105        | 1.02              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.4      | 50            | 0.0402        | 2.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.5      | 113           | 0.0156        | 1.25              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.4      | 124           | 0.0230        | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 25            | 0.0940        | 3.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 13            | 0.0790        | 2.81              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 22.0     | 712           | Total         |                   |                |   |

### Subcatchment S5: Subcatchment 5

Hydrograph



**Hydrograph for Subcatchment S5: Subcatchment 5**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 0.99            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 0.99            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 0.99            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 0.99            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 0.99            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 0.99            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 0.99            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 0.99            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 0.99            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 0.99            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 0.99            | 0.00         |
| 11.00        | 1.07             | 0.00            | 0.00         | 64.00        | 4.56             | 0.99            | 0.00         |
| 12.00        | 3.02             | 0.31            | <b>1.55</b>  | 65.00        | 4.56             | 0.99            | 0.00         |
| 13.00        | 3.52             | 0.50            | <b>0.69</b>  | 66.00        | 4.56             | 0.99            | 0.00         |
| 14.00        | 3.74             | 0.59            | 0.39         | 67.00        | 4.56             | 0.99            | 0.00         |
| 15.00        | 3.89             | 0.66            | 0.30         | 68.00        | 4.56             | 0.99            | 0.00         |
| 16.00        | 4.01             | 0.72            | 0.24         | 69.00        | 4.56             | 0.99            | 0.00         |
| 17.00        | 4.11             | 0.77            | 0.21         | 70.00        | 4.56             | 0.99            | 0.00         |
| 18.00        | 4.20             | 0.81            | 0.19         | 71.00        | 4.56             | 0.99            | 0.00         |
| 19.00        | 4.28             | 0.85            | 0.17         | 72.00        | 4.56             | 0.99            | 0.00         |
| 20.00        | 4.34             | 0.88            | 0.14         | 73.00        | 4.56             | 0.99            | 0.00         |
| 21.00        | 4.40             | 0.91            | 0.13         | 74.00        | 4.56             | 0.99            | 0.00         |
| 22.00        | 4.46             | 0.94            | 0.13         | 75.00        | 4.56             | 0.99            | 0.00         |
| 23.00        | 4.51             | 0.97            | 0.12         | 76.00        | 4.56             | 0.99            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>0.99</b>     | 0.12         | 77.00        | 4.56             | 0.99            | 0.00         |
| 25.00        | 4.56             | 0.99            | 0.00         | 78.00        | 4.56             | 0.99            | 0.00         |
| 26.00        | 4.56             | 0.99            | 0.00         | 79.00        | 4.56             | 0.99            | 0.00         |
| 27.00        | 4.56             | 0.99            | 0.00         | 80.00        | 4.56             | 0.99            | 0.00         |
| 28.00        | 4.56             | 0.99            | 0.00         | 81.00        | 4.56             | 0.99            | 0.00         |
| 29.00        | 4.56             | 0.99            | 0.00         | 82.00        | 4.56             | 0.99            | 0.00         |
| 30.00        | 4.56             | 0.99            | 0.00         | 83.00        | 4.56             | 0.99            | 0.00         |
| 31.00        | 4.56             | 0.99            | 0.00         | 84.00        | 4.56             | 0.99            | 0.00         |
| 32.00        | 4.56             | 0.99            | 0.00         | 85.00        | 4.56             | 0.99            | 0.00         |
| 33.00        | 4.56             | 0.99            | 0.00         | 86.00        | 4.56             | 0.99            | 0.00         |
| 34.00        | 4.56             | 0.99            | 0.00         | 87.00        | 4.56             | 0.99            | 0.00         |
| 35.00        | 4.56             | 0.99            | 0.00         | 88.00        | 4.56             | 0.99            | 0.00         |
| 36.00        | 4.56             | 0.99            | 0.00         | 89.00        | 4.56             | 0.99            | 0.00         |
| 37.00        | 4.56             | 0.99            | 0.00         | 90.00        | 4.56             | 0.99            | 0.00         |
| 38.00        | 4.56             | 0.99            | 0.00         | 91.00        | 4.56             | 0.99            | 0.00         |
| 39.00        | 4.56             | 0.99            | 0.00         | 92.00        | 4.56             | 0.99            | 0.00         |
| 40.00        | 4.56             | 0.99            | 0.00         | 93.00        | 4.56             | 0.99            | 0.00         |
| 41.00        | 4.56             | 0.99            | 0.00         | 94.00        | 4.56             | 0.99            | 0.00         |
| 42.00        | 4.56             | 0.99            | 0.00         | 95.00        | 4.56             | 0.99            | 0.00         |
| 43.00        | 4.56             | 0.99            | 0.00         | 96.00        | 4.56             | 0.99            | 0.00         |
| 44.00        | 4.56             | 0.99            | 0.00         | 97.00        | 4.56             | 0.99            | 0.00         |
| 45.00        | 4.56             | 0.99            | 0.00         | 98.00        | 4.56             | 0.99            | 0.00         |
| 46.00        | 4.56             | 0.99            | 0.00         | 99.00        | 4.56             | 0.99            | 0.00         |
| 47.00        | 4.56             | 0.99            | 0.00         | 100.00       | 4.56             | 0.99            | 0.00         |
| 48.00        | 4.56             | 0.99            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 0.99            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 0.99            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 0.99            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 0.99            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S6: Subcatchment 6**

Runoff = 1.41 cfs @ 12.50 hrs, Volume= 0.194 af, Depth= 2.34"  
 Routed to Link AP5 : Analysis Point 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.993     | 78 | Meadow, non-grazed, HSG D |
| 0.993     |    | 100.00% Pervious Area     |

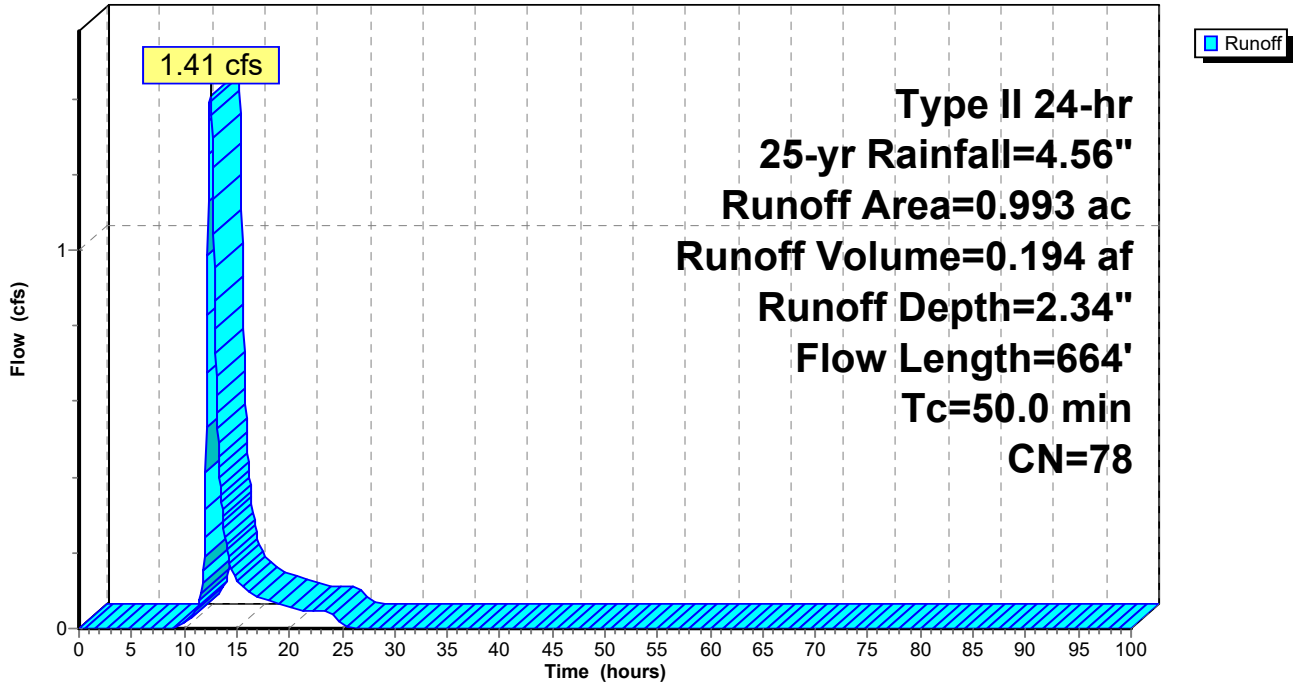
  

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 29.0     | 100           | 0.0013        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.4      | 10            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.6      | 15            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.3      | 9             | 0.0057        | 0.53              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0083        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 209           | 0.0047        | 0.48              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2      | 81            | 0.0244        | 1.09              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 50.0     | 664           | Total         |                   |                |   |



### Subcatchment S6: Subcatchment 6

Hydrograph



**Hydrograph for Subcatchment S6: Subcatchment 6**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 2.34               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 2.34               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 2.34               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 2.34               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 2.34               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 2.34               | 0.00            |
| 6.00            | 0.36                | 0.00               | 0.00            | 59.00           | 4.56                | 2.34               | 0.00            |
| 7.00            | 0.45                | 0.00               | 0.00            | 60.00           | 4.56                | 2.34               | 0.00            |
| 8.00            | 0.55                | 0.00               | 0.00            | 61.00           | 4.56                | 2.34               | 0.00            |
| 9.00            | 0.67                | 0.00               | 0.00            | 62.00           | 4.56                | 2.34               | 0.00            |
| 10.00           | 0.83                | 0.02               | 0.01            | 63.00           | 4.56                | 2.34               | 0.00            |
| 11.00           | 1.07                | 0.08               | 0.04            | 64.00           | 4.56                | 2.34               | 0.00            |
| 12.00           | 3.02                | 1.15               | <b>0.31</b>     | 65.00           | 4.56                | 2.34               | 0.00            |
| 13.00           | 3.52                | 1.51               | <b>0.72</b>     | 66.00           | 4.56                | 2.34               | 0.00            |
| 14.00           | 3.74                | 1.68               | 0.22            | 67.00           | 4.56                | 2.34               | 0.00            |
| 15.00           | 3.89                | 1.80               | 0.13            | 68.00           | 4.56                | 2.34               | 0.00            |
| 16.00           | 4.01                | 1.90               | 0.10            | 69.00           | 4.56                | 2.34               | 0.00            |
| 17.00           | 4.11                | 1.98               | 0.08            | 70.00           | 4.56                | 2.34               | 0.00            |
| 18.00           | 4.20                | 2.05               | 0.07            | 71.00           | 4.56                | 2.34               | 0.00            |
| 19.00           | 4.28                | 2.11               | 0.06            | 72.00           | 4.56                | 2.34               | 0.00            |
| 20.00           | 4.34                | 2.16               | 0.06            | 73.00           | 4.56                | 2.34               | 0.00            |
| 21.00           | 4.40                | 2.21               | 0.05            | 74.00           | 4.56                | 2.34               | 0.00            |
| 22.00           | 4.46                | 2.26               | 0.05            | 75.00           | 4.56                | 2.34               | 0.00            |
| 23.00           | 4.51                | 2.30               | 0.04            | 76.00           | 4.56                | 2.34               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>2.34</b>        | 0.04            | 77.00           | 4.56                | 2.34               | 0.00            |
| 25.00           | 4.56                | 2.34               | 0.01            | 78.00           | 4.56                | 2.34               | 0.00            |
| 26.00           | 4.56                | 2.34               | 0.00            | 79.00           | 4.56                | 2.34               | 0.00            |
| 27.00           | 4.56                | 2.34               | 0.00            | 80.00           | 4.56                | 2.34               | 0.00            |
| 28.00           | 4.56                | 2.34               | 0.00            | 81.00           | 4.56                | 2.34               | 0.00            |
| 29.00           | 4.56                | 2.34               | 0.00            | 82.00           | 4.56                | 2.34               | 0.00            |
| 30.00           | 4.56                | 2.34               | 0.00            | 83.00           | 4.56                | 2.34               | 0.00            |
| 31.00           | 4.56                | 2.34               | 0.00            | 84.00           | 4.56                | 2.34               | 0.00            |
| 32.00           | 4.56                | 2.34               | 0.00            | 85.00           | 4.56                | 2.34               | 0.00            |
| 33.00           | 4.56                | 2.34               | 0.00            | 86.00           | 4.56                | 2.34               | 0.00            |
| 34.00           | 4.56                | 2.34               | 0.00            | 87.00           | 4.56                | 2.34               | 0.00            |
| 35.00           | 4.56                | 2.34               | 0.00            | 88.00           | 4.56                | 2.34               | 0.00            |
| 36.00           | 4.56                | 2.34               | 0.00            | 89.00           | 4.56                | 2.34               | 0.00            |
| 37.00           | 4.56                | 2.34               | 0.00            | 90.00           | 4.56                | 2.34               | 0.00            |
| 38.00           | 4.56                | 2.34               | 0.00            | 91.00           | 4.56                | 2.34               | 0.00            |
| 39.00           | 4.56                | 2.34               | 0.00            | 92.00           | 4.56                | 2.34               | 0.00            |
| 40.00           | 4.56                | 2.34               | 0.00            | 93.00           | 4.56                | 2.34               | 0.00            |
| 41.00           | 4.56                | 2.34               | 0.00            | 94.00           | 4.56                | 2.34               | 0.00            |
| 42.00           | 4.56                | 2.34               | 0.00            | 95.00           | 4.56                | 2.34               | 0.00            |
| 43.00           | 4.56                | 2.34               | 0.00            | 96.00           | 4.56                | 2.34               | 0.00            |
| 44.00           | 4.56                | 2.34               | 0.00            | 97.00           | 4.56                | 2.34               | 0.00            |
| 45.00           | 4.56                | 2.34               | 0.00            | 98.00           | 4.56                | 2.34               | 0.00            |
| 46.00           | 4.56                | 2.34               | 0.00            | 99.00           | 4.56                | 2.34               | 0.00            |
| 47.00           | 4.56                | 2.34               | 0.00            | 100.00          | 4.56                | 2.34               | 0.00            |
| 48.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S7: Subcatchment 7**

Runoff = 8.15 cfs @ 12.27 hrs, Volume= 0.836 af, Depth= 1.64"  
 Routed to Link AP6 : Analysis Point 6

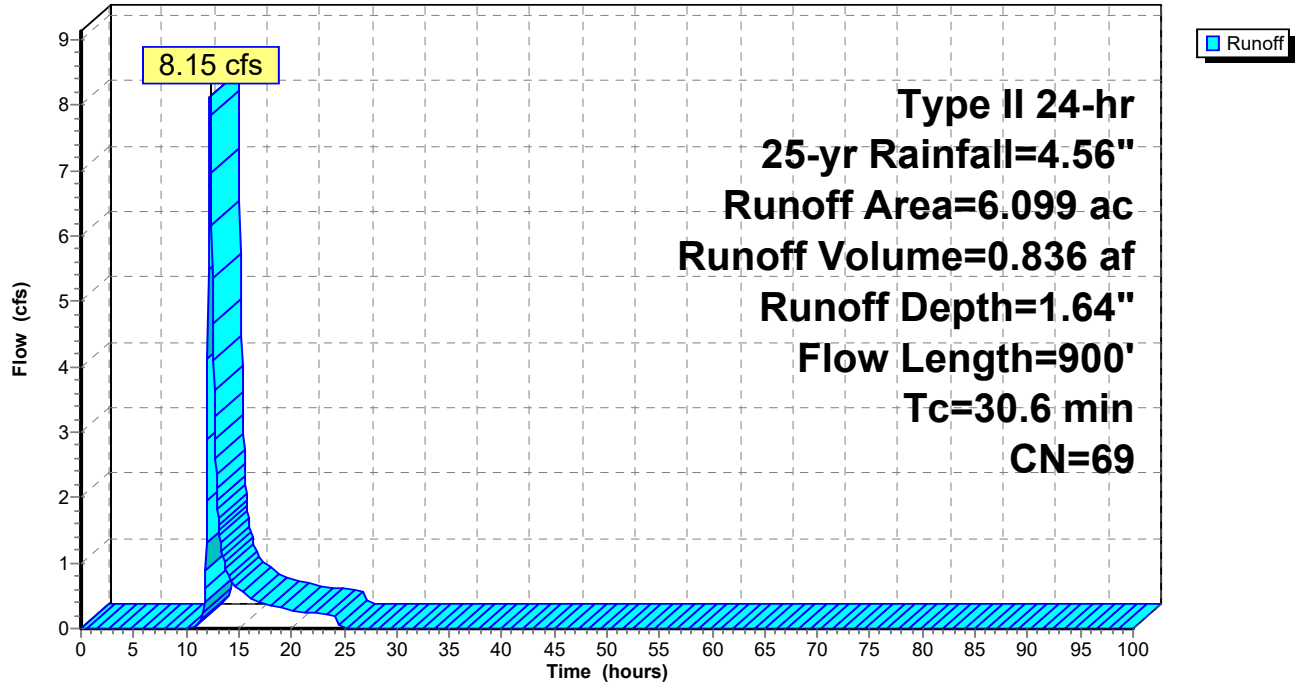
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.054     | 77 | Woods, Good, HSG D                   |
| 1.251     | 30 | Meadow, non-grazed, HSG A            |
| 0.578     | 78 | Meadow, non-grazed, HSG D            |
| 0.291     | 77 | Fallow, bare soil, HSG A             |
| 0.576     | 94 | Fallow, bare soil, HSG D             |
| 1.716     | 67 | Row crops, straight row, Good, HSG A |
| 1.633     | 89 | Row crops, straight row, Good, HSG D |
| 6.099     | 69 | Weighted Average                     |
| 6.099     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 13.2     | 100           | 0.0158        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Cultivated: Residue>20% n= 0.170 P2= 2.59"          |
| 4.9      | 348           | 0.0170        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 1.3      | 83            | 0.0137        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 2.5      | 51            | 0.0012        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 1.6      | 56            | 0.0044        | 0.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 0.9      | 24            | 0.0021        | 0.46              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 6.2      | 238           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps      |
| 30.6     | 900           | Total         |                   |                |  |

### Subcatchment S7: Subcatchment 7

Hydrograph



**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 1.64            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 1.64            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 1.64            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 1.64            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 1.64            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 1.64            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 1.64            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 1.64            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 1.64            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 1.64            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 1.64            | 0.00         |
| 11.00        | 1.07             | 0.01            | 0.04         | 64.00        | 4.56             | 1.64            | 0.00         |
| 12.00        | 3.02             | 0.68            | <b>2.90</b>  | 65.00        | 4.56             | 1.64            | 0.00         |
| 13.00        | 3.52             | 0.97            | <b>1.81</b>  | 66.00        | 4.56             | 1.64            | 0.00         |
| 14.00        | 3.74             | 1.10            | 0.81         | 67.00        | 4.56             | 1.64            | 0.00         |
| 15.00        | 3.89             | 1.20            | 0.59         | 68.00        | 4.56             | 1.64            | 0.00         |
| 16.00        | 4.01             | 1.27            | 0.48         | 69.00        | 4.56             | 1.64            | 0.00         |
| 17.00        | 4.11             | 1.34            | 0.40         | 70.00        | 4.56             | 1.64            | 0.00         |
| 18.00        | 4.20             | 1.40            | 0.36         | 71.00        | 4.56             | 1.64            | 0.00         |
| 19.00        | 4.28             | 1.45            | 0.31         | 72.00        | 4.56             | 1.64            | 0.00         |
| 20.00        | 4.34             | 1.49            | 0.27         | 73.00        | 4.56             | 1.64            | 0.00         |
| 21.00        | 4.40             | 1.53            | 0.24         | 74.00        | 4.56             | 1.64            | 0.00         |
| 22.00        | 4.46             | 1.57            | 0.24         | 75.00        | 4.56             | 1.64            | 0.00         |
| 23.00        | 4.51             | 1.61            | 0.23         | 76.00        | 4.56             | 1.64            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>1.64</b>     | 0.22         | 77.00        | 4.56             | 1.64            | 0.00         |
| 25.00        | 4.56             | 1.64            | 0.01         | 78.00        | 4.56             | 1.64            | 0.00         |
| 26.00        | 4.56             | 1.64            | 0.00         | 79.00        | 4.56             | 1.64            | 0.00         |
| 27.00        | 4.56             | 1.64            | 0.00         | 80.00        | 4.56             | 1.64            | 0.00         |
| 28.00        | 4.56             | 1.64            | 0.00         | 81.00        | 4.56             | 1.64            | 0.00         |
| 29.00        | 4.56             | 1.64            | 0.00         | 82.00        | 4.56             | 1.64            | 0.00         |
| 30.00        | 4.56             | 1.64            | 0.00         | 83.00        | 4.56             | 1.64            | 0.00         |
| 31.00        | 4.56             | 1.64            | 0.00         | 84.00        | 4.56             | 1.64            | 0.00         |
| 32.00        | 4.56             | 1.64            | 0.00         | 85.00        | 4.56             | 1.64            | 0.00         |
| 33.00        | 4.56             | 1.64            | 0.00         | 86.00        | 4.56             | 1.64            | 0.00         |
| 34.00        | 4.56             | 1.64            | 0.00         | 87.00        | 4.56             | 1.64            | 0.00         |
| 35.00        | 4.56             | 1.64            | 0.00         | 88.00        | 4.56             | 1.64            | 0.00         |
| 36.00        | 4.56             | 1.64            | 0.00         | 89.00        | 4.56             | 1.64            | 0.00         |
| 37.00        | 4.56             | 1.64            | 0.00         | 90.00        | 4.56             | 1.64            | 0.00         |
| 38.00        | 4.56             | 1.64            | 0.00         | 91.00        | 4.56             | 1.64            | 0.00         |
| 39.00        | 4.56             | 1.64            | 0.00         | 92.00        | 4.56             | 1.64            | 0.00         |
| 40.00        | 4.56             | 1.64            | 0.00         | 93.00        | 4.56             | 1.64            | 0.00         |
| 41.00        | 4.56             | 1.64            | 0.00         | 94.00        | 4.56             | 1.64            | 0.00         |
| 42.00        | 4.56             | 1.64            | 0.00         | 95.00        | 4.56             | 1.64            | 0.00         |
| 43.00        | 4.56             | 1.64            | 0.00         | 96.00        | 4.56             | 1.64            | 0.00         |
| 44.00        | 4.56             | 1.64            | 0.00         | 97.00        | 4.56             | 1.64            | 0.00         |
| 45.00        | 4.56             | 1.64            | 0.00         | 98.00        | 4.56             | 1.64            | 0.00         |
| 46.00        | 4.56             | 1.64            | 0.00         | 99.00        | 4.56             | 1.64            | 0.00         |
| 47.00        | 4.56             | 1.64            | 0.00         | 100.00       | 4.56             | 1.64            | 0.00         |
| 48.00        | 4.56             | 1.64            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 1.64            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 1.64            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 1.64            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 1.64            | 0.00         |              |                  |                 |              |

**Summary for Pond 3ST: Existing Sediment Trap**

Inflow Area = 9.901 ac, 9.99% Impervious, Inflow Depth = 0.67" for 25-yr event  
 Inflow = 3.20 cfs @ 12.43 hrs, Volume= 0.550 af  
 Outflow = 2.94 cfs @ 12.56 hrs, Volume= 0.539 af, Atten= 8%, Lag= 7.8 min  
 Primary = 2.94 cfs @ 12.56 hrs, Volume= 0.539 af  
 Routed to Pond 4ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.42' Surf.Area= 0.130 ac Storage= 0.177 af  
 Peak Elev= 337.75' @ 12.56 hrs Surf.Area= 0.148 ac Storage= 0.222 af (0.046 af above start)

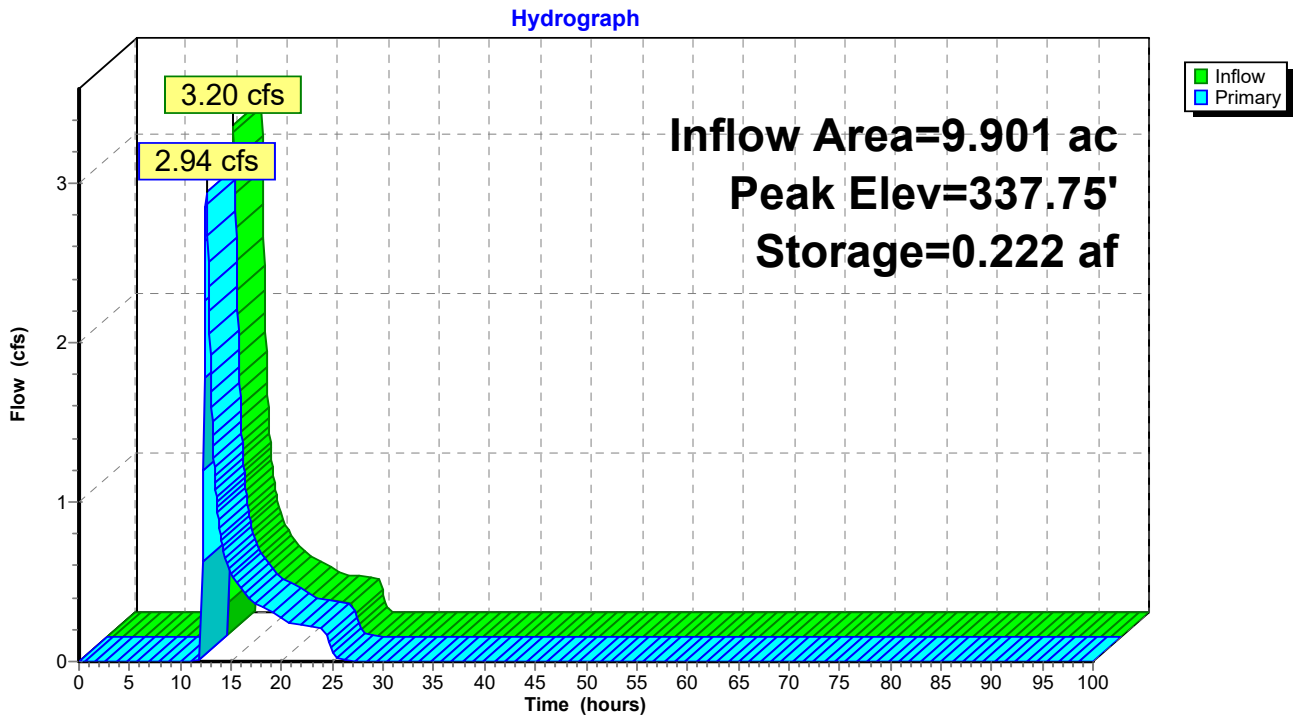
Plug-Flow detention time= 247.1 min calculated for 0.363 af (66% of inflow)  
 Center-of-Mass det. time= 18.6 min ( 957.6 - 939.1 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 335.00'              | 0.261 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 335.00              | 0.023                | 277.9            | 0.000  | 0.000                    | 0.023               |  |
| 336.00              | 0.063                | 408.6            | 0.041  | 0.041                    | 0.187               |  |
| 337.00              | 0.109                | 536.8            | 0.085  | 0.126                    | 0.409               |  |
| 338.00              | 0.163                | 586.1            | 0.135  | 0.261                    | 0.511               |  |

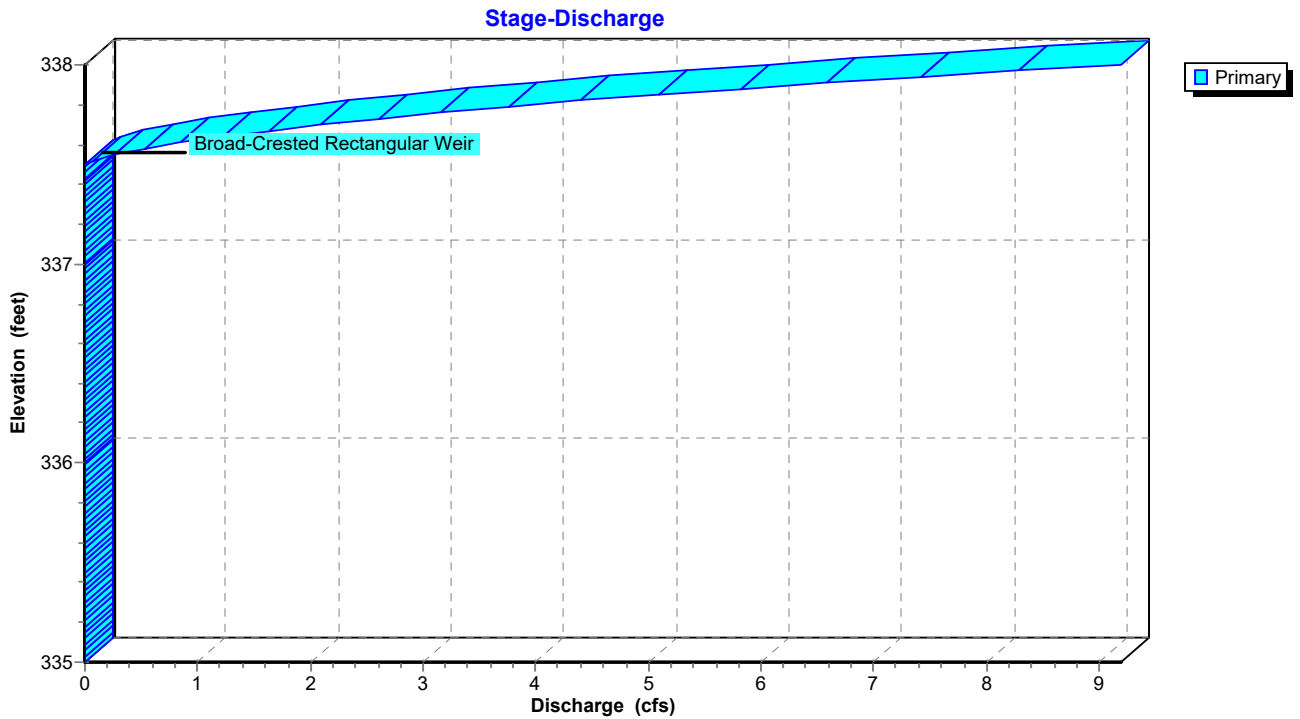
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 337.50' | <b>10.0' long x 5.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88                         |  |  |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=2.93 cfs @ 12.56 hrs HW=337.75' TW=335.85' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 2.93 cfs @ 1.18 fps)

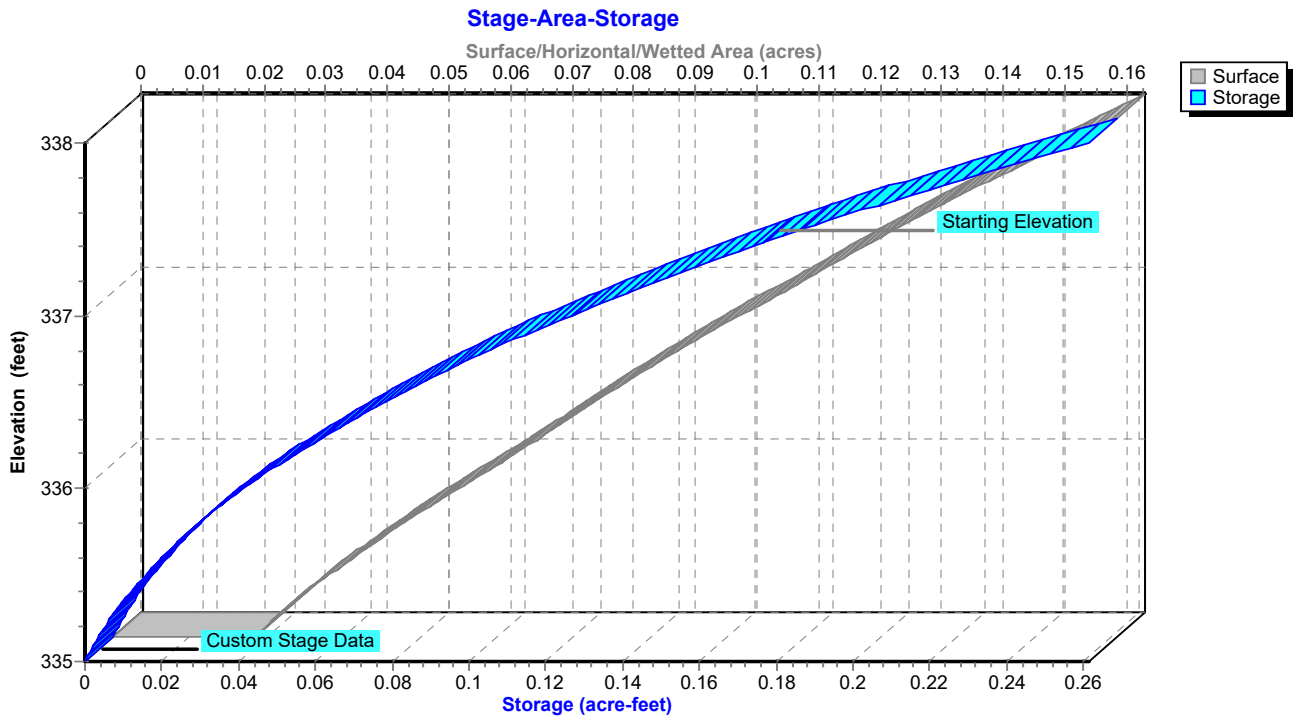
**Pond 3ST: Existing Sediment Trap**



**Pond 3ST: Existing Sediment Trap**



### Pond 3ST: Existing Sediment Trap





**Hydrograph for Pond 3ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.177               | 337.42           | 0.00          |
| 2.50         | 0.00         | 0.177               | 337.42           | 0.00          |
| 5.00         | 0.00         | 0.177               | 337.42           | 0.00          |
| 7.50         | 0.00         | 0.177               | 337.42           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.177               | 337.42           | 0.00          |
| 12.50        | <b>3.13</b>  | <b>0.221</b>        | <b>337.74</b>    | <b>2.85</b>   |
| 15.00        | 0.53         | <b>0.198</b>        | <b>337.58</b>    | <b>0.55</b>   |
| 17.50        | 0.35         | 0.196               | 337.56           | 0.36          |
| 20.00        | 0.26         | 0.194               | 337.55           | 0.27          |
| 22.50        | 0.22         | 0.193               | 337.55           | 0.23          |
| 25.00        | 0.02         | 0.190               | 337.52           | 0.06          |
| 27.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 30.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 32.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 35.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 37.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 40.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 42.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 45.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 47.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 50.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 52.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 55.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 57.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 60.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 62.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 65.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 67.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 70.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 72.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 75.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 77.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 80.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 82.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 85.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 87.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 90.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 92.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 95.00        | 0.00         | 0.187               | 337.50           | 0.00          |
| 97.50        | 0.00         | 0.187               | 337.50           | 0.00          |
| 100.00       | 0.00         | 0.187               | 337.50           | 0.00          |

**Stage-Discharge for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 335.00              | 0.00             | 336.06              | 0.00             | 337.12              | 0.00             |
| 335.02              | 0.00             | 336.08              | 0.00             | 337.14              | 0.00             |
| 335.04              | 0.00             | 336.10              | 0.00             | 337.16              | 0.00             |
| 335.06              | 0.00             | 336.12              | 0.00             | 337.18              | 0.00             |
| 335.08              | 0.00             | 336.14              | 0.00             | 337.20              | 0.00             |
| 335.10              | 0.00             | 336.16              | 0.00             | 337.22              | 0.00             |
| 335.12              | 0.00             | 336.18              | 0.00             | 337.24              | 0.00             |
| 335.14              | 0.00             | 336.20              | 0.00             | 337.26              | 0.00             |
| 335.16              | 0.00             | 336.22              | 0.00             | 337.28              | 0.00             |
| 335.18              | 0.00             | 336.24              | 0.00             | 337.30              | 0.00             |
| 335.20              | 0.00             | 336.26              | 0.00             | 337.32              | 0.00             |
| 335.22              | 0.00             | 336.28              | 0.00             | 337.34              | 0.00             |
| 335.24              | 0.00             | 336.30              | 0.00             | 337.36              | 0.00             |
| 335.26              | 0.00             | 336.32              | 0.00             | 337.38              | 0.00             |
| 335.28              | 0.00             | 336.34              | 0.00             | 337.40              | 0.00             |
| 335.30              | 0.00             | 336.36              | 0.00             | 337.42              | 0.00             |
| 335.32              | 0.00             | 336.38              | 0.00             | 337.44              | 0.00             |
| 335.34              | 0.00             | 336.40              | 0.00             | 337.46              | 0.00             |
| 335.36              | 0.00             | 336.42              | 0.00             | 337.48              | 0.00             |
| 335.38              | 0.00             | 336.44              | 0.00             | 337.50              | 0.00             |
| 335.40              | 0.00             | 336.46              | 0.00             | 337.52              | 0.07             |
| 335.42              | 0.00             | 336.48              | 0.00             | 337.54              | 0.19             |
| 335.44              | 0.00             | 336.50              | 0.00             | 337.56              | 0.34             |
| 335.46              | 0.00             | 336.52              | 0.00             | 337.58              | 0.53             |
| 335.48              | 0.00             | 336.54              | 0.00             | 337.60              | 0.74             |
| 335.50              | 0.00             | 336.56              | 0.00             | 337.62              | 0.97             |
| 335.52              | 0.00             | 336.58              | 0.00             | 337.64              | 1.23             |
| 335.54              | 0.00             | 336.60              | 0.00             | 337.66              | 1.50             |
| 335.56              | 0.00             | 336.62              | 0.00             | 337.68              | 1.79             |
| 335.58              | 0.00             | 336.64              | 0.00             | 337.70              | 2.09             |
| 335.60              | 0.00             | 336.66              | 0.00             | 337.72              | 2.43             |
| 335.62              | 0.00             | 336.68              | 0.00             | 337.74              | 2.79             |
| 335.64              | 0.00             | 336.70              | 0.00             | 337.76              | 3.17             |
| 335.66              | 0.00             | 336.72              | 0.00             | 337.78              | 3.56             |
| 335.68              | 0.00             | 336.74              | 0.00             | 337.80              | 3.98             |
| 335.70              | 0.00             | 336.76              | 0.00             | 337.82              | 4.41             |
| 335.72              | 0.00             | 336.78              | 0.00             | 337.84              | 4.86             |
| 335.74              | 0.00             | 336.80              | 0.00             | 337.86              | 5.33             |
| 335.76              | 0.00             | 336.82              | 0.00             | 337.88              | 5.82             |
| 335.78              | 0.00             | 336.84              | 0.00             | 337.90              | 6.32             |
| 335.80              | 0.00             | 336.86              | 0.00             | 337.92              | 6.86             |
| 335.82              | 0.00             | 336.88              | 0.00             | 337.94              | 7.41             |
| 335.84              | 0.00             | 336.90              | 0.00             | 337.96              | 7.99             |
| 335.86              | 0.00             | 336.92              | 0.00             | 337.98              | 8.58             |
| 335.88              | 0.00             | 336.94              | 0.00             | 338.00              | <b>9.19</b>      |
| 335.90              | 0.00             | 336.96              | 0.00             |                     |                  |
| 335.92              | 0.00             | 336.98              | 0.00             |                     |                  |
| 335.94              | 0.00             | 337.00              | 0.00             |                     |                  |
| 335.96              | 0.00             | 337.02              | 0.00             |                     |                  |
| 335.98              | 0.00             | 337.04              | 0.00             |                     |                  |
| 336.00              | 0.00             | 337.06              | 0.00             |                     |                  |
| 336.02              | 0.00             | 337.08              | 0.00             |                     |                  |
| 336.04              | 0.00             | 337.10              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 335.00              | 0.023              | 0.000                  | 337.65              | 0.143              | 0.208                  |
| 335.05              | 0.025              | 0.001                  | 337.70              | 0.146              | 0.215                  |
| 335.10              | 0.026              | 0.002                  | 337.75              | 0.148              | 0.222                  |
| 335.15              | 0.028              | 0.004                  | 337.80              | 0.151              | 0.230                  |
| 335.20              | 0.029              | 0.005                  | 337.85              | 0.154              | 0.238                  |
| 335.25              | 0.031              | 0.007                  | 337.90              | 0.157              | 0.245                  |
| 335.30              | 0.033              | 0.008                  | 337.95              | 0.160              | 0.253                  |
| 335.35              | 0.035              | 0.010                  | 338.00              | <b>0.163</b>       | <b>0.261</b>           |
| 335.40              | 0.037              | 0.012                  |                     |                    |                        |
| 335.45              | 0.039              | 0.014                  |                     |                    |                        |
| 335.50              | 0.041              | 0.016                  |                     |                    |                        |
| 335.55              | 0.043              | 0.018                  |                     |                    |                        |
| 335.60              | 0.045              | 0.020                  |                     |                    |                        |
| 335.65              | 0.047              | 0.022                  |                     |                    |                        |
| 335.70              | 0.049              | 0.025                  |                     |                    |                        |
| 335.75              | 0.051              | 0.027                  |                     |                    |                        |
| 335.80              | 0.053              | 0.030                  |                     |                    |                        |
| 335.85              | 0.056              | 0.032                  |                     |                    |                        |
| 335.90              | 0.058              | 0.035                  |                     |                    |                        |
| 335.95              | 0.061              | 0.038                  |                     |                    |                        |
| 336.00              | 0.063              | 0.041                  |                     |                    |                        |
| 336.05              | 0.065              | 0.045                  |                     |                    |                        |
| 336.10              | 0.067              | 0.048                  |                     |                    |                        |
| 336.15              | 0.069              | 0.051                  |                     |                    |                        |
| 336.20              | 0.071              | 0.055                  |                     |                    |                        |
| 336.25              | 0.073              | 0.058                  |                     |                    |                        |
| 336.30              | 0.075              | 0.062                  |                     |                    |                        |
| 336.35              | 0.078              | 0.066                  |                     |                    |                        |
| 336.40              | 0.080              | 0.070                  |                     |                    |                        |
| 336.45              | 0.082              | 0.074                  |                     |                    |                        |
| 336.50              | 0.084              | 0.078                  |                     |                    |                        |
| 336.55              | 0.087              | 0.082                  |                     |                    |                        |
| 336.60              | 0.089              | 0.087                  |                     |                    |                        |
| 336.65              | 0.091              | 0.091                  |                     |                    |                        |
| 336.70              | 0.094              | 0.096                  |                     |                    |                        |
| 336.75              | 0.096              | 0.101                  |                     |                    |                        |
| 336.80              | 0.099              | 0.106                  |                     |                    |                        |
| 336.85              | 0.101              | 0.111                  |                     |                    |                        |
| 336.90              | 0.104              | 0.116                  |                     |                    |                        |
| 336.95              | 0.106              | 0.121                  |                     |                    |                        |
| 337.00              | 0.109              | 0.126                  |                     |                    |                        |
| 337.05              | 0.111              | 0.132                  |                     |                    |                        |
| 337.10              | 0.114              | 0.137                  |                     |                    |                        |
| 337.15              | 0.116              | 0.143                  |                     |                    |                        |
| 337.20              | 0.119              | 0.149                  |                     |                    |                        |
| 337.25              | 0.121              | 0.155                  |                     |                    |                        |
| 337.30              | 0.124              | 0.161                  |                     |                    |                        |
| 337.35              | 0.127              | 0.168                  |                     |                    |                        |
| 337.40              | 0.129              | 0.174                  |                     |                    |                        |
| 337.45              | 0.132              | 0.180                  |                     |                    |                        |
| 337.50              | 0.135              | 0.187                  |                     |                    |                        |
| 337.55              | 0.137              | 0.194                  |                     |                    |                        |
| 337.60              | 0.140              | 0.201                  |                     |                    |                        |

**Summary for Pond 4ST: Existing Sediment Trap**

[93] Warning: Storage range exceeded by 0.20'

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 1.05" for 25-yr event  
 Inflow = 8.25 cfs @ 12.02 hrs, Volume= 1.016 af  
 Outflow = 9.22 cfs @ 12.04 hrs, Volume= 0.971 af, Atten= 0%, Lag= 1.7 min  
 Primary = 9.22 cfs @ 12.04 hrs, Volume= 0.971 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 336.20' @ 12.04 hrs Surf.Area= 0.119 ac Storage= 0.087 af

Plug-Flow detention time= 48.1 min calculated for 0.971 af (96% of inflow)  
 Center-of-Mass det. time= 22.3 min ( 907.0 - 884.7 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 334.00' | 0.003 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #2     | 334.00' | 0.006 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #3     | 334.55' | 0.078 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
|        |         | 0.087 af      | Total Available Storage                                    |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.002             | 58.0          | 0.000                 | 0.000                 | 0.002            |
| 334.55           | 0.008             | 171.7         | 0.003                 | 0.003                 | 0.050            |

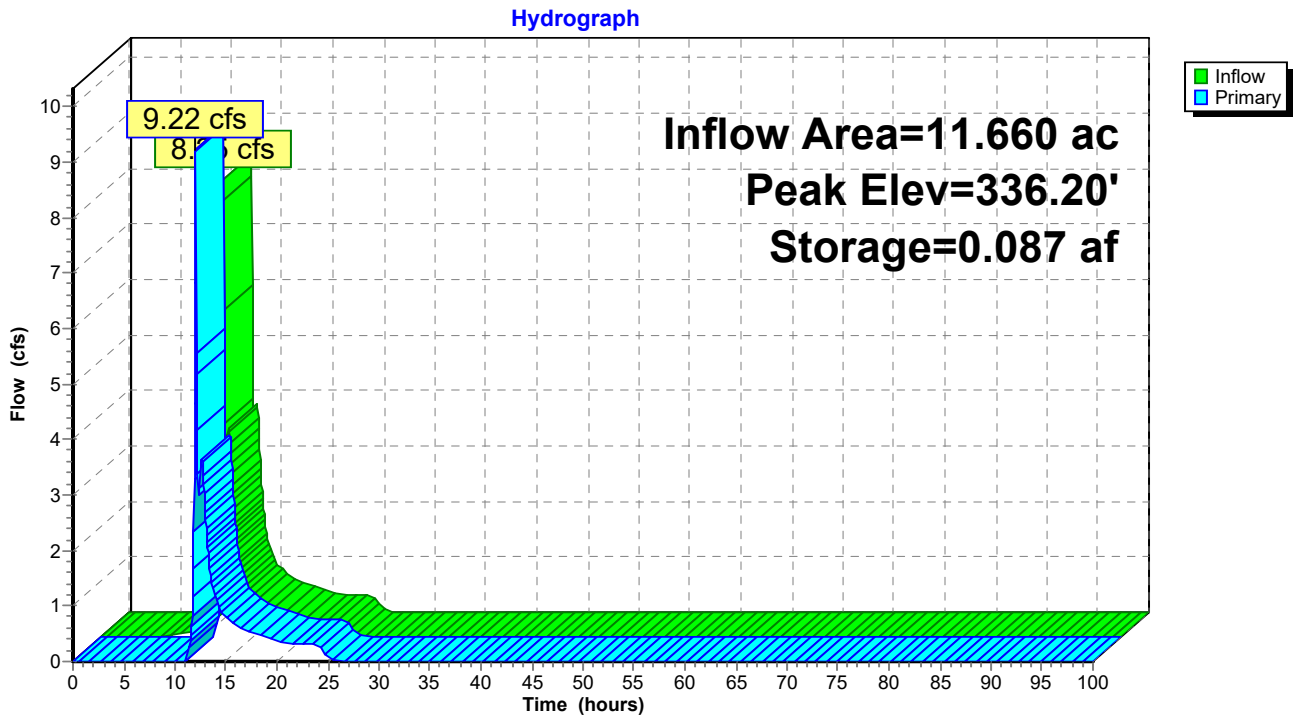
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.004             | 74.4          | 0.000                 | 0.000                 | 0.004            |
| 334.55           | 0.022             | 366.8         | 0.006                 | 0.006                 | 0.240            |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.55           | 0.022             | 366.8         | 0.000                 | 0.000                 | 0.022            |
| 335.00           | 0.042             | 462.0         | 0.014                 | 0.014                 | 0.166            |
| 336.00           | 0.089             | 513.4         | 0.064                 | 0.078                 | 0.258            |

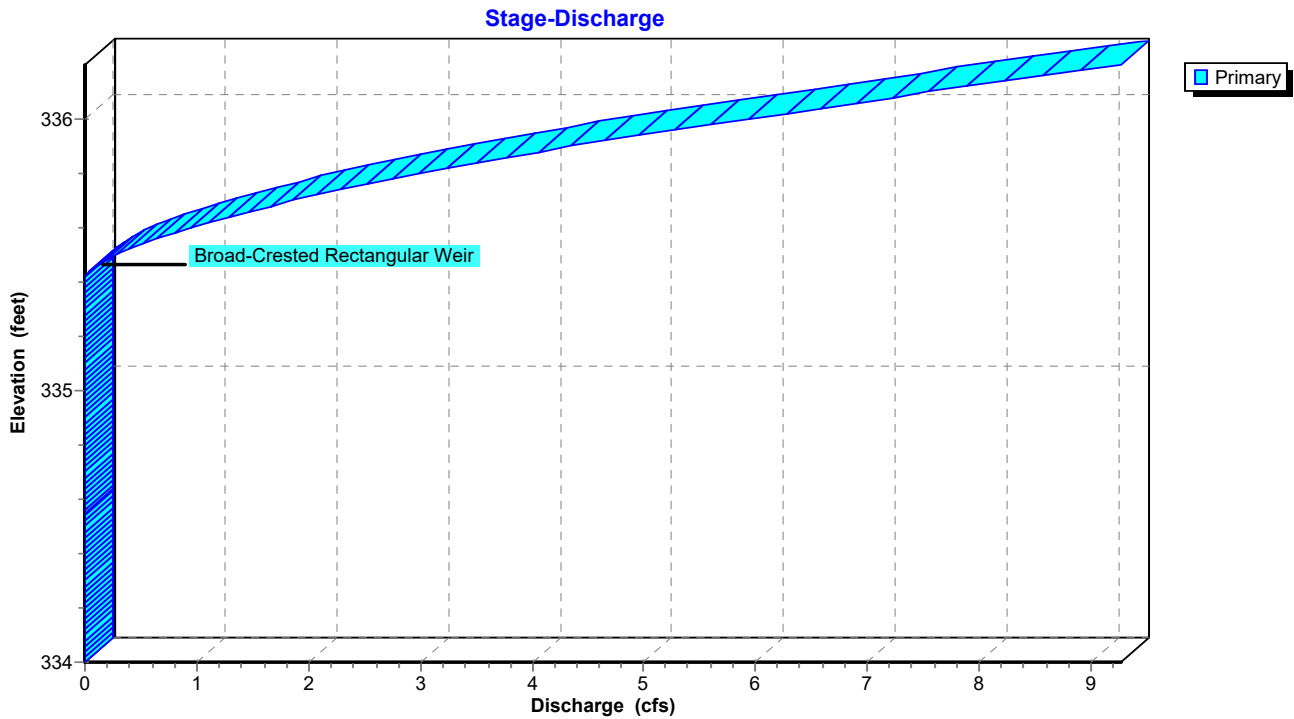
| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 335.42' | <b>5.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=8.92 cfs @ 12.04 hrs HW=336.18' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 8.92 cfs @ 2.35 fps)

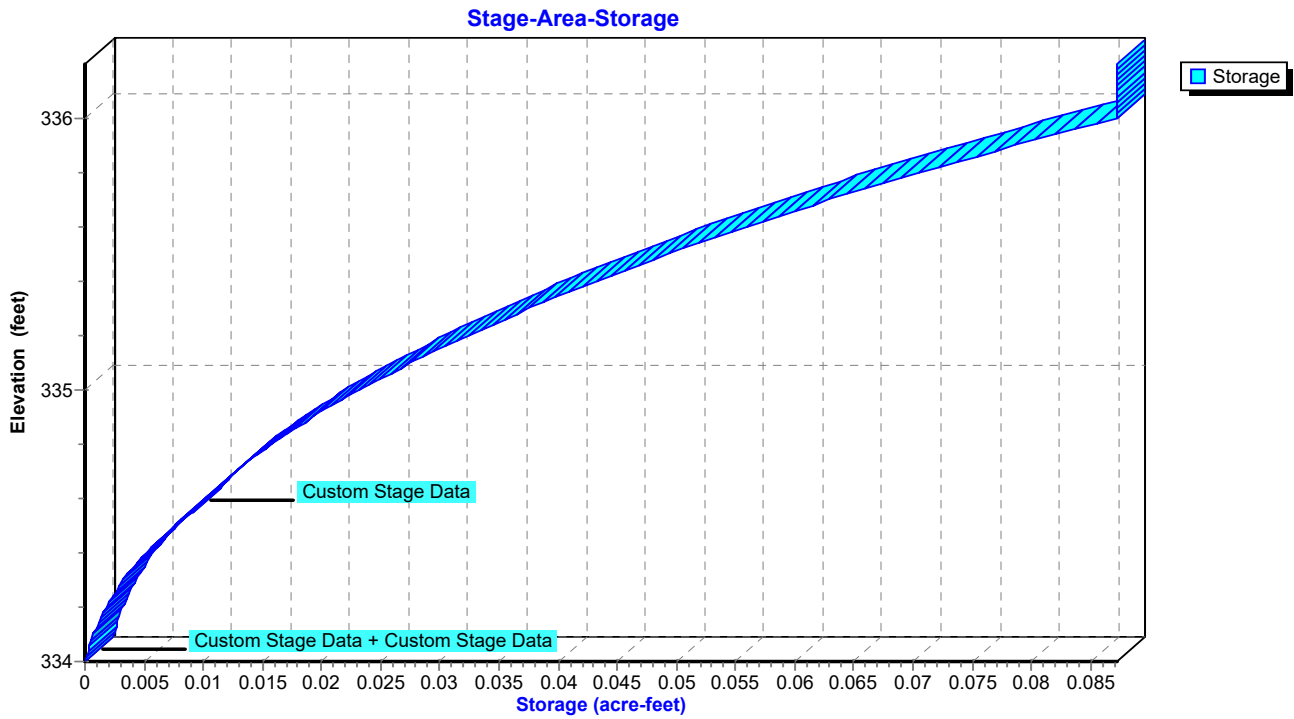
**Pond 4ST: Existing Sediment Trap**



**Pond 4ST: Existing Sediment Trap**



### Pond 4ST: Existing Sediment Trap



**Hydrograph for Pond 4ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 2.50            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 5.00            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 7.50            | 0.04            | 0.004                  | 334.35              | 0.00             |
| 10.00           | <b>0.14</b>     | <b>0.021</b>           | <b>334.95</b>       | <b>0.00</b>      |
| 12.50           | <b>3.76</b>     | <b>0.074</b>           | <b>335.84</b>       | <b>3.51</b>      |
| 15.00           | 0.78            | 0.055                  | 335.58              | 0.80             |
| 17.50           | 0.51            | 0.052                  | 335.54              | 0.51             |
| 20.00           | 0.37            | 0.050                  | 335.52              | 0.38             |
| 22.50           | 0.32            | 0.050                  | 335.51              | 0.32             |
| 25.00           | 0.06            | 0.047                  | 335.46              | 0.10             |
| 27.50           | 0.00            | 0.045                  | 335.42              | 0.00             |
| 30.00           | 0.00            | 0.045                  | 335.42              | 0.00             |
| 32.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 35.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 37.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 40.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 42.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 45.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 47.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 50.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 52.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 55.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 57.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 60.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 62.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 65.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 67.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 70.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 72.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 75.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 77.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 80.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 82.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 85.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 87.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 90.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 92.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 95.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 97.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 100.00          | 0.00            | 0.044                  | 335.42              | 0.00             |

**Stage-Discharge for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 334.00              | 0.00             | 335.06              | 0.00             | 336.12              | 7.89             |
| 334.02              | 0.00             | 335.08              | 0.00             | 336.14              | 8.23             |
| 334.04              | 0.00             | 335.10              | 0.00             | 336.16              | 8.57             |
| 334.06              | 0.00             | 335.12              | 0.00             | 336.18              | 8.92             |
| 334.08              | 0.00             | 335.14              | 0.00             | 336.20              | <b>9.27</b>      |
| 334.10              | 0.00             | 335.16              | 0.00             |                     |                  |
| 334.12              | 0.00             | 335.18              | 0.00             |                     |                  |
| 334.14              | 0.00             | 335.20              | 0.00             |                     |                  |
| 334.16              | 0.00             | 335.22              | 0.00             |                     |                  |
| 334.18              | 0.00             | 335.24              | 0.00             |                     |                  |
| 334.20              | 0.00             | 335.26              | 0.00             |                     |                  |
| 334.22              | 0.00             | 335.28              | 0.00             |                     |                  |
| 334.24              | 0.00             | 335.30              | 0.00             |                     |                  |
| 334.26              | 0.00             | 335.32              | 0.00             |                     |                  |
| 334.28              | 0.00             | 335.34              | 0.00             |                     |                  |
| 334.30              | 0.00             | 335.36              | 0.00             |                     |                  |
| 334.32              | 0.00             | 335.38              | 0.00             |                     |                  |
| 334.34              | 0.00             | 335.40              | 0.00             |                     |                  |
| 334.36              | 0.00             | 335.42              | 0.00             |                     |                  |
| 334.38              | 0.00             | 335.44              | 0.04             |                     |                  |
| 334.40              | 0.00             | 335.46              | 0.10             |                     |                  |
| 334.42              | 0.00             | 335.48              | 0.18             |                     |                  |
| 334.44              | 0.00             | 335.50              | 0.28             |                     |                  |
| 334.46              | 0.00             | 335.52              | 0.39             |                     |                  |
| 334.48              | 0.00             | 335.54              | 0.52             |                     |                  |
| 334.50              | 0.00             | 335.56              | 0.65             |                     |                  |
| 334.52              | 0.00             | 335.58              | 0.80             |                     |                  |
| 334.54              | 0.00             | 335.60              | 0.95             |                     |                  |
| 334.56              | 0.00             | 335.62              | 1.11             |                     |                  |
| 334.58              | 0.00             | 335.64              | 1.29             |                     |                  |
| 334.60              | 0.00             | 335.66              | 1.47             |                     |                  |
| 334.62              | 0.00             | 335.68              | 1.66             |                     |                  |
| 334.64              | 0.00             | 335.70              | 1.87             |                     |                  |
| 334.66              | 0.00             | 335.72              | 2.07             |                     |                  |
| 334.68              | 0.00             | 335.74              | 2.29             |                     |                  |
| 334.70              | 0.00             | 335.76              | 2.52             |                     |                  |
| 334.72              | 0.00             | 335.78              | 2.75             |                     |                  |
| 334.74              | 0.00             | 335.80              | 2.99             |                     |                  |
| 334.76              | 0.00             | 335.82              | 3.24             |                     |                  |
| 334.78              | 0.00             | 335.84              | 3.50             |                     |                  |
| 334.80              | 0.00             | 335.86              | 3.78             |                     |                  |
| 334.82              | 0.00             | 335.88              | 4.06             |                     |                  |
| 334.84              | 0.00             | 335.90              | 4.35             |                     |                  |
| 334.86              | 0.00             | 335.92              | 4.65             |                     |                  |
| 334.88              | 0.00             | 335.94              | 4.96             |                     |                  |
| 334.90              | 0.00             | 335.96              | 5.27             |                     |                  |
| 334.92              | 0.00             | 335.98              | 5.60             |                     |                  |
| 334.94              | 0.00             | 336.00              | 5.93             |                     |                  |
| 334.96              | 0.00             | 336.02              | 6.27             |                     |                  |
| 334.98              | 0.00             | 336.04              | 6.59             |                     |                  |
| 335.00              | 0.00             | 336.06              | 6.91             |                     |                  |
| 335.02              | 0.00             | 336.08              | 7.23             |                     |                  |
| 335.04              | 0.00             | 336.10              | 7.56             |                     |                  |



**Stage-Area-Storage for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Storage<br>(acre-feet) | Elevation<br>(feet) | Storage<br>(acre-feet) | Elevation<br>(feet) | Storage<br>(acre-feet) |
|---------------------|------------------------|---------------------|------------------------|---------------------|------------------------|
| 334.00              | 0.000                  | 335.06              | 0.026                  | 336.12              | 0.087                  |
| 334.02              | 0.000                  | 335.08              | 0.027                  | 336.14              | 0.087                  |
| 334.04              | 0.000                  | 335.10              | 0.028                  | 336.16              | 0.087                  |
| 334.06              | 0.000                  | 335.12              | 0.029                  | 336.18              | 0.087                  |
| 334.08              | 0.001                  | 335.14              | 0.029                  | 336.20              | 0.087                  |
| 334.10              | 0.001                  | 335.16              | 0.030                  |                     |                        |
| 334.12              | 0.001                  | 335.18              | 0.031                  |                     |                        |
| 334.14              | 0.001                  | 335.20              | 0.032                  |                     |                        |
| 334.16              | 0.001                  | 335.22              | 0.033                  |                     |                        |
| 334.18              | 0.002                  | 335.24              | 0.034                  |                     |                        |
| 334.20              | 0.002                  | 335.26              | 0.035                  |                     |                        |
| 334.22              | 0.002                  | 335.28              | 0.037                  |                     |                        |
| 334.24              | 0.002                  | 335.30              | 0.038                  |                     |                        |
| 334.26              | 0.003                  | 335.32              | 0.039                  |                     |                        |
| 334.28              | 0.003                  | 335.34              | 0.040                  |                     |                        |
| 334.30              | 0.003                  | 335.36              | 0.041                  |                     |                        |
| 334.32              | 0.004                  | 335.38              | 0.042                  |                     |                        |
| 334.34              | 0.004                  | 335.40              | 0.043                  |                     |                        |
| 334.36              | 0.004                  | 335.42              | 0.044                  |                     |                        |
| 334.38              | 0.005                  | 335.44              | 0.046                  |                     |                        |
| 334.40              | 0.005                  | 335.46              | 0.047                  |                     |                        |
| 334.42              | 0.006                  | 335.48              | 0.048                  |                     |                        |
| 334.44              | 0.006                  | 335.50              | 0.049                  |                     |                        |
| 334.46              | 0.007                  | 335.52              | 0.051                  |                     |                        |
| 334.48              | 0.007                  | 335.54              | 0.052                  |                     |                        |
| 334.50              | 0.008                  | 335.56              | 0.053                  |                     |                        |
| 334.52              | 0.008                  | 335.58              | 0.055                  |                     |                        |
| 334.54              | 0.009                  | 335.60              | 0.056                  |                     |                        |
| 334.56              | 0.009                  | 335.62              | 0.057                  |                     |                        |
| 334.58              | 0.010                  | 335.64              | 0.059                  |                     |                        |
| 334.60              | 0.010                  | 335.66              | 0.060                  |                     |                        |
| 334.62              | 0.011                  | 335.68              | 0.062                  |                     |                        |
| 334.64              | 0.011                  | 335.70              | 0.063                  |                     |                        |
| 334.66              | 0.012                  | 335.72              | 0.064                  |                     |                        |
| 334.68              | 0.012                  | 335.74              | 0.066                  |                     |                        |
| 334.70              | 0.013                  | 335.76              | 0.067                  |                     |                        |
| 334.72              | 0.013                  | 335.78              | 0.069                  |                     |                        |
| 334.74              | 0.014                  | 335.80              | 0.071                  |                     |                        |
| 334.76              | 0.015                  | 335.82              | 0.072                  |                     |                        |
| 334.78              | 0.015                  | 335.84              | 0.074                  |                     |                        |
| 334.80              | 0.016                  | 335.86              | 0.075                  |                     |                        |
| 334.82              | 0.016                  | 335.88              | 0.077                  |                     |                        |
| 334.84              | 0.017                  | 335.90              | 0.079                  |                     |                        |
| 334.86              | 0.018                  | 335.92              | 0.080                  |                     |                        |
| 334.88              | 0.019                  | 335.94              | 0.082                  |                     |                        |
| 334.90              | 0.019                  | 335.96              | 0.084                  |                     |                        |
| 334.92              | 0.020                  | 335.98              | 0.085                  |                     |                        |
| 334.94              | 0.021                  | 336.00              | <b>0.087</b>           |                     |                        |
| 334.96              | 0.022                  | 336.02              | 0.087                  |                     |                        |
| 334.98              | 0.022                  | 336.04              | 0.087                  |                     |                        |
| 335.00              | 0.023                  | 336.06              | 0.087                  |                     |                        |
| 335.02              | 0.024                  | 336.08              | 0.087                  |                     |                        |
| 335.04              | 0.025                  | 336.10              | 0.087                  |                     |                        |

**Summary for Pond 5ST: Existing Sediment Trap**

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.99" for 25-yr event  
 Inflow = 3.87 cfs @ 12.18 hrs, Volume= 0.369 af  
 Outflow = 3.24 cfs @ 12.29 hrs, Volume= 0.369 af, Atten= 16%, Lag= 6.3 min  
 Discarded = 3.24 cfs @ 12.29 hrs, Volume= 0.369 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 328.44' @ 12.29 hrs Surf.Area= 0.032 ac Storage= 0.022 af

Plug-Flow detention time= 1.9 min calculated for 0.369 af (100% of inflow)  
 Center-of-Mass det. time= 1.9 min ( 900.1 - 898.2 )

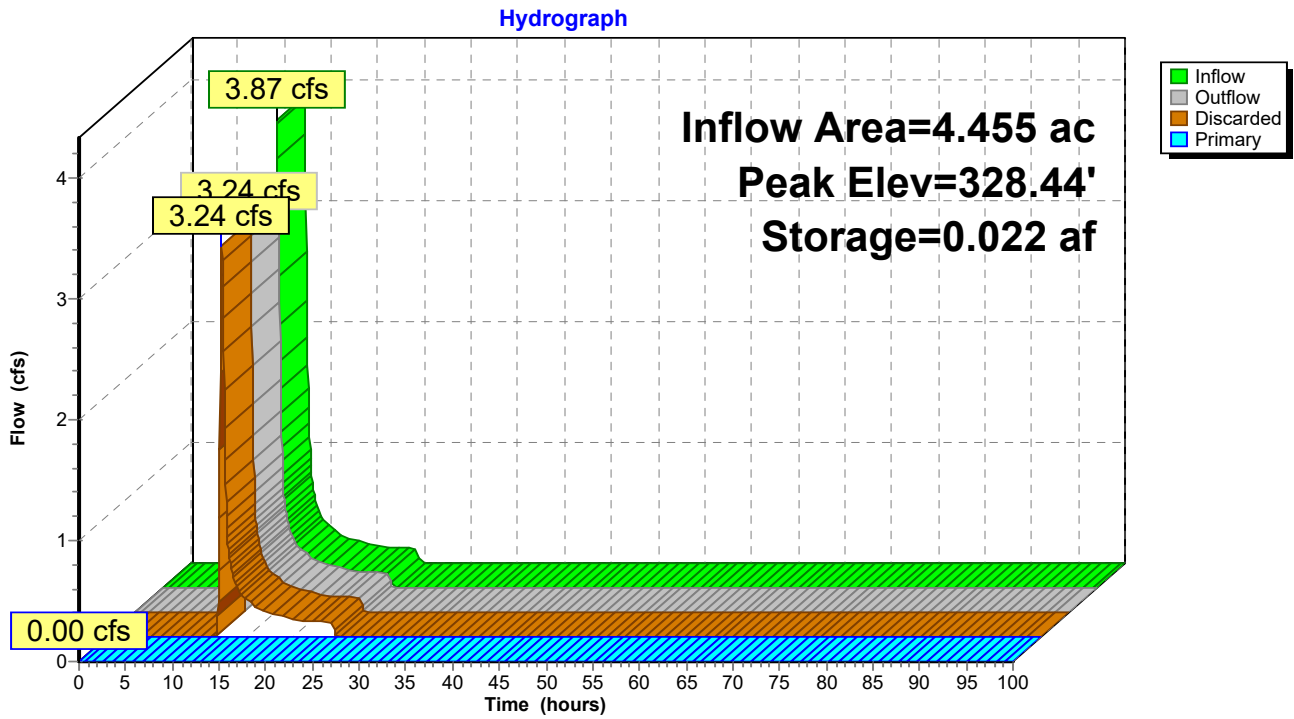
| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |  |
|------------------|-------------------|---------------|--|-----------------------|------------------|--|
| #1               | 327.00'           | 0.230 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |  |
| 327.00           | 0.002             | 70.1          | 0.000  | 0.000                 | 0.002            |  |
| 328.00           | 0.022             | 242.6         | 0.010  | 0.010                 | 0.101            |  |
| 329.00           | 0.048             | 394.7         | 0.034  | 0.044                 | 0.278            |  |
| 330.00           | 0.094             | 554.1         | 0.070  | 0.114                 | 0.554            |  |
| 331.00           | 0.140             | 615.9         | 0.116  | 0.230                 | 0.687            |  |

| Device | Routing   | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|---|--|--|--|--|--|--|--|--|--|--|
| #1     | Discarded | 327.00' | <b>100.00 in/hr Exfiltration over Horizontal area</b>           |  |  |  |  |  |  |  |  |  |  |
| #2     | Primary   | 330.00' | <b>12.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83                         |  |  |  |  |  |  |  |  |  |  |

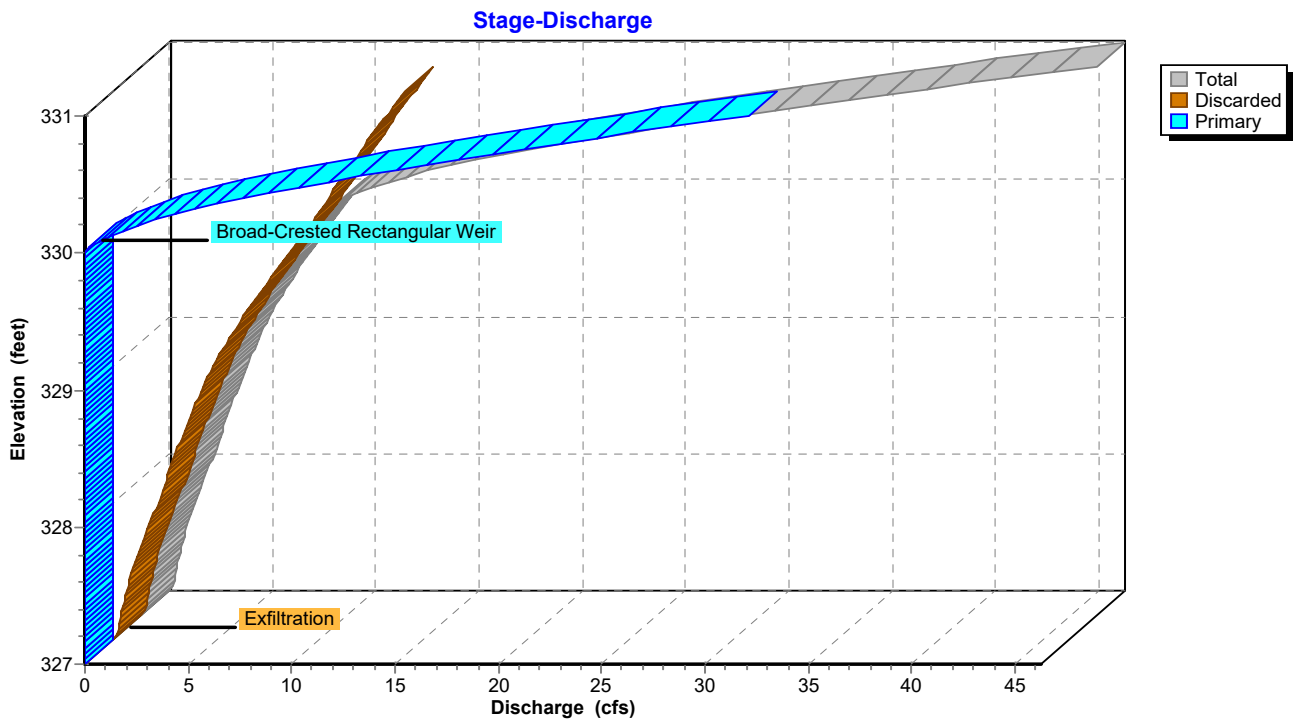
**Discarded OutFlow** Max=3.22 cfs @ 12.29 hrs HW=328.43' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 3.22 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=327.00' TW=0.00' (Dynamic Tailwater)  
 ↑2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

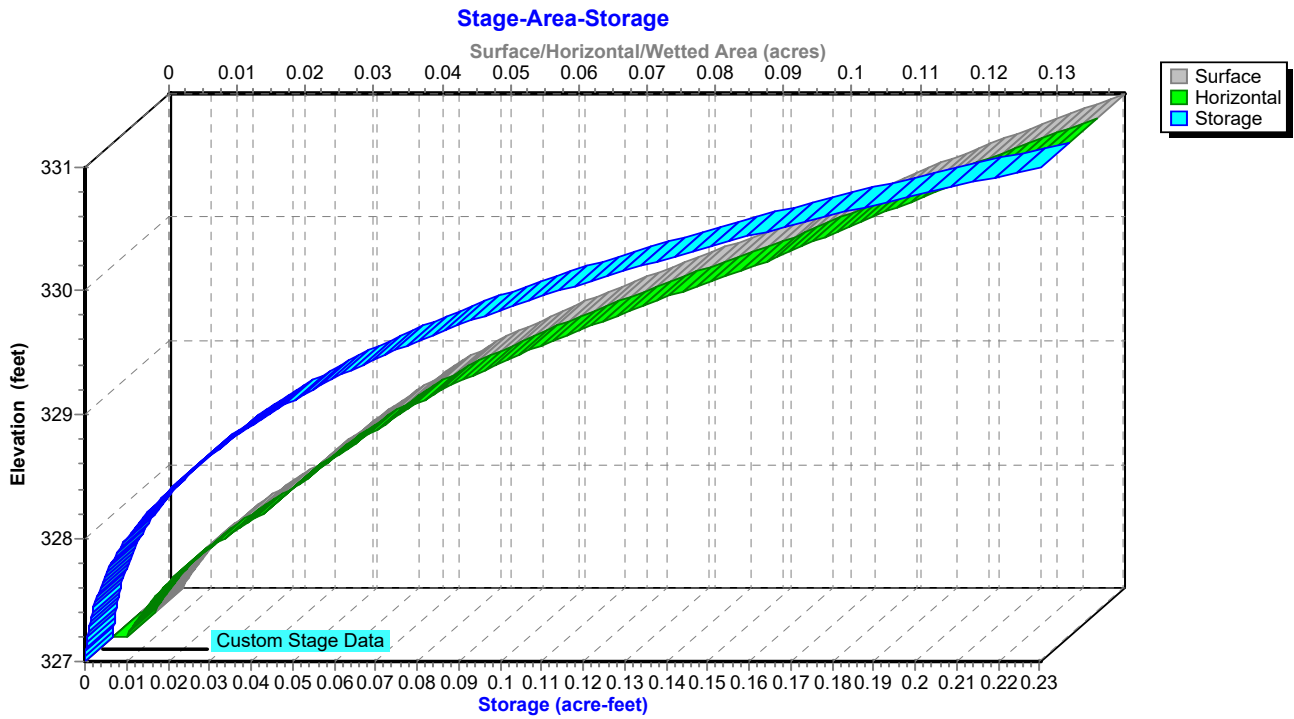
**Pond 5ST: Existing Sediment Trap**



**Pond 5ST: Existing Sediment Trap**



### Pond 5ST: Existing Sediment Trap



**Hydrograph for Pond 5ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|-----------------|---------------|
| 0.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | <b>0.00</b>   |
| 2.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 5.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 7.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0.000</b>        | <b>327.00</b>    | <b>0.00</b>   | <b>0.00</b>     | 0.00          |
| 12.50        | <b>1.64</b>  | <b>0.012</b>        | <b>328.06</b>    | <b>2.36</b>   | <b>2.36</b>     | 0.00          |
| 15.00        | 0.30         | 0.000               | 327.10           | 0.30          | 0.30            | 0.00          |
| 17.50        | 0.20         | 0.000               | 327.00           | 0.20          | 0.20            | 0.00          |
| 20.00        | 0.14         | 0.000               | 327.00           | 0.14          | 0.14            | 0.00          |
| 22.50        | 0.13         | 0.000               | 327.00           | 0.13          | 0.13            | 0.00          |
| 25.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 27.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 30.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 32.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 35.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 37.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 40.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 42.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 45.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 47.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 50.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 52.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 55.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 57.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 60.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 62.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 65.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 67.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 70.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 72.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 75.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 77.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 80.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 82.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 85.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 87.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 90.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 92.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 95.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 97.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 100.00       | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |

**1096 Existing Stormwater Conditions\_Final D Soils Gre Type II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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**Stage-Discharge for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) |
|---------------------|--------------------|--------------------|------------------|---------------------|--------------------|--------------------|------------------|
| 327.00              | 0.00               | 0.00               | 0.00             | 329.65              | 7.68               | 7.68               | 0.00             |
| 327.05              | 0.25               | 0.25               | 0.00             | 329.70              | 7.92               | 7.92               | 0.00             |
| 327.10              | 0.31               | 0.31               | 0.00             | 329.75              | 8.17               | 8.17               | 0.00             |
| 327.15              | 0.37               | 0.37               | 0.00             | 329.80              | 8.43               | 8.43               | 0.00             |
| 327.20              | 0.43               | 0.43               | 0.00             | 329.85              | 8.68               | 8.68               | 0.00             |
| 327.25              | 0.50               | 0.50               | 0.00             | 329.90              | 8.95               | 8.95               | 0.00             |
| 327.30              | 0.58               | 0.58               | 0.00             | 329.95              | 9.21               | 9.21               | 0.00             |
| 327.35              | 0.66               | 0.66               | 0.00             | 330.00              | 9.48               | 9.48               | 0.00             |
| 327.40              | 0.75               | 0.75               | 0.00             | 330.05              | 10.01              | 9.69               | 0.32             |
| 327.45              | 0.84               | 0.84               | 0.00             | 330.10              | 10.80              | 9.90               | 0.90             |
| 327.50              | 0.94               | 0.94               | 0.00             | 330.15              | 11.77              | 10.12              | 1.65             |
| 327.55              | 1.04               | 1.04               | 0.00             | 330.20              | 12.88              | 10.33              | 2.54             |
| 327.60              | 1.15               | 1.15               | 0.00             | 330.25              | 14.16              | 10.55              | 3.61             |
| 327.65              | 1.27               | 1.27               | 0.00             | 330.30              | 15.58              | 10.77              | 4.81             |
| 327.70              | 1.39               | 1.39               | 0.00             | 330.35              | 17.15              | 11.00              | 6.15             |
| 327.75              | 1.51               | 1.51               | 0.00             | 330.40              | 18.84              | 11.22              | 7.62             |
| 327.80              | 1.64               | 1.64               | 0.00             | 330.45              | 20.72              | 11.45              | 9.26             |
| 327.85              | 1.78               | 1.78               | 0.00             | 330.50              | 22.73              | 11.68              | 11.05            |
| 327.90              | 1.92               | 1.92               | 0.00             | 330.55              | 24.90              | 11.92              | 12.98            |
| 327.95              | 2.07               | 2.07               | 0.00             | 330.60              | 27.21              | 12.15              | 15.06            |
| 328.00              | 2.22               | 2.22               | 0.00             | 330.65              | 29.34              | 12.39              | 16.95            |
| 328.05              | 2.33               | 2.33               | 0.00             | 330.70              | 31.53              | 12.63              | 18.91            |
| 328.10              | 2.44               | 2.44               | 0.00             | 330.75              | 33.80              | 12.87              | 20.93            |
| 328.15              | 2.55               | 2.55               | 0.00             | 330.80              | 36.13              | 13.12              | 23.01            |
| 328.20              | 2.66               | 2.66               | 0.00             | 330.85              | 38.56              | 13.36              | 25.20            |
| 328.25              | 2.78               | 2.78               | 0.00             | 330.90              | 41.07              | 13.61              | 27.46            |
| 328.30              | 2.90               | 2.90               | 0.00             | 330.95              | 43.64              | 13.86              | 29.78            |
| 328.35              | 3.02               | 3.02               | 0.00             | 331.00              | <b>46.28</b>       | <b>14.12</b>       | <b>32.16</b>     |
| 328.40              | 3.15               | 3.15               | 0.00             |                     |                    |                    |                  |
| 328.45              | 3.27               | 3.27               | 0.00             |                     |                    |                    |                  |
| 328.50              | 3.40               | 3.40               | 0.00             |                     |                    |                    |                  |
| 328.55              | 3.54               | 3.54               | 0.00             |                     |                    |                    |                  |
| 328.60              | 3.67               | 3.67               | 0.00             |                     |                    |                    |                  |
| 328.65              | 3.81               | 3.81               | 0.00             |                     |                    |                    |                  |
| 328.70              | 3.95               | 3.95               | 0.00             |                     |                    |                    |                  |
| 328.75              | 4.09               | 4.09               | 0.00             |                     |                    |                    |                  |
| 328.80              | 4.23               | 4.23               | 0.00             |                     |                    |                    |                  |
| 328.85              | 4.38               | 4.38               | 0.00             |                     |                    |                    |                  |
| 328.90              | 4.53               | 4.53               | 0.00             |                     |                    |                    |                  |
| 328.95              | 4.68               | 4.68               | 0.00             |                     |                    |                    |                  |
| 329.00              | 4.84               | 4.84               | 0.00             |                     |                    |                    |                  |
| 329.05              | 5.04               | 5.04               | 0.00             |                     |                    |                    |                  |
| 329.10              | 5.23               | 5.23               | 0.00             |                     |                    |                    |                  |
| 329.15              | 5.44               | 5.44               | 0.00             |                     |                    |                    |                  |
| 329.20              | 5.64               | 5.64               | 0.00             |                     |                    |                    |                  |
| 329.25              | 5.85               | 5.85               | 0.00             |                     |                    |                    |                  |
| 329.30              | 6.07               | 6.07               | 0.00             |                     |                    |                    |                  |
| 329.35              | 6.29               | 6.29               | 0.00             |                     |                    |                    |                  |
| 329.40              | 6.51               | 6.51               | 0.00             |                     |                    |                    |                  |
| 329.45              | 6.74               | 6.74               | 0.00             |                     |                    |                    |                  |
| 329.50              | 6.97               | 6.97               | 0.00             |                     |                    |                    |                  |
| 329.55              | 7.20               | 7.20               | 0.00             |                     |                    |                    |                  |
| 329.60              | 7.44               | 7.44               | 0.00             |                     |                    |                    |                  |

**Stage-Area-Storage for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|-----------------------|------------------------|---------------------|--------------------|-----------------------|------------------------|
| 327.00              | 0.002              | 0.002                 | 0.000                  | 329.65              | 0.076              | 0.076                 | 0.084                  |
| 327.05              | 0.002              | 0.002                 | 0.000                  | 329.70              | 0.079              | 0.079                 | 0.088                  |
| 327.10              | 0.003              | 0.003                 | 0.000                  | 329.75              | 0.081              | 0.081                 | 0.092                  |
| 327.15              | 0.004              | 0.004                 | 0.000                  | 329.80              | 0.084              | 0.084                 | 0.096                  |
| 327.20              | 0.004              | 0.004                 | 0.001                  | 329.85              | 0.086              | 0.086                 | 0.101                  |
| 327.25              | 0.005              | 0.005                 | 0.001                  | 329.90              | 0.089              | 0.089                 | 0.105                  |
| 327.30              | 0.006              | 0.006                 | 0.001                  | 329.95              | 0.091              | 0.091                 | 0.109                  |
| 327.35              | 0.007              | 0.007                 | 0.001                  | 330.00              | 0.094              | 0.094                 | 0.114                  |
| 327.40              | 0.007              | 0.007                 | 0.002                  | 330.05              | 0.096              | 0.096                 | 0.119                  |
| 327.45              | 0.008              | 0.008                 | 0.002                  | 330.10              | 0.098              | 0.098                 | 0.124                  |
| 327.50              | 0.009              | 0.009                 | 0.003                  | 330.15              | 0.100              | 0.100                 | 0.129                  |
| 327.55              | 0.010              | 0.010                 | 0.003                  | 330.20              | 0.102              | 0.102                 | 0.134                  |
| 327.60              | 0.011              | 0.011                 | 0.004                  | 330.25              | 0.105              | 0.105                 | 0.139                  |
| 327.65              | 0.013              | 0.013                 | 0.004                  | 330.30              | 0.107              | 0.107                 | 0.144                  |
| 327.70              | 0.014              | 0.014                 | 0.005                  | 330.35              | 0.109              | 0.109                 | 0.150                  |
| 327.75              | 0.015              | 0.015                 | 0.006                  | 330.40              | 0.111              | 0.111                 | 0.155                  |
| 327.80              | 0.016              | 0.016                 | 0.006                  | 330.45              | 0.114              | 0.114                 | 0.161                  |
| 327.85              | 0.018              | 0.018                 | 0.007                  | 330.50              | 0.116              | 0.116                 | 0.166                  |
| 327.90              | 0.019              | 0.019                 | 0.008                  | 330.55              | 0.118              | 0.118                 | 0.172                  |
| 327.95              | 0.020              | 0.020                 | 0.009                  | 330.60              | 0.121              | 0.121                 | 0.178                  |
| 328.00              | 0.022              | 0.022                 | 0.010                  | 330.65              | 0.123              | 0.123                 | 0.184                  |
| 328.05              | 0.023              | 0.023                 | 0.011                  | 330.70              | 0.125              | 0.125                 | 0.191                  |
| 328.10              | 0.024              | 0.024                 | 0.013                  | 330.75              | 0.128              | 0.128                 | 0.197                  |
| 328.15              | 0.025              | 0.025                 | 0.014                  | 330.80              | 0.130              | 0.130                 | 0.203                  |
| 328.20              | 0.026              | 0.026                 | 0.015                  | 330.85              | 0.133              | 0.133                 | 0.210                  |
| 328.25              | 0.028              | 0.028                 | 0.016                  | 330.90              | 0.135              | 0.135                 | 0.217                  |
| 328.30              | 0.029              | 0.029                 | 0.018                  | 330.95              | 0.137              | 0.137                 | 0.223                  |
| 328.35              | 0.030              | 0.030                 | 0.019                  | 331.00              | <b>0.140</b>       | <b>0.140</b>          | <b>0.230</b>           |
| 328.40              | 0.031              | 0.031                 | 0.021                  |                     |                    |                       |                        |
| 328.45              | 0.032              | 0.032                 | 0.022                  |                     |                    |                       |                        |
| 328.50              | 0.034              | 0.034                 | 0.024                  |                     |                    |                       |                        |
| 328.55              | 0.035              | 0.035                 | 0.026                  |                     |                    |                       |                        |
| 328.60              | 0.036              | 0.036                 | 0.028                  |                     |                    |                       |                        |
| 328.65              | 0.038              | 0.038                 | 0.029                  |                     |                    |                       |                        |
| 328.70              | 0.039              | 0.039                 | 0.031                  |                     |                    |                       |                        |
| 328.75              | 0.041              | 0.041                 | 0.033                  |                     |                    |                       |                        |
| 328.80              | 0.042              | 0.042                 | 0.035                  |                     |                    |                       |                        |
| 328.85              | 0.043              | 0.043                 | 0.038                  |                     |                    |                       |                        |
| 328.90              | 0.045              | 0.045                 | 0.040                  |                     |                    |                       |                        |
| 328.95              | 0.046              | 0.046                 | 0.042                  |                     |                    |                       |                        |
| 329.00              | 0.048              | 0.048                 | 0.044                  |                     |                    |                       |                        |
| 329.05              | 0.050              | 0.050                 | 0.047                  |                     |                    |                       |                        |
| 329.10              | 0.052              | 0.052                 | 0.049                  |                     |                    |                       |                        |
| 329.15              | 0.054              | 0.054                 | 0.052                  |                     |                    |                       |                        |
| 329.20              | 0.056              | 0.056                 | 0.055                  |                     |                    |                       |                        |
| 329.25              | 0.058              | 0.058                 | 0.058                  |                     |                    |                       |                        |
| 329.30              | 0.060              | 0.060                 | 0.061                  |                     |                    |                       |                        |
| 329.35              | 0.062              | 0.062                 | 0.064                  |                     |                    |                       |                        |
| 329.40              | 0.065              | 0.065                 | 0.067                  |                     |                    |                       |                        |
| 329.45              | 0.067              | 0.067                 | 0.070                  |                     |                    |                       |                        |
| 329.50              | 0.069              | 0.069                 | 0.073                  |                     |                    |                       |                        |
| 329.55              | 0.071              | 0.071                 | 0.077                  |                     |                    |                       |                        |
| 329.60              | 0.074              | 0.074                 | 0.081                  |                     |                    |                       |                        |

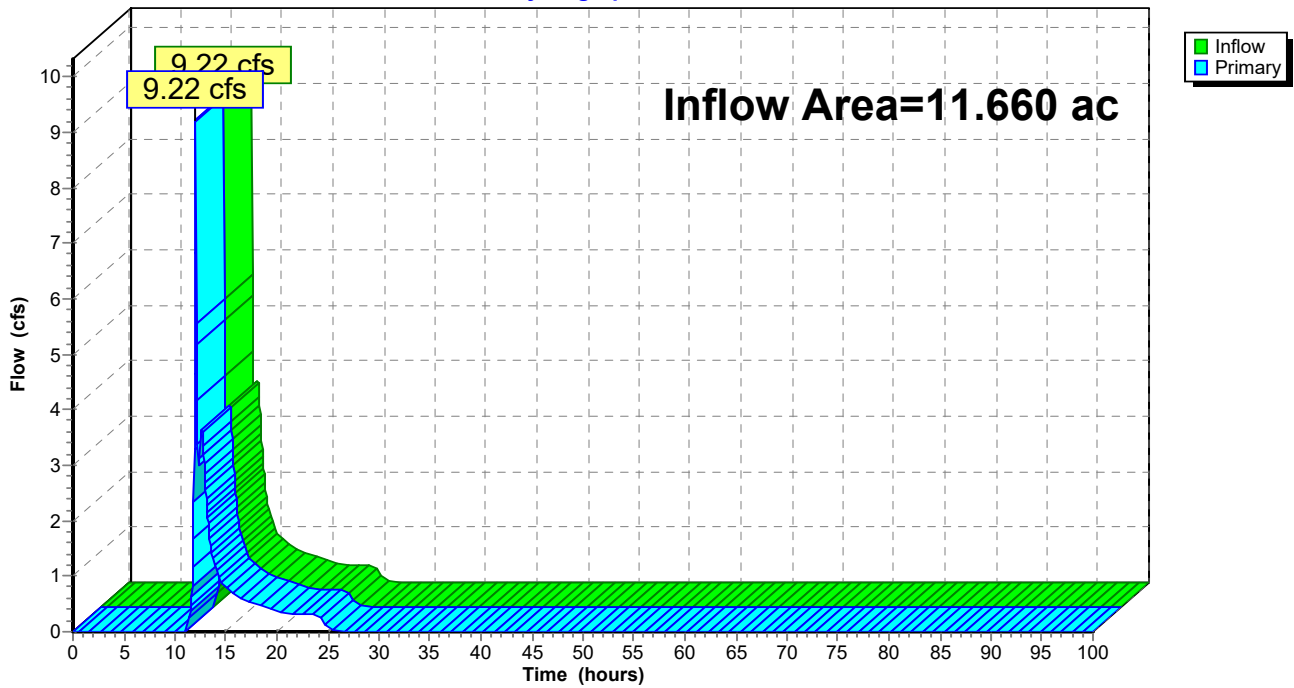
### Summary for Link AP3: Analysis Point 3

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 1.00" for 25-yr event  
Inflow = 9.22 cfs @ 12.04 hrs, Volume= 0.971 af  
Primary = 9.22 cfs @ 12.04 hrs, Volume= 0.971 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3

Hydrograph





Hydrograph for Link AP3: Analysis Point 3

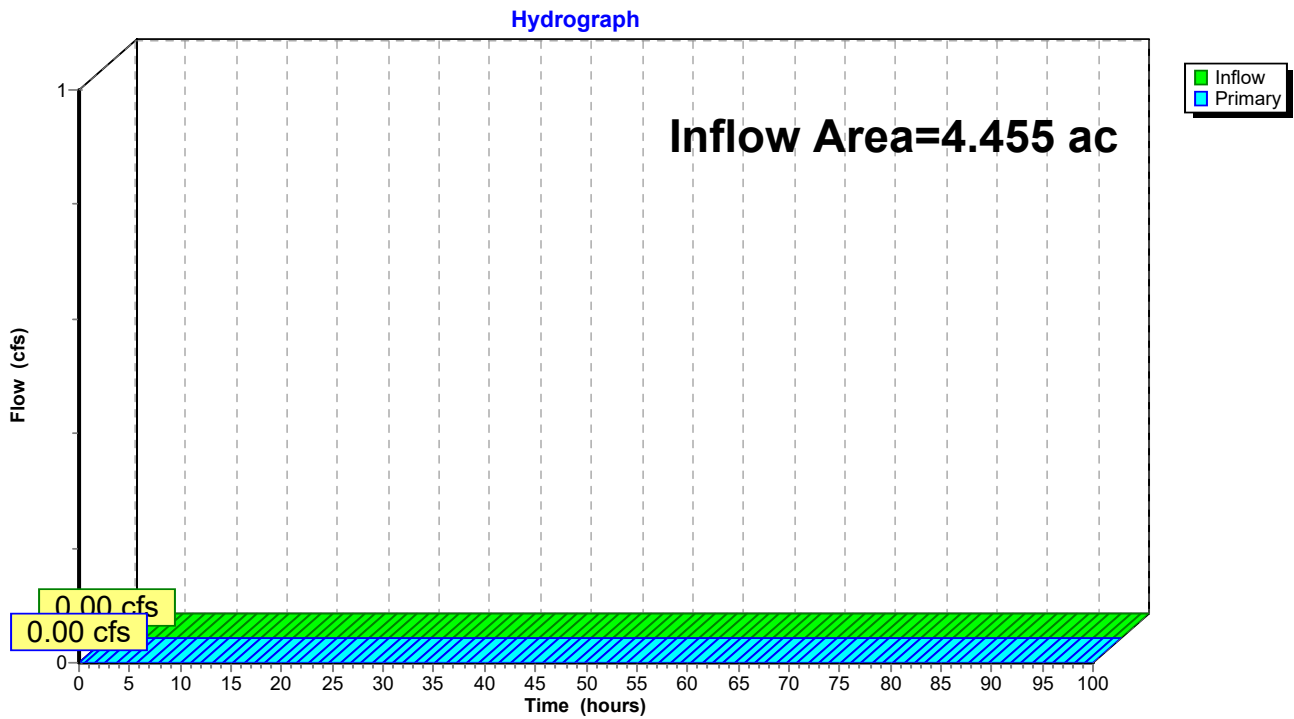
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 6.83         | 0.00             | 6.83          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 2.55         | 0.00             | 2.55          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 1.14         | 0.00             | 1.14          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.80         | 0.00             | 0.80          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.65         | 0.00             | 0.65          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.54         | 0.00             | 0.54          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.49         | 0.00             | 0.49          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.43         | 0.00             | 0.43          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.38         | 0.00             | 0.38          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.34         | 0.00             | 0.34          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.32         | 0.00             | 0.32          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.31         | 0.00             | 0.31          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.30         | 0.00             | 0.30          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.10         | 0.00             | 0.10          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.02         | 0.00             | 0.02          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.01         | 0.00             | 0.01          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.00" for 25-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

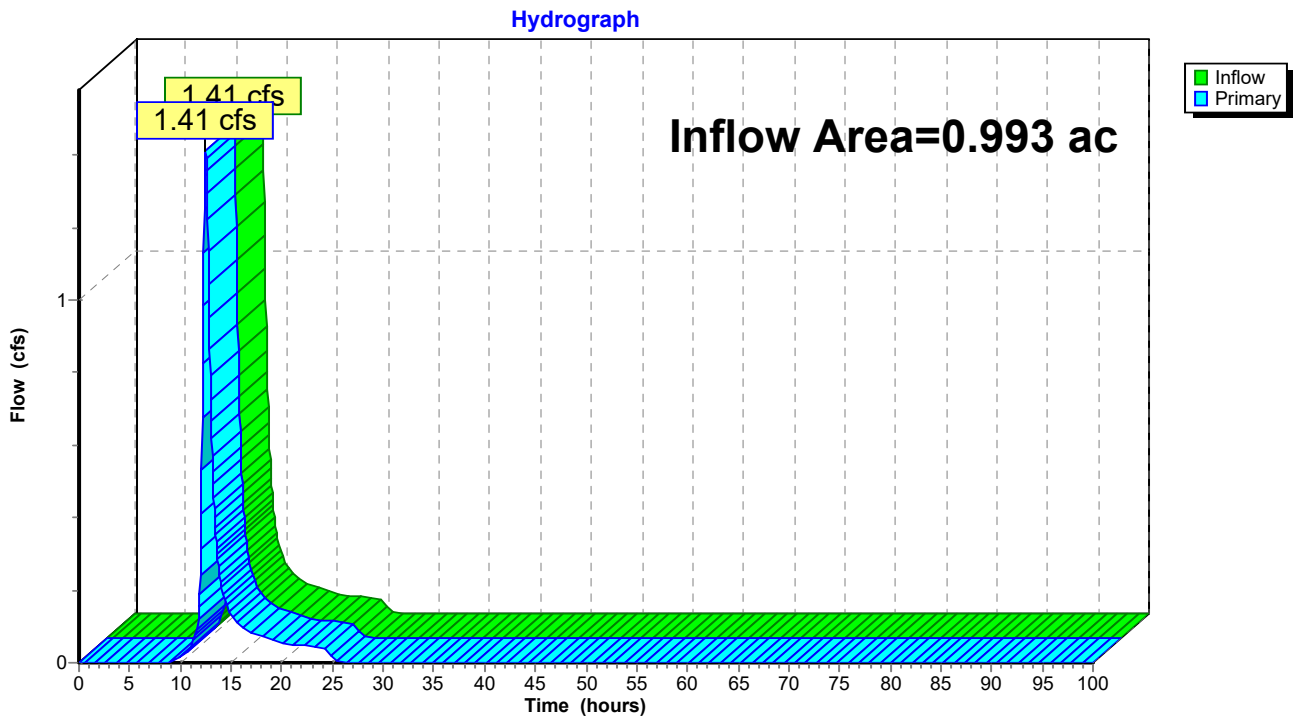
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP5: Analysis Point 5

Inflow Area = 0.993 ac, 0.00% Impervious, Inflow Depth = 2.34" for 25-yr event  
Inflow = 1.41 cfs @ 12.50 hrs, Volume= 0.194 af  
Primary = 1.41 cfs @ 12.50 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5



**Hydrograph for Link AP5: Analysis Point 5**

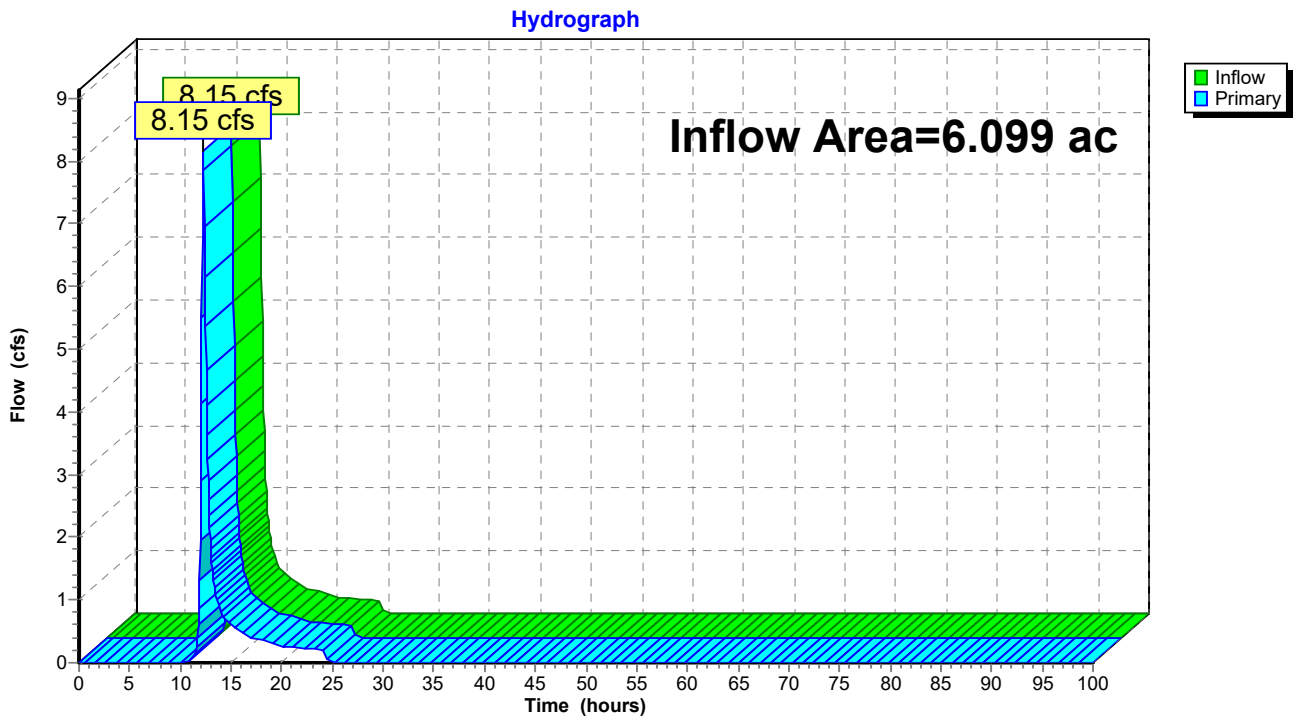
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.01         | 0.00             | 0.01          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.04         | 0.00             | 0.04          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.31</b>  | 0.00             | <b>0.31</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.72</b>  | 0.00             | <b>0.72</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.22         | 0.00             | 0.22          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.13         | 0.00             | 0.13          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.10         | 0.00             | 0.10          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.08         | 0.00             | 0.08          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.07         | 0.00             | 0.07          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.06         | 0.00             | 0.06          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.06         | 0.00             | 0.06          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.05         | 0.00             | 0.05          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.05         | 0.00             | 0.05          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.04         | 0.00             | 0.04          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.04         | 0.00             | 0.04          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP6: Analysis Point 6

Inflow Area = 6.099 ac, 0.00% Impervious, Inflow Depth = 1.64" for 25-yr event  
Inflow = 8.15 cfs @ 12.27 hrs, Volume= 0.836 af  
Primary = 8.15 cfs @ 12.27 hrs, Volume= 0.836 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.04         | 0.00             | 0.04          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>2.90</b>  | 0.00             | <b>2.90</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>1.81</b>  | 0.00             | <b>1.81</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.81         | 0.00             | 0.81          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.59         | 0.00             | 0.59          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.48         | 0.00             | 0.48          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.40         | 0.00             | 0.40          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.36         | 0.00             | 0.36          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.31         | 0.00             | 0.31          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.27         | 0.00             | 0.27          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.24         | 0.00             | 0.24          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.24         | 0.00             | 0.24          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.23         | 0.00             | 0.23          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.22         | 0.00             | 0.22          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment S4a: Subcatchment 4a** Runoff Area=9.901 ac 9.99% Impervious Runoff Depth=1.50"  
Flow Length=937' Tc=37.6 min CN=53 Runoff=9.25 cfs 1.234 af

**Subcatchment S4b: Subcatchment 4b** Runoff Area=1.759 ac 2.39% Impervious Runoff Depth=4.86"  
Flow Length=440' Tc=10.5 min CN=88 Runoff=12.05 cfs 0.712 af

**Subcatchment S5: Subcatchment 5** Runoff Area=4.455 ac 0.00% Impervious Runoff Depth=1.99"  
Flow Length=712' Tc=22.0 min CN=59 Runoff=8.77 cfs 0.740 af

**Subcatchment S6: Subcatchment 6** Runoff Area=0.993 ac 0.00% Impervious Runoff Depth=3.79"  
Flow Length=664' Tc=50.0 min CN=78 Runoff=2.30 cfs 0.314 af

**Subcatchment S7: Subcatchment 7** Runoff Area=6.099 ac 0.00% Impervious Runoff Depth=2.90"  
Flow Length=900' Tc=30.6 min CN=69 Runoff=14.93 cfs 1.475 af

**Pond 3ST: Existing Sediment Trap** Peak Elev=337.99' Storage=0.260 af Inflow=9.25 cfs 1.234 af  
Outflow=8.92 cfs 1.224 af

**Pond 4ST: Existing Sediment Trap** Peak Elev=336.36' Storage=0.087 af Inflow=12.10 cfs 1.936 af  
Outflow=12.22 cfs 1.891 af

**Pond 5ST: Existing Sediment Trap** Peak Elev=329.47' Storage=0.072 af Inflow=8.77 cfs 0.740 af  
Discarded=6.84 cfs 0.740 af Primary=0.00 cfs 0.000 af Outflow=6.84 cfs 0.740 af

**Link AP3: Analysis Point 3** Inflow=12.22 cfs 1.891 af  
Primary=12.22 cfs 1.891 af

**Link AP4: Analysis Point 4** Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP5: Analysis Point 5** Inflow=2.30 cfs 0.314 af  
Primary=2.30 cfs 0.314 af

**Link AP6: Analysis Point 6** Inflow=14.93 cfs 1.475 af  
Primary=14.93 cfs 1.475 af

**Total Runoff Area = 23.207 ac Runoff Volume = 4.475 af Average Runoff Depth = 2.31"**  
**95.56% Pervious = 22.176 ac 4.44% Impervious = 1.031 ac**



**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 9.25 cfs @ 12.39 hrs, Volume= 1.234 af, Depth= 1.50"

Routed to Pond 3ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.105     | 98 | Roofs, HSG A                  |
| 0.351     | 98 | Paved parking, HSG A          |
| 0.470     | 98 | Paved roads, HSG A            |
| 4.623     | 30 | Woods, Good, HSG A            |
| 0.565     | 77 | Woods, Good, HSG D            |
| 0.682     | 30 | Meadow, non-grazed, HSG A     |
| 1.306     | 78 | Meadow, non-grazed, HSG D     |
| 0.124     | 77 | Fallow, bare soil, HSG A      |
| 0.900     | 94 | Fallow, bare soil, HSG D      |
| 0.519     | 39 | >75% Grass cover, Good, HSG A |
| 0.193     | 30 | Woods, Good, HSG A            |
| 0.063     | 98 | Water Surface, HSG A          |
| 9.901     | 53 | Weighted Average              |
| 8.912     |    | 90.01% Pervious Area          |
| 0.989     |    | 9.99% Impervious Area         |

**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

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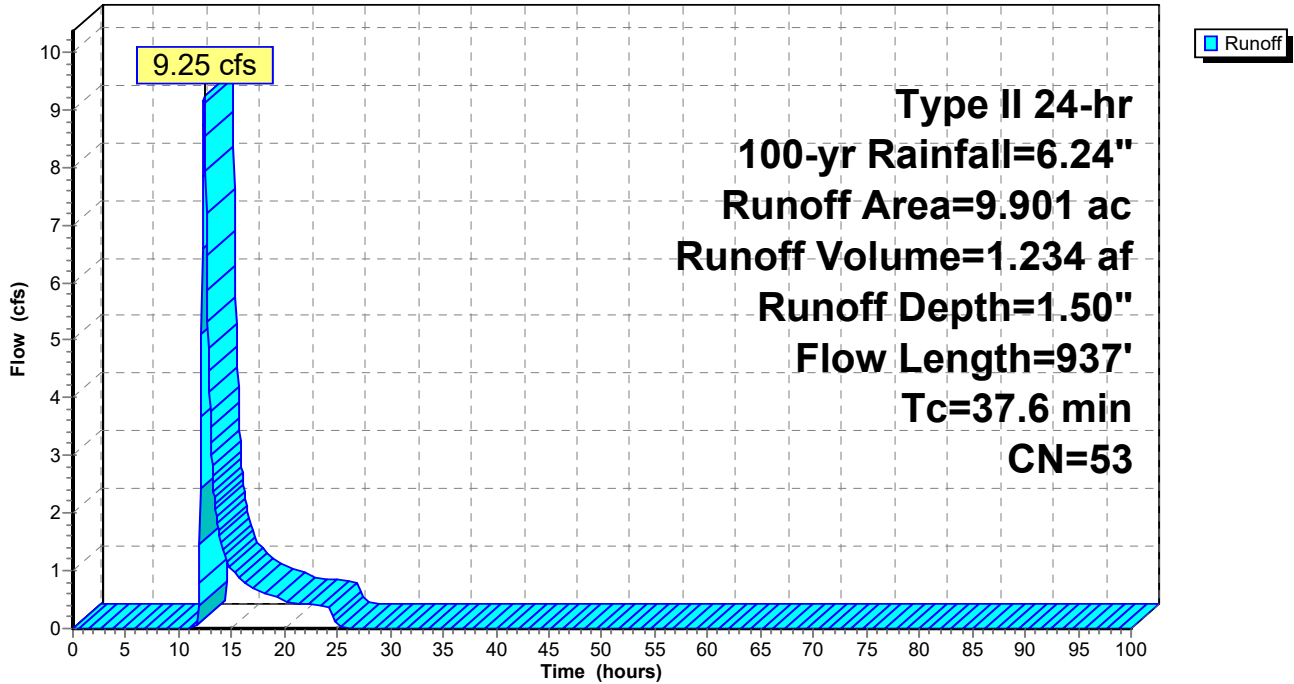
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                    |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"         |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps                |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 2.7         | 71               | 0.0039           | 0.44                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.9         | 132              | 0.0032           | 0.57                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 0.2         | 33               | 0.1262           | 2.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.5         | 38               | 0.0271           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 37.6        | 937              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph



**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 1.50               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 1.50               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 1.50               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 1.50               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 1.50               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 1.50               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 1.50               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 1.50               | 0.00            |
| 8.00            | 0.75                | 0.00               | 0.00            | 61.00           | 6.24                | 1.50               | 0.00            |
| 9.00            | 0.92                | 0.00               | 0.00            | 62.00           | 6.24                | 1.50               | 0.00            |
| 10.00           | 1.13                | 0.00               | 0.00            | 63.00           | 6.24                | 1.50               | 0.00            |
| 11.00           | 1.47                | 0.00               | 0.00            | 64.00           | 6.24                | 1.50               | 0.00            |
| 12.00           | 4.14                | 0.50               | <b>1.45</b>     | 65.00           | 6.24                | 1.50               | 0.00            |
| 13.00           | 4.82                | 0.78               | <b>3.49</b>     | 66.00           | 6.24                | 1.50               | 0.00            |
| 14.00           | 5.12                | 0.92               | 1.44            | 67.00           | 6.24                | 1.50               | 0.00            |
| 15.00           | 5.33                | 1.02               | 1.03            | 68.00           | 6.24                | 1.50               | 0.00            |
| 16.00           | 5.49                | 1.10               | 0.84            | 69.00           | 6.24                | 1.50               | 0.00            |
| 17.00           | 5.63                | 1.17               | 0.70            | 70.00           | 6.24                | 1.50               | 0.00            |
| 18.00           | 5.75                | 1.23               | 0.63            | 71.00           | 6.24                | 1.50               | 0.00            |
| 19.00           | 5.85                | 1.28               | 0.56            | 72.00           | 6.24                | 1.50               | 0.00            |
| 20.00           | 5.94                | 1.33               | 0.48            | 73.00           | 6.24                | 1.50               | 0.00            |
| 21.00           | 6.02                | 1.38               | 0.43            | 74.00           | 6.24                | 1.50               | 0.00            |
| 22.00           | 6.10                | 1.42               | 0.42            | 75.00           | 6.24                | 1.50               | 0.00            |
| 23.00           | 6.17                | 1.46               | 0.40            | 76.00           | 6.24                | 1.50               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>1.50</b>        | 0.39            | 77.00           | 6.24                | 1.50               | 0.00            |
| 25.00           | 6.24                | 1.50               | 0.03            | 78.00           | 6.24                | 1.50               | 0.00            |
| 26.00           | 6.24                | 1.50               | 0.00            | 79.00           | 6.24                | 1.50               | 0.00            |
| 27.00           | 6.24                | 1.50               | 0.00            | 80.00           | 6.24                | 1.50               | 0.00            |
| 28.00           | 6.24                | 1.50               | 0.00            | 81.00           | 6.24                | 1.50               | 0.00            |
| 29.00           | 6.24                | 1.50               | 0.00            | 82.00           | 6.24                | 1.50               | 0.00            |
| 30.00           | 6.24                | 1.50               | 0.00            | 83.00           | 6.24                | 1.50               | 0.00            |
| 31.00           | 6.24                | 1.50               | 0.00            | 84.00           | 6.24                | 1.50               | 0.00            |
| 32.00           | 6.24                | 1.50               | 0.00            | 85.00           | 6.24                | 1.50               | 0.00            |
| 33.00           | 6.24                | 1.50               | 0.00            | 86.00           | 6.24                | 1.50               | 0.00            |
| 34.00           | 6.24                | 1.50               | 0.00            | 87.00           | 6.24                | 1.50               | 0.00            |
| 35.00           | 6.24                | 1.50               | 0.00            | 88.00           | 6.24                | 1.50               | 0.00            |
| 36.00           | 6.24                | 1.50               | 0.00            | 89.00           | 6.24                | 1.50               | 0.00            |
| 37.00           | 6.24                | 1.50               | 0.00            | 90.00           | 6.24                | 1.50               | 0.00            |
| 38.00           | 6.24                | 1.50               | 0.00            | 91.00           | 6.24                | 1.50               | 0.00            |
| 39.00           | 6.24                | 1.50               | 0.00            | 92.00           | 6.24                | 1.50               | 0.00            |
| 40.00           | 6.24                | 1.50               | 0.00            | 93.00           | 6.24                | 1.50               | 0.00            |
| 41.00           | 6.24                | 1.50               | 0.00            | 94.00           | 6.24                | 1.50               | 0.00            |
| 42.00           | 6.24                | 1.50               | 0.00            | 95.00           | 6.24                | 1.50               | 0.00            |
| 43.00           | 6.24                | 1.50               | 0.00            | 96.00           | 6.24                | 1.50               | 0.00            |
| 44.00           | 6.24                | 1.50               | 0.00            | 97.00           | 6.24                | 1.50               | 0.00            |
| 45.00           | 6.24                | 1.50               | 0.00            | 98.00           | 6.24                | 1.50               | 0.00            |
| 46.00           | 6.24                | 1.50               | 0.00            | 99.00           | 6.24                | 1.50               | 0.00            |
| 47.00           | 6.24                | 1.50               | 0.00            | 100.00          | 6.24                | 1.50               | 0.00            |
| 48.00           | 6.24                | 1.50               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 1.50               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 1.50               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 1.50               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 1.50               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 12.05 cfs @ 12.01 hrs, Volume= 0.712 af, Depth= 4.86"

Routed to Pond 4ST : Existing Sediment Trap

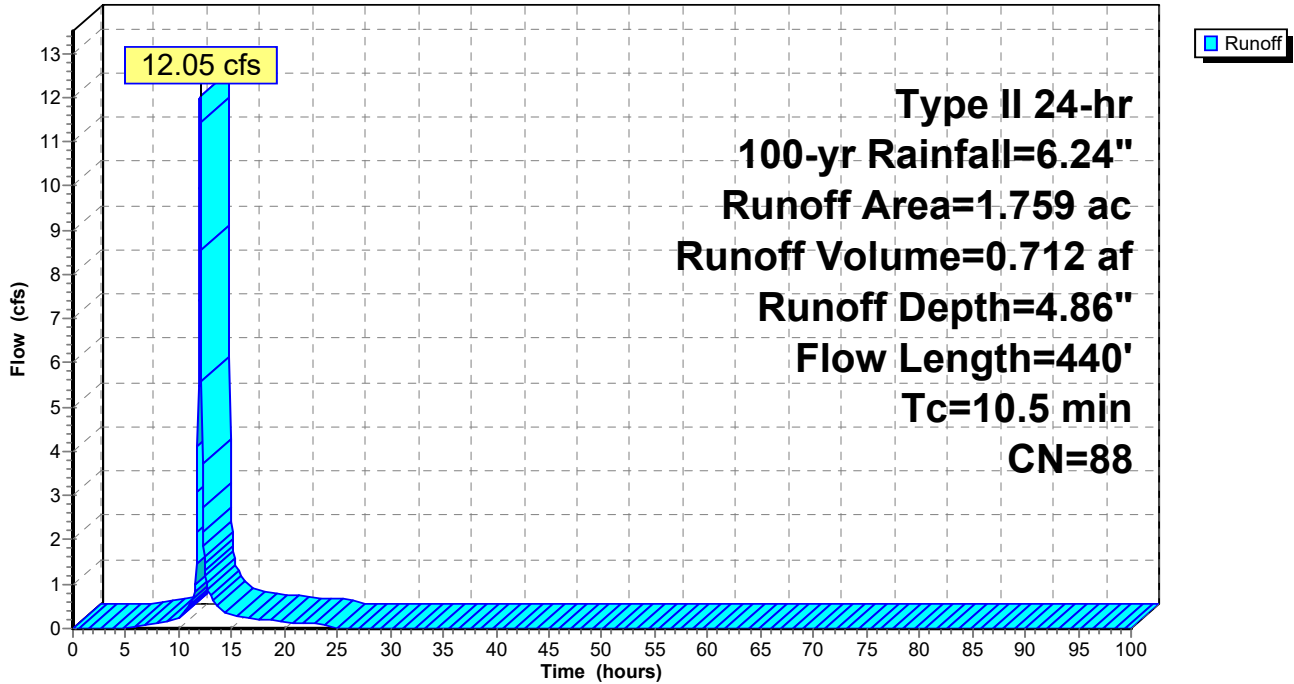
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.106     | 77 | Woods, Good, HSG D                   |
| 0.399     | 78 | Meadow, non-grazed, HSG D            |
| 0.090     | 77 | Fallow, bare soil, HSG A             |
| 0.990     | 94 | Fallow, bare soil, HSG D             |
| 0.132     | 89 | Row crops, straight row, Good, HSG D |
| 0.042     | 98 | Water Surface, HSG D                 |
| 1.759     | 88 | Weighted Average                     |
| 1.717     |    | 97.61% Pervious Area                 |
| 0.042     |    | 2.39% Impervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.9      | 28            | 0.0880        | 0.52              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 1.7      | 31            | 0.0230        | 0.31              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 2.8      | 40            | 0.0110        | 0.24              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 4.1      | 256           | 0.0110        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.7      | 58            | 0.0174        | 1.32              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.3      | 27            | 0.0370        | 1.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 10.5     | 440           | Total         |                   |                |   |

### Subcatchment S4b: Subcatchment 4b

Hydrograph



**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 4.86               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 4.86               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 4.86               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 4.86               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 4.86               | 0.00            |
| 5.00            | 0.39                | 0.01               | 0.02            | 58.00           | 6.24                | 4.86               | 0.00            |
| 6.00            | 0.50                | 0.03               | 0.05            | 59.00           | 6.24                | 4.86               | 0.00            |
| 7.00            | 0.62                | 0.07               | 0.08            | 60.00           | 6.24                | 4.86               | 0.00            |
| 8.00            | 0.75                | 0.12               | 0.10            | 61.00           | 6.24                | 4.86               | 0.00            |
| 9.00            | 0.92                | 0.21               | 0.18            | 62.00           | 6.24                | 4.86               | 0.00            |
| 10.00           | 1.13                | 0.33               | 0.25            | 63.00           | 6.24                | 4.86               | 0.00            |
| 11.00           | 1.47                | 0.56               | 0.51            | 64.00           | 6.24                | 4.86               | 0.00            |
| 12.00           | 4.14                | 2.86               | <b>11.94</b>    | 65.00           | 6.24                | 4.86               | 0.00            |
| 13.00           | 4.82                | 3.50               | 0.73            | 66.00           | 6.24                | 4.86               | 0.00            |
| 14.00           | 5.12                | 3.78               | 0.42            | 67.00           | 6.24                | 4.86               | 0.00            |
| 15.00           | 5.33                | 3.98               | 0.33            | 68.00           | 6.24                | 4.86               | 0.00            |
| 16.00           | 5.49                | 4.14               | 0.26            | 69.00           | 6.24                | 4.86               | 0.00            |
| 17.00           | 5.63                | 4.27               | 0.22            | 70.00           | 6.24                | 4.86               | 0.00            |
| 18.00           | 5.75                | 4.38               | 0.20            | 71.00           | 6.24                | 4.86               | 0.00            |
| 19.00           | 5.85                | 4.48               | 0.17            | 72.00           | 6.24                | 4.86               | 0.00            |
| 20.00           | 5.94                | 4.57               | 0.14            | 73.00           | 6.24                | 4.86               | 0.00            |
| 21.00           | 6.02                | 4.65               | 0.13            | 74.00           | 6.24                | 4.86               | 0.00            |
| 22.00           | 6.10                | 4.72               | 0.13            | 75.00           | 6.24                | 4.86               | 0.00            |
| 23.00           | 6.17                | 4.79               | 0.12            | 76.00           | 6.24                | 4.86               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>4.86</b>        | 0.12            | 77.00           | 6.24                | 4.86               | 0.00            |
| 25.00           | 6.24                | 4.86               | 0.00            | 78.00           | 6.24                | 4.86               | 0.00            |
| 26.00           | 6.24                | 4.86               | 0.00            | 79.00           | 6.24                | 4.86               | 0.00            |
| 27.00           | 6.24                | 4.86               | 0.00            | 80.00           | 6.24                | 4.86               | 0.00            |
| 28.00           | 6.24                | 4.86               | 0.00            | 81.00           | 6.24                | 4.86               | 0.00            |
| 29.00           | 6.24                | 4.86               | 0.00            | 82.00           | 6.24                | 4.86               | 0.00            |
| 30.00           | 6.24                | 4.86               | 0.00            | 83.00           | 6.24                | 4.86               | 0.00            |
| 31.00           | 6.24                | 4.86               | 0.00            | 84.00           | 6.24                | 4.86               | 0.00            |
| 32.00           | 6.24                | 4.86               | 0.00            | 85.00           | 6.24                | 4.86               | 0.00            |
| 33.00           | 6.24                | 4.86               | 0.00            | 86.00           | 6.24                | 4.86               | 0.00            |
| 34.00           | 6.24                | 4.86               | 0.00            | 87.00           | 6.24                | 4.86               | 0.00            |
| 35.00           | 6.24                | 4.86               | 0.00            | 88.00           | 6.24                | 4.86               | 0.00            |
| 36.00           | 6.24                | 4.86               | 0.00            | 89.00           | 6.24                | 4.86               | 0.00            |
| 37.00           | 6.24                | 4.86               | 0.00            | 90.00           | 6.24                | 4.86               | 0.00            |
| 38.00           | 6.24                | 4.86               | 0.00            | 91.00           | 6.24                | 4.86               | 0.00            |
| 39.00           | 6.24                | 4.86               | 0.00            | 92.00           | 6.24                | 4.86               | 0.00            |
| 40.00           | 6.24                | 4.86               | 0.00            | 93.00           | 6.24                | 4.86               | 0.00            |
| 41.00           | 6.24                | 4.86               | 0.00            | 94.00           | 6.24                | 4.86               | 0.00            |
| 42.00           | 6.24                | 4.86               | 0.00            | 95.00           | 6.24                | 4.86               | 0.00            |
| 43.00           | 6.24                | 4.86               | 0.00            | 96.00           | 6.24                | 4.86               | 0.00            |
| 44.00           | 6.24                | 4.86               | 0.00            | 97.00           | 6.24                | 4.86               | 0.00            |
| 45.00           | 6.24                | 4.86               | 0.00            | 98.00           | 6.24                | 4.86               | 0.00            |
| 46.00           | 6.24                | 4.86               | 0.00            | 99.00           | 6.24                | 4.86               | 0.00            |
| 47.00           | 6.24                | 4.86               | 0.00            | 100.00          | 6.24                | 4.86               | 0.00            |
| 48.00           | 6.24                | 4.86               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 4.86               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 4.86               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 4.86               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 4.86               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S5: Subcatchment 5**

Runoff = 8.77 cfs @ 12.17 hrs, Volume= 0.740 af, Depth= 1.99"  
 Routed to Pond 5ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

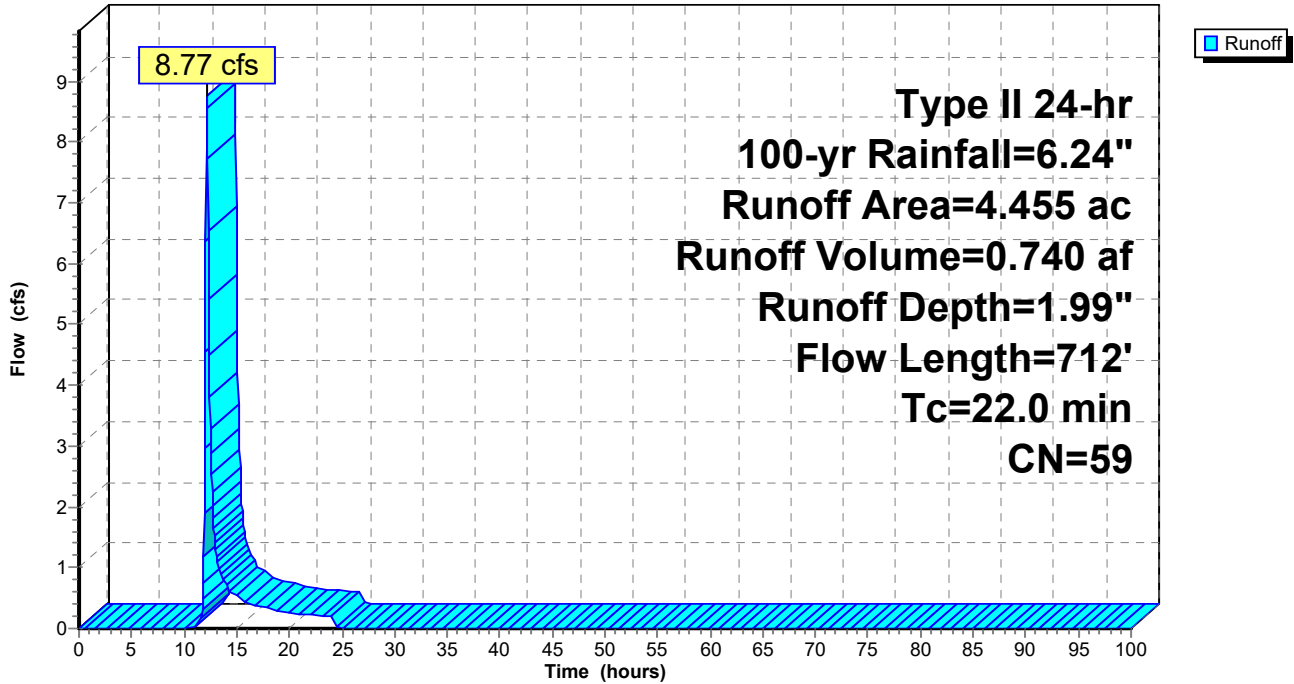
| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.583     | 30 | Woods, Good, HSG A                   |
| 0.823     | 30 | Meadow, non-grazed, HSG A            |
| 1.339     | 77 | Fallow, bare soil, HSG A             |
| 0.095     | 94 | Fallow, bare soil, HSG D             |
| 1.532     | 67 | Row crops, straight row, Good, HSG A |
| 0.083     | 89 | Row crops, straight row, Good, HSG D |
| 4.455     | 59 | Weighted Average                     |
| 4.455     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.1     | 44            | 0.0120        | 0.07              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59"                    |
| 3.5      | 56            | 0.0117        | 0.26              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.3      | 17            | 0.0095        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.9      | 40            | 0.0113        | 0.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 3.7      | 230           | 0.0105        | 1.02              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.4      | 50            | 0.0402        | 2.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.5      | 113           | 0.0156        | 1.25              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 1.4      | 124           | 0.0230        | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 25            | 0.0940        | 3.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.1      | 13            | 0.0790        | 2.81              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 22.0     | 712           | Total         |                   |                |   |



### Subcatchment S5: Subcatchment 5

Hydrograph



**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S5: Subcatchment 5**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 1.99               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 1.99               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 1.99               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 1.99               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 1.99               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 1.99               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 1.99               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 1.99               | 0.00            |
| 8.00            | 0.75                | 0.00               | 0.00            | 61.00           | 6.24                | 1.99               | 0.00            |
| 9.00            | 0.92                | 0.00               | 0.00            | 62.00           | 6.24                | 1.99               | 0.00            |
| 10.00           | 1.13                | 0.00               | 0.00            | 63.00           | 6.24                | 1.99               | 0.00            |
| 11.00           | 1.47                | 0.00               | 0.00            | 64.00           | 6.24                | 1.99               | 0.00            |
| 12.00           | 4.14                | 0.78               | <b>4.54</b>     | 65.00           | 6.24                | 1.99               | 0.00            |
| 13.00           | 4.82                | 1.13               | <b>1.27</b>     | 66.00           | 6.24                | 1.99               | 0.00            |
| 14.00           | 5.12                | 1.30               | 0.70            | 67.00           | 6.24                | 1.99               | 0.00            |
| 15.00           | 5.33                | 1.42               | 0.53            | 68.00           | 6.24                | 1.99               | 0.00            |
| 16.00           | 5.49                | 1.52               | 0.43            | 69.00           | 6.24                | 1.99               | 0.00            |
| 17.00           | 5.63                | 1.60               | 0.37            | 70.00           | 6.24                | 1.99               | 0.00            |
| 18.00           | 5.75                | 1.68               | 0.33            | 71.00           | 6.24                | 1.99               | 0.00            |
| 19.00           | 5.85                | 1.74               | 0.29            | 72.00           | 6.24                | 1.99               | 0.00            |
| 20.00           | 5.94                | 1.80               | 0.25            | 73.00           | 6.24                | 1.99               | 0.00            |
| 21.00           | 6.02                | 1.85               | 0.23            | 74.00           | 6.24                | 1.99               | 0.00            |
| 22.00           | 6.10                | 1.90               | 0.22            | 75.00           | 6.24                | 1.99               | 0.00            |
| 23.00           | 6.17                | 1.95               | 0.21            | 76.00           | 6.24                | 1.99               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>1.99</b>        | 0.20            | 77.00           | 6.24                | 1.99               | 0.00            |
| 25.00           | 6.24                | 1.99               | 0.00            | 78.00           | 6.24                | 1.99               | 0.00            |
| 26.00           | 6.24                | 1.99               | 0.00            | 79.00           | 6.24                | 1.99               | 0.00            |
| 27.00           | 6.24                | 1.99               | 0.00            | 80.00           | 6.24                | 1.99               | 0.00            |
| 28.00           | 6.24                | 1.99               | 0.00            | 81.00           | 6.24                | 1.99               | 0.00            |
| 29.00           | 6.24                | 1.99               | 0.00            | 82.00           | 6.24                | 1.99               | 0.00            |
| 30.00           | 6.24                | 1.99               | 0.00            | 83.00           | 6.24                | 1.99               | 0.00            |
| 31.00           | 6.24                | 1.99               | 0.00            | 84.00           | 6.24                | 1.99               | 0.00            |
| 32.00           | 6.24                | 1.99               | 0.00            | 85.00           | 6.24                | 1.99               | 0.00            |
| 33.00           | 6.24                | 1.99               | 0.00            | 86.00           | 6.24                | 1.99               | 0.00            |
| 34.00           | 6.24                | 1.99               | 0.00            | 87.00           | 6.24                | 1.99               | 0.00            |
| 35.00           | 6.24                | 1.99               | 0.00            | 88.00           | 6.24                | 1.99               | 0.00            |
| 36.00           | 6.24                | 1.99               | 0.00            | 89.00           | 6.24                | 1.99               | 0.00            |
| 37.00           | 6.24                | 1.99               | 0.00            | 90.00           | 6.24                | 1.99               | 0.00            |
| 38.00           | 6.24                | 1.99               | 0.00            | 91.00           | 6.24                | 1.99               | 0.00            |
| 39.00           | 6.24                | 1.99               | 0.00            | 92.00           | 6.24                | 1.99               | 0.00            |
| 40.00           | 6.24                | 1.99               | 0.00            | 93.00           | 6.24                | 1.99               | 0.00            |
| 41.00           | 6.24                | 1.99               | 0.00            | 94.00           | 6.24                | 1.99               | 0.00            |
| 42.00           | 6.24                | 1.99               | 0.00            | 95.00           | 6.24                | 1.99               | 0.00            |
| 43.00           | 6.24                | 1.99               | 0.00            | 96.00           | 6.24                | 1.99               | 0.00            |
| 44.00           | 6.24                | 1.99               | 0.00            | 97.00           | 6.24                | 1.99               | 0.00            |
| 45.00           | 6.24                | 1.99               | 0.00            | 98.00           | 6.24                | 1.99               | 0.00            |
| 46.00           | 6.24                | 1.99               | 0.00            | 99.00           | 6.24                | 1.99               | 0.00            |
| 47.00           | 6.24                | 1.99               | 0.00            | 100.00          | 6.24                | 1.99               | 0.00            |
| 48.00           | 6.24                | 1.99               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 1.99               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 1.99               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 1.99               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 1.99               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S6: Subcatchment 6**

Runoff = 2.30 cfs @ 12.49 hrs, Volume= 0.314 af, Depth= 3.79"

Routed to Link AP5 : Analysis Point 5

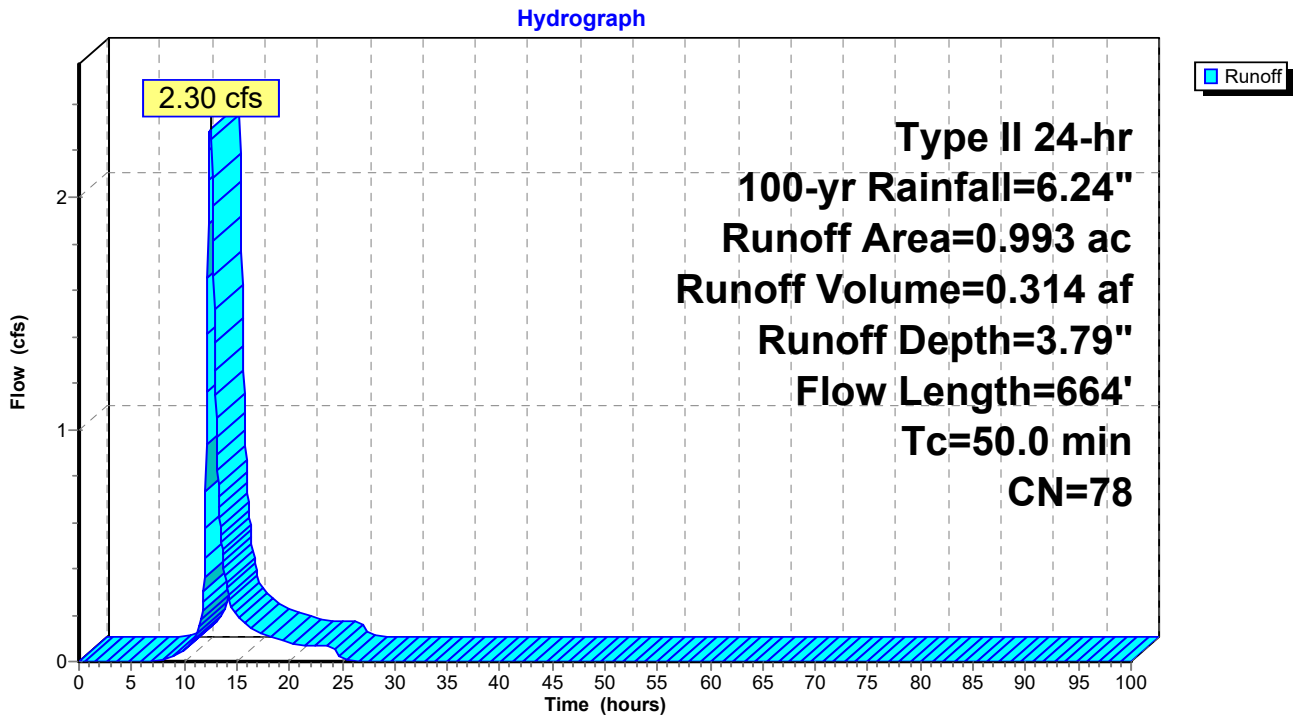
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.993     | 78 | Meadow, non-grazed, HSG D |
| 0.993     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 29.0     | 100           | 0.0013        | 0.06              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 2.4      | 10            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.6      | 15            | 0.0001        | 0.07              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.3      | 9             | 0.0057        | 0.53              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0083        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.3      | 209           | 0.0047        | 0.48              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.1      | 120           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2      | 81            | 0.0244        | 1.09              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 50.0     | 664           | Total         |                   |                |   |

### Subcatchment S6: Subcatchment 6



**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S6: Subcatchment 6**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 3.79               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 3.79               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 3.79               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 3.79               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 3.79               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 3.79               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 3.79               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 3.79               | 0.00            |
| 8.00            | 0.75                | 0.01               | 0.01            | 61.00           | 6.24                | 3.79               | 0.00            |
| 9.00            | 0.92                | 0.04               | 0.02            | 62.00           | 6.24                | 3.79               | 0.00            |
| 10.00           | 1.13                | 0.09               | 0.05            | 63.00           | 6.24                | 3.79               | 0.00            |
| 11.00           | 1.47                | 0.22               | 0.10            | 64.00           | 6.24                | 3.79               | 0.00            |
| 12.00           | 4.14                | 2.00               | <b>0.57</b>     | 65.00           | 6.24                | 3.79               | 0.00            |
| 13.00           | 4.82                | 2.56               | <b>1.15</b>     | 66.00           | 6.24                | 3.79               | 0.00            |
| 14.00           | 5.12                | 2.81               | 0.33            | 67.00           | 6.24                | 3.79               | 0.00            |
| 15.00           | 5.33                | 2.99               | 0.20            | 68.00           | 6.24                | 3.79               | 0.00            |
| 16.00           | 5.49                | 3.13               | 0.15            | 69.00           | 6.24                | 3.79               | 0.00            |
| 17.00           | 5.63                | 3.25               | 0.12            | 70.00           | 6.24                | 3.79               | 0.00            |
| 18.00           | 5.75                | 3.36               | 0.11            | 71.00           | 6.24                | 3.79               | 0.00            |
| 19.00           | 5.85                | 3.45               | 0.10            | 72.00           | 6.24                | 3.79               | 0.00            |
| 20.00           | 5.94                | 3.53               | 0.08            | 73.00           | 6.24                | 3.79               | 0.00            |
| 21.00           | 6.02                | 3.60               | 0.07            | 74.00           | 6.24                | 3.79               | 0.00            |
| 22.00           | 6.10                | 3.66               | 0.07            | 75.00           | 6.24                | 3.79               | 0.00            |
| 23.00           | 6.17                | 3.73               | 0.07            | 76.00           | 6.24                | 3.79               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>3.79</b>        | 0.06            | 77.00           | 6.24                | 3.79               | 0.00            |
| 25.00           | 6.24                | 3.79               | 0.01            | 78.00           | 6.24                | 3.79               | 0.00            |
| 26.00           | 6.24                | 3.79               | 0.00            | 79.00           | 6.24                | 3.79               | 0.00            |
| 27.00           | 6.24                | 3.79               | 0.00            | 80.00           | 6.24                | 3.79               | 0.00            |
| 28.00           | 6.24                | 3.79               | 0.00            | 81.00           | 6.24                | 3.79               | 0.00            |
| 29.00           | 6.24                | 3.79               | 0.00            | 82.00           | 6.24                | 3.79               | 0.00            |
| 30.00           | 6.24                | 3.79               | 0.00            | 83.00           | 6.24                | 3.79               | 0.00            |
| 31.00           | 6.24                | 3.79               | 0.00            | 84.00           | 6.24                | 3.79               | 0.00            |
| 32.00           | 6.24                | 3.79               | 0.00            | 85.00           | 6.24                | 3.79               | 0.00            |
| 33.00           | 6.24                | 3.79               | 0.00            | 86.00           | 6.24                | 3.79               | 0.00            |
| 34.00           | 6.24                | 3.79               | 0.00            | 87.00           | 6.24                | 3.79               | 0.00            |
| 35.00           | 6.24                | 3.79               | 0.00            | 88.00           | 6.24                | 3.79               | 0.00            |
| 36.00           | 6.24                | 3.79               | 0.00            | 89.00           | 6.24                | 3.79               | 0.00            |
| 37.00           | 6.24                | 3.79               | 0.00            | 90.00           | 6.24                | 3.79               | 0.00            |
| 38.00           | 6.24                | 3.79               | 0.00            | 91.00           | 6.24                | 3.79               | 0.00            |
| 39.00           | 6.24                | 3.79               | 0.00            | 92.00           | 6.24                | 3.79               | 0.00            |
| 40.00           | 6.24                | 3.79               | 0.00            | 93.00           | 6.24                | 3.79               | 0.00            |
| 41.00           | 6.24                | 3.79               | 0.00            | 94.00           | 6.24                | 3.79               | 0.00            |
| 42.00           | 6.24                | 3.79               | 0.00            | 95.00           | 6.24                | 3.79               | 0.00            |
| 43.00           | 6.24                | 3.79               | 0.00            | 96.00           | 6.24                | 3.79               | 0.00            |
| 44.00           | 6.24                | 3.79               | 0.00            | 97.00           | 6.24                | 3.79               | 0.00            |
| 45.00           | 6.24                | 3.79               | 0.00            | 98.00           | 6.24                | 3.79               | 0.00            |
| 46.00           | 6.24                | 3.79               | 0.00            | 99.00           | 6.24                | 3.79               | 0.00            |
| 47.00           | 6.24                | 3.79               | 0.00            | 100.00          | 6.24                | 3.79               | 0.00            |
| 48.00           | 6.24                | 3.79               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 3.79               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 3.79               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 3.79               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 3.79               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S7: Subcatchment 7**

Runoff = 14.93 cfs @ 12.26 hrs, Volume= 1.475 af, Depth= 2.90"

Routed to Link AP6 : Analysis Point 6

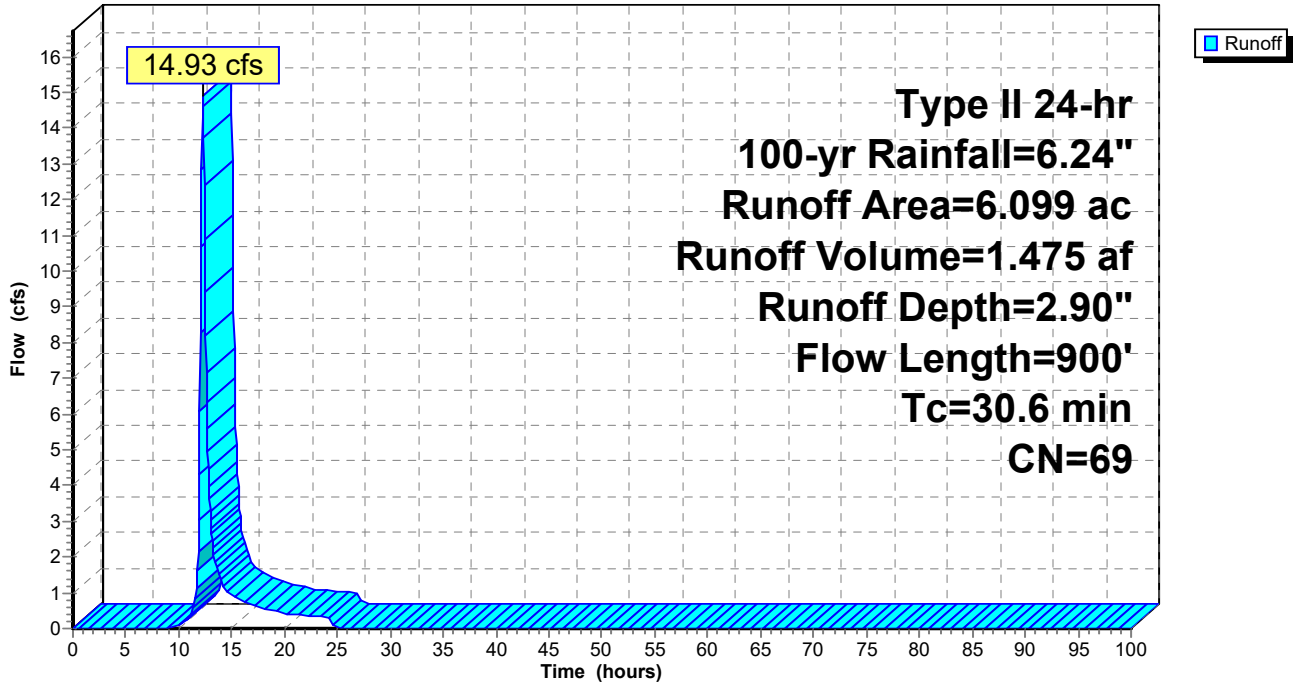
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                          |
|-----------|----|--------------------------------------|
| 0.054     | 77 | Woods, Good, HSG D                   |
| 1.251     | 30 | Meadow, non-grazed, HSG A            |
| 0.578     | 78 | Meadow, non-grazed, HSG D            |
| 0.291     | 77 | Fallow, bare soil, HSG A             |
| 0.576     | 94 | Fallow, bare soil, HSG D             |
| 1.716     | 67 | Row crops, straight row, Good, HSG A |
| 1.633     | 89 | Row crops, straight row, Good, HSG D |
| 6.099     | 69 | Weighted Average                     |
| 6.099     |    | 100.00% Pervious Area                |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 13.2     | 100           | 0.0158        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Cultivated: Residue>20% n= 0.170 P2= 2.59"          |
| 4.9      | 348           | 0.0170        | 1.17              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 1.3      | 83            | 0.0137        | 1.05              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 2.5      | 51            | 0.0012        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 1.6      | 56            | 0.0044        | 0.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Cultivated Straight Rows Kv= 9.0 fps |
| 0.9      | 24            | 0.0021        | 0.46              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps  |
| 6.2      | 238           | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps      |
| 30.6     | 900           | Total         |                   |                |  |

### Subcatchment S7: Subcatchment 7

Hydrograph



**1096 Existing Stormwater Conditions\_Final D Soils Gr Type II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 2.90               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 2.90               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 2.90               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 2.90               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 2.90               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 2.90               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 2.90               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 2.90               | 0.00            |
| 8.00            | 0.75                | 0.00               | 0.00            | 61.00           | 6.24                | 2.90               | 0.00            |
| 9.00            | 0.92                | 0.00               | 0.00            | 62.00           | 6.24                | 2.90               | 0.00            |
| 10.00           | 1.13                | 0.01               | 0.07            | 63.00           | 6.24                | 2.90               | 0.00            |
| 11.00           | 1.47                | 0.06               | 0.32            | 64.00           | 6.24                | 2.90               | 0.00            |
| 12.00           | 4.14                | 1.36               | <b>6.07</b>     | 65.00           | 6.24                | 2.90               | 0.00            |
| 13.00           | 4.82                | 1.83               | <b>3.04</b>     | 66.00           | 6.24                | 2.90               | 0.00            |
| 14.00           | 5.12                | 2.04               | 1.31            | 67.00           | 6.24                | 2.90               | 0.00            |
| 15.00           | 5.33                | 2.20               | 0.95            | 68.00           | 6.24                | 2.90               | 0.00            |
| 16.00           | 5.49                | 2.32               | 0.76            | 69.00           | 6.24                | 2.90               | 0.00            |
| 17.00           | 5.63                | 2.42               | 0.63            | 70.00           | 6.24                | 2.90               | 0.00            |
| 18.00           | 5.75                | 2.52               | 0.56            | 71.00           | 6.24                | 2.90               | 0.00            |
| 19.00           | 5.85                | 2.60               | 0.49            | 72.00           | 6.24                | 2.90               | 0.00            |
| 20.00           | 5.94                | 2.67               | 0.42            | 73.00           | 6.24                | 2.90               | 0.00            |
| 21.00           | 6.02                | 2.73               | 0.38            | 74.00           | 6.24                | 2.90               | 0.00            |
| 22.00           | 6.10                | 2.79               | 0.37            | 75.00           | 6.24                | 2.90               | 0.00            |
| 23.00           | 6.17                | 2.85               | 0.35            | 76.00           | 6.24                | 2.90               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>2.90</b>        | 0.34            | 77.00           | 6.24                | 2.90               | 0.00            |
| 25.00           | 6.24                | 2.90               | 0.01            | 78.00           | 6.24                | 2.90               | 0.00            |
| 26.00           | 6.24                | 2.90               | 0.00            | 79.00           | 6.24                | 2.90               | 0.00            |
| 27.00           | 6.24                | 2.90               | 0.00            | 80.00           | 6.24                | 2.90               | 0.00            |
| 28.00           | 6.24                | 2.90               | 0.00            | 81.00           | 6.24                | 2.90               | 0.00            |
| 29.00           | 6.24                | 2.90               | 0.00            | 82.00           | 6.24                | 2.90               | 0.00            |
| 30.00           | 6.24                | 2.90               | 0.00            | 83.00           | 6.24                | 2.90               | 0.00            |
| 31.00           | 6.24                | 2.90               | 0.00            | 84.00           | 6.24                | 2.90               | 0.00            |
| 32.00           | 6.24                | 2.90               | 0.00            | 85.00           | 6.24                | 2.90               | 0.00            |
| 33.00           | 6.24                | 2.90               | 0.00            | 86.00           | 6.24                | 2.90               | 0.00            |
| 34.00           | 6.24                | 2.90               | 0.00            | 87.00           | 6.24                | 2.90               | 0.00            |
| 35.00           | 6.24                | 2.90               | 0.00            | 88.00           | 6.24                | 2.90               | 0.00            |
| 36.00           | 6.24                | 2.90               | 0.00            | 89.00           | 6.24                | 2.90               | 0.00            |
| 37.00           | 6.24                | 2.90               | 0.00            | 90.00           | 6.24                | 2.90               | 0.00            |
| 38.00           | 6.24                | 2.90               | 0.00            | 91.00           | 6.24                | 2.90               | 0.00            |
| 39.00           | 6.24                | 2.90               | 0.00            | 92.00           | 6.24                | 2.90               | 0.00            |
| 40.00           | 6.24                | 2.90               | 0.00            | 93.00           | 6.24                | 2.90               | 0.00            |
| 41.00           | 6.24                | 2.90               | 0.00            | 94.00           | 6.24                | 2.90               | 0.00            |
| 42.00           | 6.24                | 2.90               | 0.00            | 95.00           | 6.24                | 2.90               | 0.00            |
| 43.00           | 6.24                | 2.90               | 0.00            | 96.00           | 6.24                | 2.90               | 0.00            |
| 44.00           | 6.24                | 2.90               | 0.00            | 97.00           | 6.24                | 2.90               | 0.00            |
| 45.00           | 6.24                | 2.90               | 0.00            | 98.00           | 6.24                | 2.90               | 0.00            |
| 46.00           | 6.24                | 2.90               | 0.00            | 99.00           | 6.24                | 2.90               | 0.00            |
| 47.00           | 6.24                | 2.90               | 0.00            | 100.00          | 6.24                | 2.90               | 0.00            |
| 48.00           | 6.24                | 2.90               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 2.90               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 2.90               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 2.90               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 2.90               | 0.00            |                 |                     |                    |                 |



**Summary for Pond 3ST: Existing Sediment Trap**

Inflow Area = 9.901 ac, 9.99% Impervious, Inflow Depth = 1.50" for 100-yr event  
 Inflow = 9.25 cfs @ 12.39 hrs, Volume= 1.234 af  
 Outflow = 8.92 cfs @ 12.46 hrs, Volume= 1.224 af, Atten= 4%, Lag= 4.6 min  
 Primary = 8.92 cfs @ 12.46 hrs, Volume= 1.224 af  
 Routed to Pond 4ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.42' Surf.Area= 0.130 ac Storage= 0.177 af  
 Peak Elev= 337.99' @ 12.46 hrs Surf.Area= 0.162 ac Storage= 0.260 af (0.083 af above start)

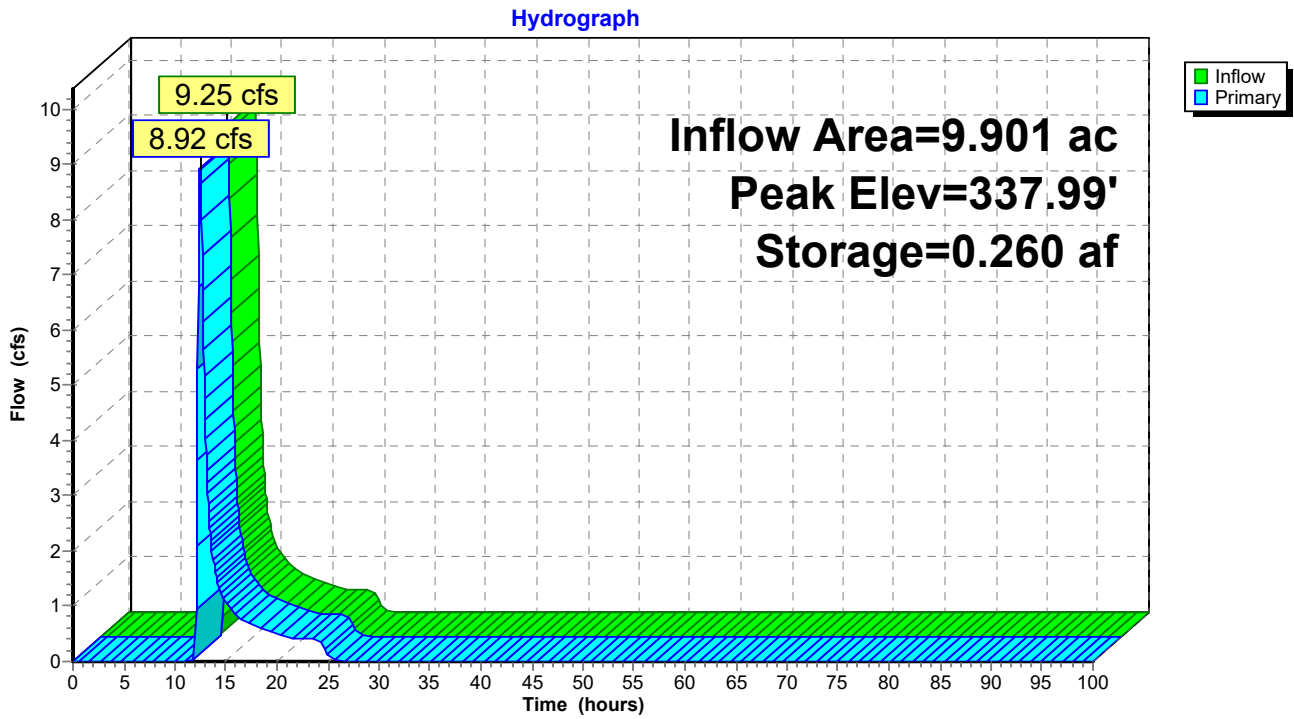
Plug-Flow detention time= 115.1 min calculated for 1.047 af (85% of inflow)  
 Center-of-Mass det. time= 12.2 min ( 918.9 - 906.7 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 335.00'              | 0.261 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 335.00              | 0.023                | 277.9            | 0.000  | 0.000                    | 0.023               |  |
| 336.00              | 0.063                | 408.6            | 0.041  | 0.041                    | 0.187               |  |
| 337.00              | 0.109                | 536.8            | 0.085  | 0.126                    | 0.409               |  |
| 338.00              | 0.163                | 586.1            | 0.135  | 0.261                    | 0.511               |  |

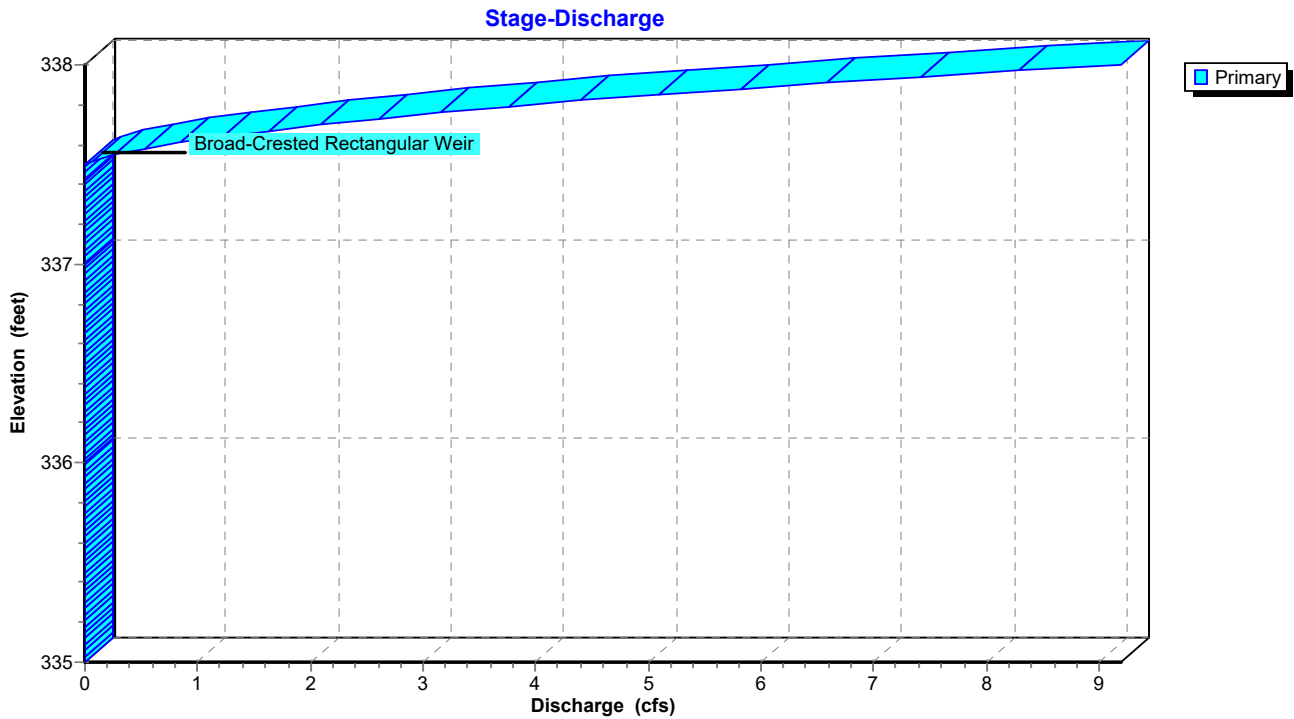
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 337.50' | <b>10.0' long x 5.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88                         |  |  |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=8.88 cfs @ 12.46 hrs HW=337.99' TW=336.26' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 8.88 cfs @ 1.81 fps)

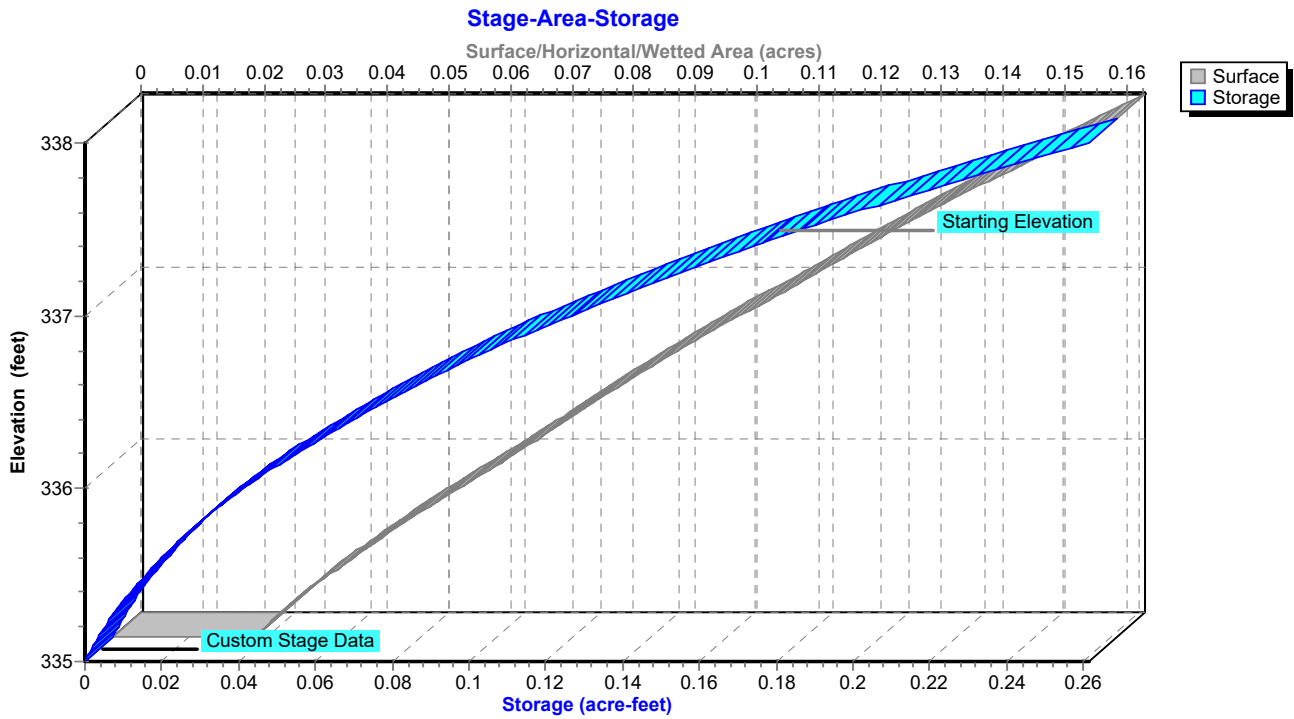
**Pond 3ST: Existing Sediment Trap**



**Pond 3ST: Existing Sediment Trap**



### Pond 3ST: Existing Sediment Trap



**Hydrograph for Pond 3ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 2.50            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 5.00            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 7.50            | 0.00            | 0.177                  | 337.42              | 0.00             |
| 10.00           | <b>0.00</b>     | <b>0.177</b>           | <b>337.42</b>       | <b>0.00</b>      |
| 12.50           | <b>8.55</b>     | <b>0.260</b>           | <b>337.99</b>       | <b>8.83</b>      |
| 15.00           | 1.03            | 0.205                  | 337.63              | 1.06             |
| 17.50           | 0.66            | 0.200                  | 337.59              | 0.67             |
| 20.00           | 0.48            | 0.198                  | 337.58              | 0.49             |
| 22.50           | 0.41            | 0.196                  | 337.57              | 0.41             |
| 25.00           | 0.03            | 0.191                  | 337.53              | 0.10             |
| 27.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 30.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 32.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 35.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 37.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 40.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 42.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 45.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 47.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 50.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 52.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 55.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 57.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 60.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 62.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 65.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 67.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 70.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 72.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 75.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 77.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 80.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 82.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 85.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 87.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 90.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 92.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 95.00           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 97.50           | 0.00            | 0.187                  | 337.50              | 0.00             |
| 100.00          | 0.00            | 0.187                  | 337.50              | 0.00             |

**Stage-Discharge for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 335.00              | 0.00             | 336.06              | 0.00             | 337.12              | 0.00             |
| 335.02              | 0.00             | 336.08              | 0.00             | 337.14              | 0.00             |
| 335.04              | 0.00             | 336.10              | 0.00             | 337.16              | 0.00             |
| 335.06              | 0.00             | 336.12              | 0.00             | 337.18              | 0.00             |
| 335.08              | 0.00             | 336.14              | 0.00             | 337.20              | 0.00             |
| 335.10              | 0.00             | 336.16              | 0.00             | 337.22              | 0.00             |
| 335.12              | 0.00             | 336.18              | 0.00             | 337.24              | 0.00             |
| 335.14              | 0.00             | 336.20              | 0.00             | 337.26              | 0.00             |
| 335.16              | 0.00             | 336.22              | 0.00             | 337.28              | 0.00             |
| 335.18              | 0.00             | 336.24              | 0.00             | 337.30              | 0.00             |
| 335.20              | 0.00             | 336.26              | 0.00             | 337.32              | 0.00             |
| 335.22              | 0.00             | 336.28              | 0.00             | 337.34              | 0.00             |
| 335.24              | 0.00             | 336.30              | 0.00             | 337.36              | 0.00             |
| 335.26              | 0.00             | 336.32              | 0.00             | 337.38              | 0.00             |
| 335.28              | 0.00             | 336.34              | 0.00             | 337.40              | 0.00             |
| 335.30              | 0.00             | 336.36              | 0.00             | 337.42              | 0.00             |
| 335.32              | 0.00             | 336.38              | 0.00             | 337.44              | 0.00             |
| 335.34              | 0.00             | 336.40              | 0.00             | 337.46              | 0.00             |
| 335.36              | 0.00             | 336.42              | 0.00             | 337.48              | 0.00             |
| 335.38              | 0.00             | 336.44              | 0.00             | 337.50              | 0.00             |
| 335.40              | 0.00             | 336.46              | 0.00             | 337.52              | 0.07             |
| 335.42              | 0.00             | 336.48              | 0.00             | 337.54              | 0.19             |
| 335.44              | 0.00             | 336.50              | 0.00             | 337.56              | 0.34             |
| 335.46              | 0.00             | 336.52              | 0.00             | 337.58              | 0.53             |
| 335.48              | 0.00             | 336.54              | 0.00             | 337.60              | 0.74             |
| 335.50              | 0.00             | 336.56              | 0.00             | 337.62              | 0.97             |
| 335.52              | 0.00             | 336.58              | 0.00             | 337.64              | 1.23             |
| 335.54              | 0.00             | 336.60              | 0.00             | 337.66              | 1.50             |
| 335.56              | 0.00             | 336.62              | 0.00             | 337.68              | 1.79             |
| 335.58              | 0.00             | 336.64              | 0.00             | 337.70              | 2.09             |
| 335.60              | 0.00             | 336.66              | 0.00             | 337.72              | 2.43             |
| 335.62              | 0.00             | 336.68              | 0.00             | 337.74              | 2.79             |
| 335.64              | 0.00             | 336.70              | 0.00             | 337.76              | 3.17             |
| 335.66              | 0.00             | 336.72              | 0.00             | 337.78              | 3.56             |
| 335.68              | 0.00             | 336.74              | 0.00             | 337.80              | 3.98             |
| 335.70              | 0.00             | 336.76              | 0.00             | 337.82              | 4.41             |
| 335.72              | 0.00             | 336.78              | 0.00             | 337.84              | 4.86             |
| 335.74              | 0.00             | 336.80              | 0.00             | 337.86              | 5.33             |
| 335.76              | 0.00             | 336.82              | 0.00             | 337.88              | 5.82             |
| 335.78              | 0.00             | 336.84              | 0.00             | 337.90              | 6.32             |
| 335.80              | 0.00             | 336.86              | 0.00             | 337.92              | 6.86             |
| 335.82              | 0.00             | 336.88              | 0.00             | 337.94              | 7.41             |
| 335.84              | 0.00             | 336.90              | 0.00             | 337.96              | 7.99             |
| 335.86              | 0.00             | 336.92              | 0.00             | 337.98              | 8.58             |
| 335.88              | 0.00             | 336.94              | 0.00             | 338.00              | <b>9.19</b>      |
| 335.90              | 0.00             | 336.96              | 0.00             |                     |                  |
| 335.92              | 0.00             | 336.98              | 0.00             |                     |                  |
| 335.94              | 0.00             | 337.00              | 0.00             |                     |                  |
| 335.96              | 0.00             | 337.02              | 0.00             |                     |                  |
| 335.98              | 0.00             | 337.04              | 0.00             |                     |                  |
| 336.00              | 0.00             | 337.06              | 0.00             |                     |                  |
| 336.02              | 0.00             | 337.08              | 0.00             |                     |                  |
| 336.04              | 0.00             | 337.10              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 3ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 335.00              | 0.023              | 0.000                  | 337.65              | 0.143              | 0.208                  |
| 335.05              | 0.025              | 0.001                  | 337.70              | 0.146              | 0.215                  |
| 335.10              | 0.026              | 0.002                  | 337.75              | 0.148              | 0.222                  |
| 335.15              | 0.028              | 0.004                  | 337.80              | 0.151              | 0.230                  |
| 335.20              | 0.029              | 0.005                  | 337.85              | 0.154              | 0.238                  |
| 335.25              | 0.031              | 0.007                  | 337.90              | 0.157              | 0.245                  |
| 335.30              | 0.033              | 0.008                  | 337.95              | 0.160              | 0.253                  |
| 335.35              | 0.035              | 0.010                  | 338.00              | <b>0.163</b>       | <b>0.261</b>           |
| 335.40              | 0.037              | 0.012                  |                     |                    |                        |
| 335.45              | 0.039              | 0.014                  |                     |                    |                        |
| 335.50              | 0.041              | 0.016                  |                     |                    |                        |
| 335.55              | 0.043              | 0.018                  |                     |                    |                        |
| 335.60              | 0.045              | 0.020                  |                     |                    |                        |
| 335.65              | 0.047              | 0.022                  |                     |                    |                        |
| 335.70              | 0.049              | 0.025                  |                     |                    |                        |
| 335.75              | 0.051              | 0.027                  |                     |                    |                        |
| 335.80              | 0.053              | 0.030                  |                     |                    |                        |
| 335.85              | 0.056              | 0.032                  |                     |                    |                        |
| 335.90              | 0.058              | 0.035                  |                     |                    |                        |
| 335.95              | 0.061              | 0.038                  |                     |                    |                        |
| 336.00              | 0.063              | 0.041                  |                     |                    |                        |
| 336.05              | 0.065              | 0.045                  |                     |                    |                        |
| 336.10              | 0.067              | 0.048                  |                     |                    |                        |
| 336.15              | 0.069              | 0.051                  |                     |                    |                        |
| 336.20              | 0.071              | 0.055                  |                     |                    |                        |
| 336.25              | 0.073              | 0.058                  |                     |                    |                        |
| 336.30              | 0.075              | 0.062                  |                     |                    |                        |
| 336.35              | 0.078              | 0.066                  |                     |                    |                        |
| 336.40              | 0.080              | 0.070                  |                     |                    |                        |
| 336.45              | 0.082              | 0.074                  |                     |                    |                        |
| 336.50              | 0.084              | 0.078                  |                     |                    |                        |
| 336.55              | 0.087              | 0.082                  |                     |                    |                        |
| 336.60              | 0.089              | 0.087                  |                     |                    |                        |
| 336.65              | 0.091              | 0.091                  |                     |                    |                        |
| 336.70              | 0.094              | 0.096                  |                     |                    |                        |
| 336.75              | 0.096              | 0.101                  |                     |                    |                        |
| 336.80              | 0.099              | 0.106                  |                     |                    |                        |
| 336.85              | 0.101              | 0.111                  |                     |                    |                        |
| 336.90              | 0.104              | 0.116                  |                     |                    |                        |
| 336.95              | 0.106              | 0.121                  |                     |                    |                        |
| 337.00              | 0.109              | 0.126                  |                     |                    |                        |
| 337.05              | 0.111              | 0.132                  |                     |                    |                        |
| 337.10              | 0.114              | 0.137                  |                     |                    |                        |
| 337.15              | 0.116              | 0.143                  |                     |                    |                        |
| 337.20              | 0.119              | 0.149                  |                     |                    |                        |
| 337.25              | 0.121              | 0.155                  |                     |                    |                        |
| 337.30              | 0.124              | 0.161                  |                     |                    |                        |
| 337.35              | 0.127              | 0.168                  |                     |                    |                        |
| 337.40              | 0.129              | 0.174                  |                     |                    |                        |
| 337.45              | 0.132              | 0.180                  |                     |                    |                        |
| 337.50              | 0.135              | 0.187                  |                     |                    |                        |
| 337.55              | 0.137              | 0.194                  |                     |                    |                        |
| 337.60              | 0.140              | 0.201                  |                     |                    |                        |

**Summary for Pond 4ST: Existing Sediment Trap**

[93] Warning: Storage range exceeded by 0.36'

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 1.99" for 100-yr event  
 Inflow = 12.10 cfs @ 12.02 hrs, Volume= 1.936 af  
 Outflow = 12.22 cfs @ 12.03 hrs, Volume= 1.891 af, Atten= 0%, Lag= 0.7 min  
 Primary = 12.22 cfs @ 12.03 hrs, Volume= 1.891 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 336.36' @ 12.03 hrs Surf.Area= 0.119 ac Storage= 0.087 af

Plug-Flow detention time= 29.0 min calculated for 1.890 af (98% of inflow)  
 Center-of-Mass det. time= 15.4 min ( 887.3 - 871.9 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 334.00' | 0.003 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #2     | 334.00' | 0.006 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
| #3     | 334.55' | 0.078 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |
|        |         | 0.087 af      | Total Available Storage                                    |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.002             | 58.0          | 0.000                 | 0.000                 | 0.002            |
| 334.55           | 0.008             | 171.7         | 0.003                 | 0.003                 | 0.050            |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.00           | 0.004             | 74.4          | 0.000                 | 0.000                 | 0.004            |
| 334.55           | 0.022             | 366.8         | 0.006                 | 0.006                 | 0.240            |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 334.55           | 0.022             | 366.8         | 0.000                 | 0.000                 | 0.022            |
| 335.00           | 0.042             | 462.0         | 0.014                 | 0.014                 | 0.166            |
| 336.00           | 0.089             | 513.4         | 0.064                 | 0.078                 | 0.258            |

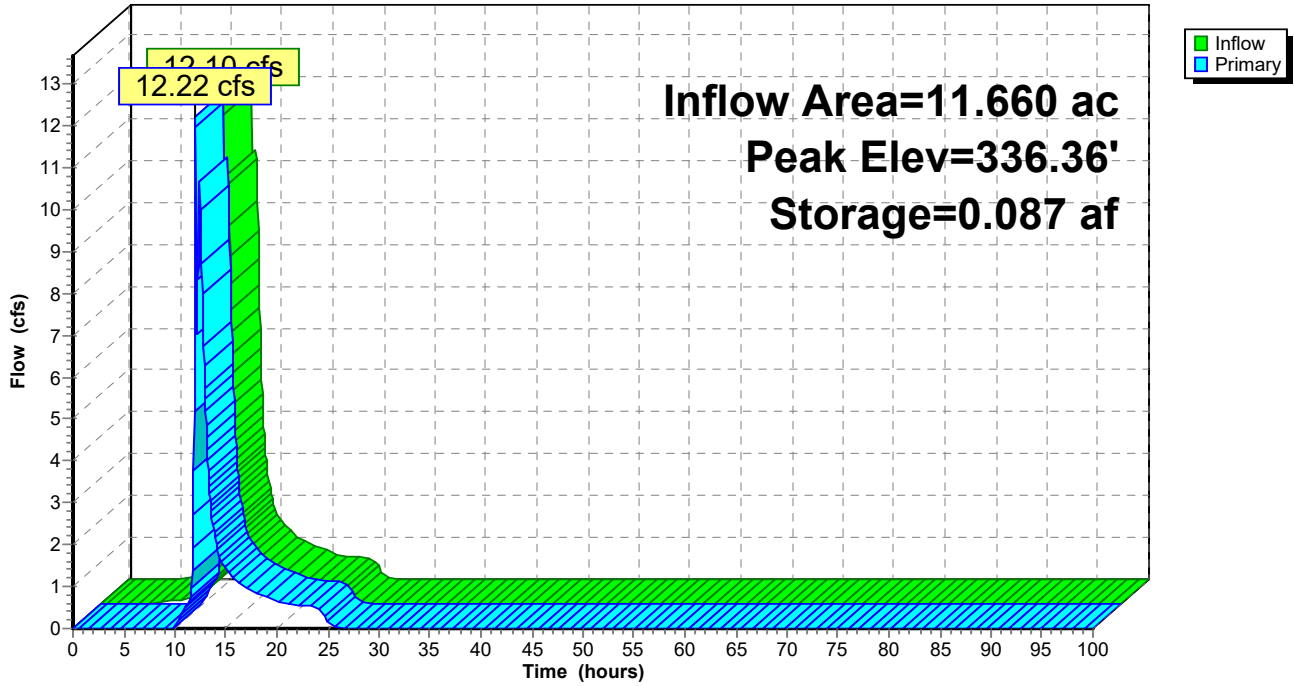
| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 335.42' | <b>5.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=11.84 cfs @ 12.03 hrs HW=336.34' TW=0.00' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir** (Weir Controls 11.84 cfs @ 2.57 fps)

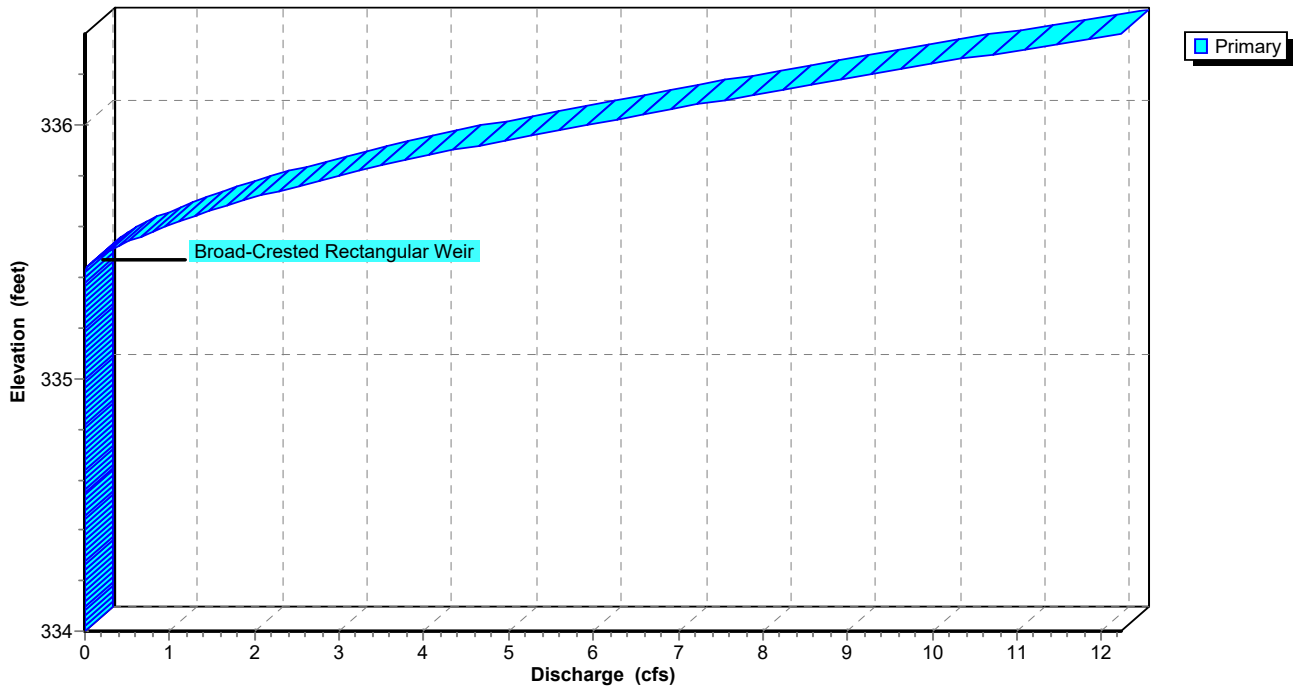
**Pond 4ST: Existing Sediment Trap**

Hydrograph



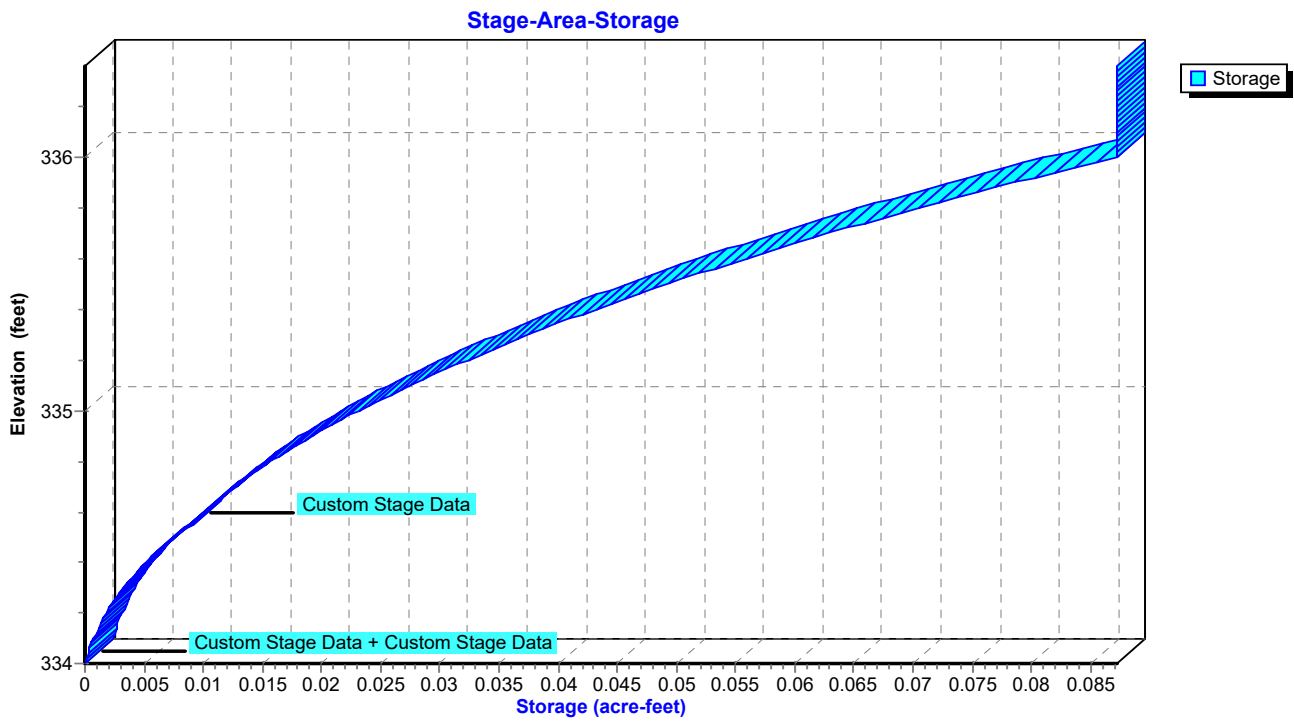
**Pond 4ST: Existing Sediment Trap**

Stage-Discharge





### Pond 4ST: Existing Sediment Trap



**Hydrograph for Pond 4ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 2.50            | 0.00            | 0.000                  | 334.00              | 0.00             |
| 5.00            | 0.02            | 0.001                  | 334.14              | 0.00             |
| 7.50            | 0.09            | 0.013                  | 334.69              | 0.00             |
| 10.00           | <b>0.25</b>     | <b>0.045</b>           | <b>335.43</b>       | <b>0.01</b>      |
| 12.50           | <b>10.13</b>    | <b>0.087</b>           | <b>336.23</b>       | <b>9.81</b>      |
| 15.00           | 1.39            | 0.060                  | 335.65              | 1.42             |
| 17.50           | 0.88            | 0.055                  | 335.59              | 0.89             |
| 20.00           | 0.64            | 0.053                  | 335.56              | 0.65             |
| 22.50           | 0.54            | 0.052                  | 335.54              | 0.54             |
| 25.00           | 0.10            | 0.048                  | 335.47              | 0.16             |
| 27.50           | 0.00            | 0.045                  | 335.42              | 0.00             |
| 30.00           | 0.00            | 0.045                  | 335.42              | 0.00             |
| 32.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 35.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 37.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 40.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 42.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 45.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 47.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 50.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 52.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 55.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 57.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 60.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 62.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 65.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 67.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 70.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 72.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 75.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 77.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 80.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 82.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 85.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 87.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 90.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 92.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 95.00           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 97.50           | 0.00            | 0.044                  | 335.42              | 0.00             |
| 100.00          | 0.00            | 0.044                  | 335.42              | 0.00             |

**Stage-Discharge for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 334.00              | 0.00             | 335.06              | 0.00             | 336.12              | 7.89             |
| 334.02              | 0.00             | 335.08              | 0.00             | 336.14              | 8.23             |
| 334.04              | 0.00             | 335.10              | 0.00             | 336.16              | 8.57             |
| 334.06              | 0.00             | 335.12              | 0.00             | 336.18              | 8.92             |
| 334.08              | 0.00             | 335.14              | 0.00             | 336.20              | 9.27             |
| 334.10              | 0.00             | 335.16              | 0.00             | 336.22              | 9.62             |
| 334.12              | 0.00             | 335.18              | 0.00             | 336.24              | 9.98             |
| 334.14              | 0.00             | 335.20              | 0.00             | 336.26              | 10.35            |
| 334.16              | 0.00             | 335.22              | 0.00             | 336.28              | 10.71            |
| 334.18              | 0.00             | 335.24              | 0.00             | 336.30              | 11.09            |
| 334.20              | 0.00             | 335.26              | 0.00             | 336.32              | 11.46            |
| 334.22              | 0.00             | 335.28              | 0.00             | 336.34              | 11.84            |
| 334.24              | 0.00             | 335.30              | 0.00             | 336.36              | <b>12.23</b>     |
| 334.26              | 0.00             | 335.32              | 0.00             |                     |                  |
| 334.28              | 0.00             | 335.34              | 0.00             |                     |                  |
| 334.30              | 0.00             | 335.36              | 0.00             |                     |                  |
| 334.32              | 0.00             | 335.38              | 0.00             |                     |                  |
| 334.34              | 0.00             | 335.40              | 0.00             |                     |                  |
| 334.36              | 0.00             | 335.42              | 0.00             |                     |                  |
| 334.38              | 0.00             | 335.44              | 0.04             |                     |                  |
| 334.40              | 0.00             | 335.46              | 0.10             |                     |                  |
| 334.42              | 0.00             | 335.48              | 0.18             |                     |                  |
| 334.44              | 0.00             | 335.50              | 0.28             |                     |                  |
| 334.46              | 0.00             | 335.52              | 0.39             |                     |                  |
| 334.48              | 0.00             | 335.54              | 0.52             |                     |                  |
| 334.50              | 0.00             | 335.56              | 0.65             |                     |                  |
| 334.52              | 0.00             | 335.58              | 0.80             |                     |                  |
| 334.54              | 0.00             | 335.60              | 0.95             |                     |                  |
| 334.56              | 0.00             | 335.62              | 1.11             |                     |                  |
| 334.58              | 0.00             | 335.64              | 1.29             |                     |                  |
| 334.60              | 0.00             | 335.66              | 1.47             |                     |                  |
| 334.62              | 0.00             | 335.68              | 1.66             |                     |                  |
| 334.64              | 0.00             | 335.70              | 1.87             |                     |                  |
| 334.66              | 0.00             | 335.72              | 2.07             |                     |                  |
| 334.68              | 0.00             | 335.74              | 2.29             |                     |                  |
| 334.70              | 0.00             | 335.76              | 2.52             |                     |                  |
| 334.72              | 0.00             | 335.78              | 2.75             |                     |                  |
| 334.74              | 0.00             | 335.80              | 2.99             |                     |                  |
| 334.76              | 0.00             | 335.82              | 3.24             |                     |                  |
| 334.78              | 0.00             | 335.84              | 3.50             |                     |                  |
| 334.80              | 0.00             | 335.86              | 3.78             |                     |                  |
| 334.82              | 0.00             | 335.88              | 4.06             |                     |                  |
| 334.84              | 0.00             | 335.90              | 4.35             |                     |                  |
| 334.86              | 0.00             | 335.92              | 4.65             |                     |                  |
| 334.88              | 0.00             | 335.94              | 4.96             |                     |                  |
| 334.90              | 0.00             | 335.96              | 5.27             |                     |                  |
| 334.92              | 0.00             | 335.98              | 5.60             |                     |                  |
| 334.94              | 0.00             | 336.00              | 5.93             |                     |                  |
| 334.96              | 0.00             | 336.02              | 6.27             |                     |                  |
| 334.98              | 0.00             | 336.04              | 6.59             |                     |                  |
| 335.00              | 0.00             | 336.06              | 6.91             |                     |                  |
| 335.02              | 0.00             | 336.08              | 7.23             |                     |                  |
| 335.04              | 0.00             | 336.10              | 7.56             |                     |                  |

**Stage-Area-Storage for Pond 4ST: Existing Sediment Trap**

| Elevation<br>(feet) | Storage<br>(acre-feet) | Elevation<br>(feet) | Storage<br>(acre-feet) | Elevation<br>(feet) | Storage<br>(acre-feet) |
|---------------------|------------------------|---------------------|------------------------|---------------------|------------------------|
| 334.00              | 0.000                  | 335.06              | 0.026                  | 336.12              | 0.087                  |
| 334.02              | 0.000                  | 335.08              | 0.027                  | 336.14              | 0.087                  |
| 334.04              | 0.000                  | 335.10              | 0.028                  | 336.16              | 0.087                  |
| 334.06              | 0.000                  | 335.12              | 0.029                  | 336.18              | 0.087                  |
| 334.08              | 0.001                  | 335.14              | 0.029                  | 336.20              | 0.087                  |
| 334.10              | 0.001                  | 335.16              | 0.030                  | 336.22              | 0.087                  |
| 334.12              | 0.001                  | 335.18              | 0.031                  | 336.24              | 0.087                  |
| 334.14              | 0.001                  | 335.20              | 0.032                  | 336.26              | 0.087                  |
| 334.16              | 0.001                  | 335.22              | 0.033                  | 336.28              | 0.087                  |
| 334.18              | 0.002                  | 335.24              | 0.034                  | 336.30              | 0.087                  |
| 334.20              | 0.002                  | 335.26              | 0.035                  | 336.32              | 0.087                  |
| 334.22              | 0.002                  | 335.28              | 0.037                  | 336.34              | 0.087                  |
| 334.24              | 0.002                  | 335.30              | 0.038                  | 336.36              | 0.087                  |
| 334.26              | 0.003                  | 335.32              | 0.039                  |                     |                        |
| 334.28              | 0.003                  | 335.34              | 0.040                  |                     |                        |
| 334.30              | 0.003                  | 335.36              | 0.041                  |                     |                        |
| 334.32              | 0.004                  | 335.38              | 0.042                  |                     |                        |
| 334.34              | 0.004                  | 335.40              | 0.043                  |                     |                        |
| 334.36              | 0.004                  | 335.42              | 0.044                  |                     |                        |
| 334.38              | 0.005                  | 335.44              | 0.046                  |                     |                        |
| 334.40              | 0.005                  | 335.46              | 0.047                  |                     |                        |
| 334.42              | 0.006                  | 335.48              | 0.048                  |                     |                        |
| 334.44              | 0.006                  | 335.50              | 0.049                  |                     |                        |
| 334.46              | 0.007                  | 335.52              | 0.051                  |                     |                        |
| 334.48              | 0.007                  | 335.54              | 0.052                  |                     |                        |
| 334.50              | 0.008                  | 335.56              | 0.053                  |                     |                        |
| 334.52              | 0.008                  | 335.58              | 0.055                  |                     |                        |
| 334.54              | 0.009                  | 335.60              | 0.056                  |                     |                        |
| 334.56              | 0.009                  | 335.62              | 0.057                  |                     |                        |
| 334.58              | 0.010                  | 335.64              | 0.059                  |                     |                        |
| 334.60              | 0.010                  | 335.66              | 0.060                  |                     |                        |
| 334.62              | 0.011                  | 335.68              | 0.062                  |                     |                        |
| 334.64              | 0.011                  | 335.70              | 0.063                  |                     |                        |
| 334.66              | 0.012                  | 335.72              | 0.064                  |                     |                        |
| 334.68              | 0.012                  | 335.74              | 0.066                  |                     |                        |
| 334.70              | 0.013                  | 335.76              | 0.067                  |                     |                        |
| 334.72              | 0.013                  | 335.78              | 0.069                  |                     |                        |
| 334.74              | 0.014                  | 335.80              | 0.071                  |                     |                        |
| 334.76              | 0.015                  | 335.82              | 0.072                  |                     |                        |
| 334.78              | 0.015                  | 335.84              | 0.074                  |                     |                        |
| 334.80              | 0.016                  | 335.86              | 0.075                  |                     |                        |
| 334.82              | 0.016                  | 335.88              | 0.077                  |                     |                        |
| 334.84              | 0.017                  | 335.90              | 0.079                  |                     |                        |
| 334.86              | 0.018                  | 335.92              | 0.080                  |                     |                        |
| 334.88              | 0.019                  | 335.94              | 0.082                  |                     |                        |
| 334.90              | 0.019                  | 335.96              | 0.084                  |                     |                        |
| 334.92              | 0.020                  | 335.98              | 0.085                  |                     |                        |
| 334.94              | 0.021                  | 336.00              | <b>0.087</b>           |                     |                        |
| 334.96              | 0.022                  | 336.02              | 0.087                  |                     |                        |
| 334.98              | 0.022                  | 336.04              | 0.087                  |                     |                        |
| 335.00              | 0.023                  | 336.06              | 0.087                  |                     |                        |
| 335.02              | 0.024                  | 336.08              | 0.087                  |                     |                        |
| 335.04              | 0.025                  | 336.10              | 0.087                  |                     |                        |

**Summary for Pond 5ST: Existing Sediment Trap**

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 1.99" for 100-yr event  
 Inflow = 8.77 cfs @ 12.17 hrs, Volume= 0.740 af  
 Outflow = 6.84 cfs @ 12.29 hrs, Volume= 0.740 af, Atten= 22%, Lag= 7.5 min  
 Discarded = 6.84 cfs @ 12.29 hrs, Volume= 0.740 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 329.47' @ 12.29 hrs Surf.Area= 0.068 ac Storage= 0.072 af

Plug-Flow detention time= 3.6 min calculated for 0.740 af (100% of inflow)  
 Center-of-Mass det. time= 3.6 min ( 878.1 - 874.5 )

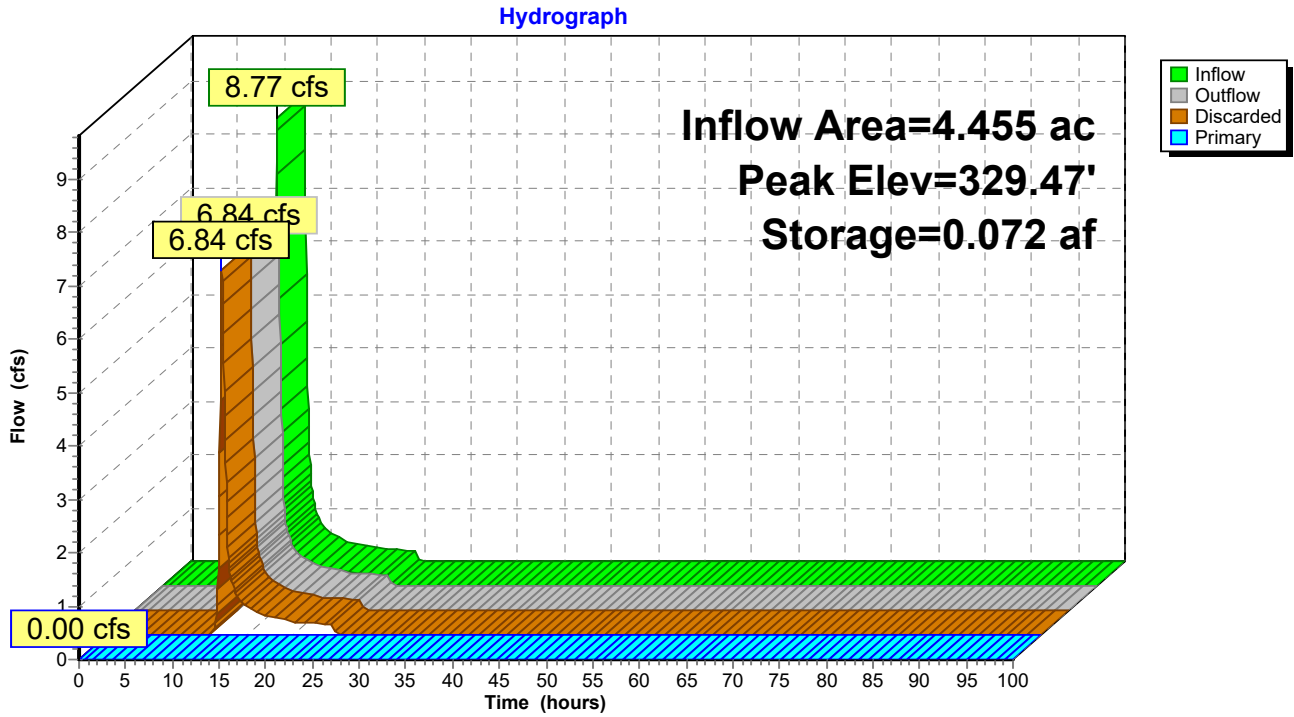
| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |  |
|------------------|-------------------|---------------|--|-----------------------|------------------|--|
| #1               | 327.00'           | 0.230 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |  |
| 327.00           | 0.002             | 70.1          | 0.000  | 0.000                 | 0.002            |  |
| 328.00           | 0.022             | 242.6         | 0.010  | 0.010                 | 0.101            |  |
| 329.00           | 0.048             | 394.7         | 0.034  | 0.044                 | 0.278            |  |
| 330.00           | 0.094             | 554.1         | 0.070  | 0.114                 | 0.554            |  |
| 331.00           | 0.140             | 615.9         | 0.116  | 0.230                 | 0.687            |  |

| Device | Routing   | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|---|--|--|--|--|--|--|--|--|--|--|
| #1     | Discarded | 327.00' | <b>100.000 in/hr Exfiltration over Horizontal area</b>          |  |  |  |  |  |  |  |  |  |  |
| #2     | Primary   | 330.00' | <b>12.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65    |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83                         |  |  |  |  |  |  |  |  |  |  |

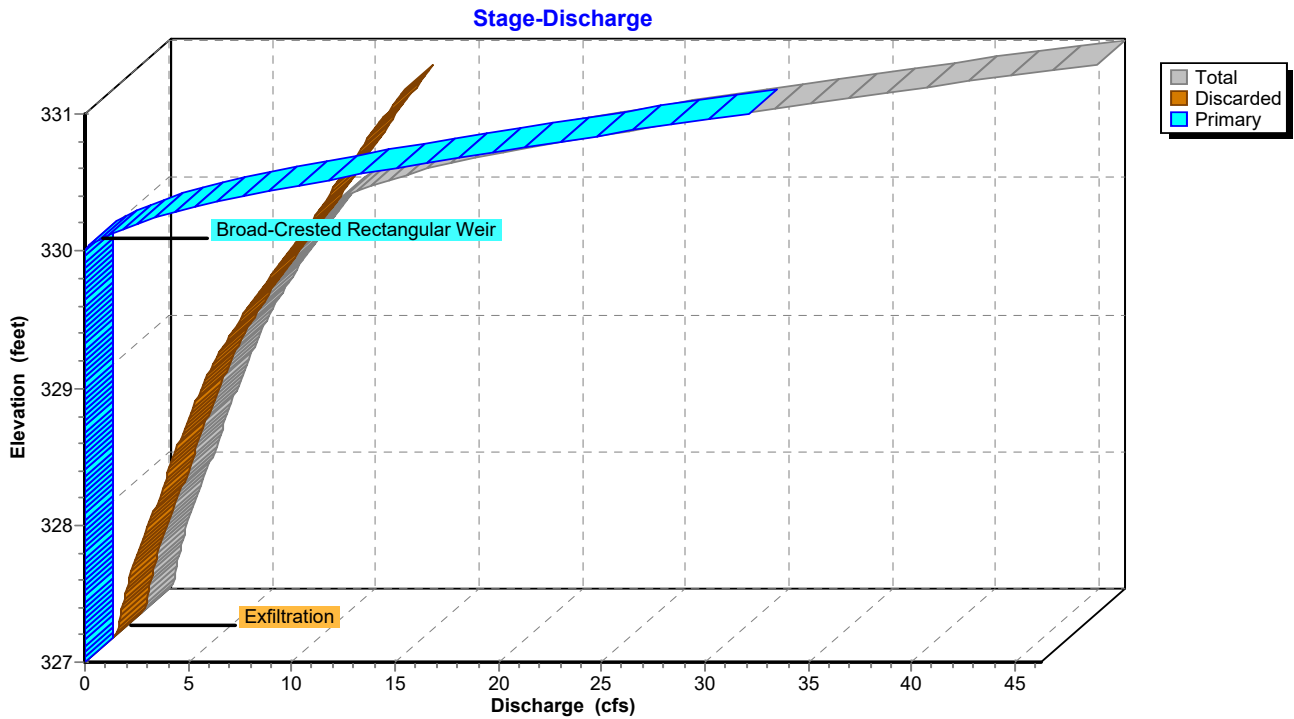
**Discarded OutFlow** Max=6.82 cfs @ 12.29 hrs HW=329.47' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 6.82 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=327.00' TW=0.00' (Dynamic Tailwater)  
 ↑2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

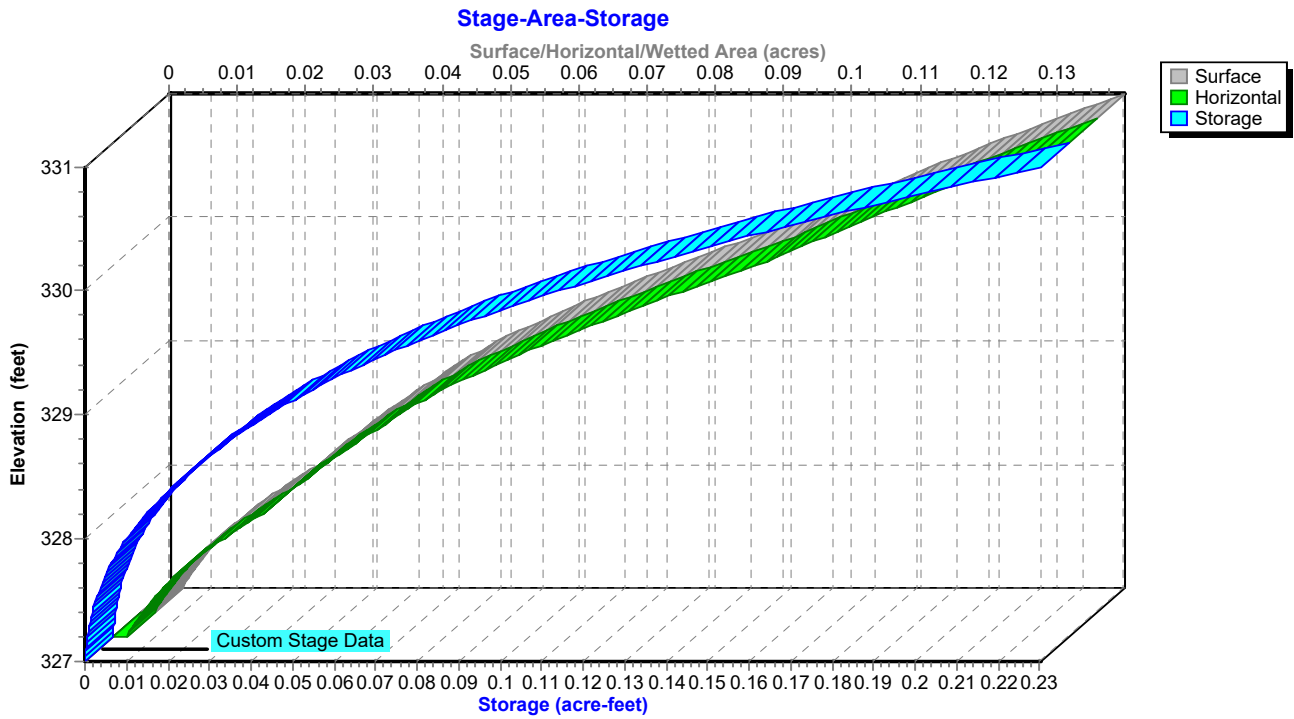
**Pond 5ST: Existing Sediment Trap**



**Pond 5ST: Existing Sediment Trap**



### Pond 5ST: Existing Sediment Trap



**Hydrograph for Pond 5ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|-----------------|---------------|
| 0.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | <b>0.00</b>   |
| 2.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 5.00         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 7.50         | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0.000</b>        | <b>327.00</b>    | <b>0.00</b>   | <b>0.00</b>     | 0.00          |
| 12.50        | <b>3.29</b>  | <b>0.047</b>        | <b>329.06</b>    | <b>5.09</b>   | <b>5.09</b>     | 0.00          |
| 15.00        | 0.53         | 0.001               | 327.27           | 0.54          | 0.54            | 0.00          |
| 17.50        | 0.35         | 0.000               | 327.14           | 0.35          | 0.35            | 0.00          |
| 20.00        | 0.25         | 0.000               | 327.05           | 0.25          | 0.25            | 0.00          |
| 22.50        | 0.22         | 0.000               | 327.02           | 0.22          | 0.22            | 0.00          |
| 25.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 27.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 30.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 32.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 35.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 37.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 40.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 42.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 45.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 47.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 50.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 52.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 55.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 57.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 60.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 62.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 65.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 67.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 70.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 72.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 75.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 77.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 80.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 82.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 85.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 87.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 90.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 92.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 95.00        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 97.50        | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |
| 100.00       | 0.00         | 0.000               | 327.00           | 0.00          | 0.00            | 0.00          |



**Stage-Discharge for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Primary<br>(cfs) |
|---------------------|--------------------|--------------------|------------------|---------------------|--------------------|--------------------|------------------|
| 327.00              | 0.00               | 0.00               | 0.00             | 329.65              | 7.68               | 7.68               | 0.00             |
| 327.05              | 0.25               | 0.25               | 0.00             | 329.70              | 7.92               | 7.92               | 0.00             |
| 327.10              | 0.31               | 0.31               | 0.00             | 329.75              | 8.17               | 8.17               | 0.00             |
| 327.15              | 0.37               | 0.37               | 0.00             | 329.80              | 8.43               | 8.43               | 0.00             |
| 327.20              | 0.43               | 0.43               | 0.00             | 329.85              | 8.68               | 8.68               | 0.00             |
| 327.25              | 0.50               | 0.50               | 0.00             | 329.90              | 8.95               | 8.95               | 0.00             |
| 327.30              | 0.58               | 0.58               | 0.00             | 329.95              | 9.21               | 9.21               | 0.00             |
| 327.35              | 0.66               | 0.66               | 0.00             | 330.00              | 9.48               | 9.48               | 0.00             |
| 327.40              | 0.75               | 0.75               | 0.00             | 330.05              | 10.01              | 9.69               | 0.32             |
| 327.45              | 0.84               | 0.84               | 0.00             | 330.10              | 10.80              | 9.90               | 0.90             |
| 327.50              | 0.94               | 0.94               | 0.00             | 330.15              | 11.77              | 10.12              | 1.65             |
| 327.55              | 1.04               | 1.04               | 0.00             | 330.20              | 12.88              | 10.33              | 2.54             |
| 327.60              | 1.15               | 1.15               | 0.00             | 330.25              | 14.16              | 10.55              | 3.61             |
| 327.65              | 1.27               | 1.27               | 0.00             | 330.30              | 15.58              | 10.77              | 4.81             |
| 327.70              | 1.39               | 1.39               | 0.00             | 330.35              | 17.15              | 11.00              | 6.15             |
| 327.75              | 1.51               | 1.51               | 0.00             | 330.40              | 18.84              | 11.22              | 7.62             |
| 327.80              | 1.64               | 1.64               | 0.00             | 330.45              | 20.72              | 11.45              | 9.26             |
| 327.85              | 1.78               | 1.78               | 0.00             | 330.50              | 22.73              | 11.68              | 11.05            |
| 327.90              | 1.92               | 1.92               | 0.00             | 330.55              | 24.90              | 11.92              | 12.98            |
| 327.95              | 2.07               | 2.07               | 0.00             | 330.60              | 27.21              | 12.15              | 15.06            |
| 328.00              | 2.22               | 2.22               | 0.00             | 330.65              | 29.34              | 12.39              | 16.95            |
| 328.05              | 2.33               | 2.33               | 0.00             | 330.70              | 31.53              | 12.63              | 18.91            |
| 328.10              | 2.44               | 2.44               | 0.00             | 330.75              | 33.80              | 12.87              | 20.93            |
| 328.15              | 2.55               | 2.55               | 0.00             | 330.80              | 36.13              | 13.12              | 23.01            |
| 328.20              | 2.66               | 2.66               | 0.00             | 330.85              | 38.56              | 13.36              | 25.20            |
| 328.25              | 2.78               | 2.78               | 0.00             | 330.90              | 41.07              | 13.61              | 27.46            |
| 328.30              | 2.90               | 2.90               | 0.00             | 330.95              | 43.64              | 13.86              | 29.78            |
| 328.35              | 3.02               | 3.02               | 0.00             | 331.00              | <b>46.28</b>       | <b>14.12</b>       | <b>32.16</b>     |
| 328.40              | 3.15               | 3.15               | 0.00             |                     |                    |                    |                  |
| 328.45              | 3.27               | 3.27               | 0.00             |                     |                    |                    |                  |
| 328.50              | 3.40               | 3.40               | 0.00             |                     |                    |                    |                  |
| 328.55              | 3.54               | 3.54               | 0.00             |                     |                    |                    |                  |
| 328.60              | 3.67               | 3.67               | 0.00             |                     |                    |                    |                  |
| 328.65              | 3.81               | 3.81               | 0.00             |                     |                    |                    |                  |
| 328.70              | 3.95               | 3.95               | 0.00             |                     |                    |                    |                  |
| 328.75              | 4.09               | 4.09               | 0.00             |                     |                    |                    |                  |
| 328.80              | 4.23               | 4.23               | 0.00             |                     |                    |                    |                  |
| 328.85              | 4.38               | 4.38               | 0.00             |                     |                    |                    |                  |
| 328.90              | 4.53               | 4.53               | 0.00             |                     |                    |                    |                  |
| 328.95              | 4.68               | 4.68               | 0.00             |                     |                    |                    |                  |
| 329.00              | 4.84               | 4.84               | 0.00             |                     |                    |                    |                  |
| 329.05              | 5.04               | 5.04               | 0.00             |                     |                    |                    |                  |
| 329.10              | 5.23               | 5.23               | 0.00             |                     |                    |                    |                  |
| 329.15              | 5.44               | 5.44               | 0.00             |                     |                    |                    |                  |
| 329.20              | 5.64               | 5.64               | 0.00             |                     |                    |                    |                  |
| 329.25              | 5.85               | 5.85               | 0.00             |                     |                    |                    |                  |
| 329.30              | 6.07               | 6.07               | 0.00             |                     |                    |                    |                  |
| 329.35              | 6.29               | 6.29               | 0.00             |                     |                    |                    |                  |
| 329.40              | 6.51               | 6.51               | 0.00             |                     |                    |                    |                  |
| 329.45              | 6.74               | 6.74               | 0.00             |                     |                    |                    |                  |
| 329.50              | 6.97               | 6.97               | 0.00             |                     |                    |                    |                  |
| 329.55              | 7.20               | 7.20               | 0.00             |                     |                    |                    |                  |
| 329.60              | 7.44               | 7.44               | 0.00             |                     |                    |                    |                  |

**Stage-Area-Storage for Pond 5ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Horizontal<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|-----------------------|------------------------|---------------------|--------------------|-----------------------|------------------------|
| 327.00              | 0.002              | 0.002                 | 0.000                  | 329.65              | 0.076              | 0.076                 | 0.084                  |
| 327.05              | 0.002              | 0.002                 | 0.000                  | 329.70              | 0.079              | 0.079                 | 0.088                  |
| 327.10              | 0.003              | 0.003                 | 0.000                  | 329.75              | 0.081              | 0.081                 | 0.092                  |
| 327.15              | 0.004              | 0.004                 | 0.000                  | 329.80              | 0.084              | 0.084                 | 0.096                  |
| 327.20              | 0.004              | 0.004                 | 0.001                  | 329.85              | 0.086              | 0.086                 | 0.101                  |
| 327.25              | 0.005              | 0.005                 | 0.001                  | 329.90              | 0.089              | 0.089                 | 0.105                  |
| 327.30              | 0.006              | 0.006                 | 0.001                  | 329.95              | 0.091              | 0.091                 | 0.109                  |
| 327.35              | 0.007              | 0.007                 | 0.001                  | 330.00              | 0.094              | 0.094                 | 0.114                  |
| 327.40              | 0.007              | 0.007                 | 0.002                  | 330.05              | 0.096              | 0.096                 | 0.119                  |
| 327.45              | 0.008              | 0.008                 | 0.002                  | 330.10              | 0.098              | 0.098                 | 0.124                  |
| 327.50              | 0.009              | 0.009                 | 0.003                  | 330.15              | 0.100              | 0.100                 | 0.129                  |
| 327.55              | 0.010              | 0.010                 | 0.003                  | 330.20              | 0.102              | 0.102                 | 0.134                  |
| 327.60              | 0.011              | 0.011                 | 0.004                  | 330.25              | 0.105              | 0.105                 | 0.139                  |
| 327.65              | 0.013              | 0.013                 | 0.004                  | 330.30              | 0.107              | 0.107                 | 0.144                  |
| 327.70              | 0.014              | 0.014                 | 0.005                  | 330.35              | 0.109              | 0.109                 | 0.150                  |
| 327.75              | 0.015              | 0.015                 | 0.006                  | 330.40              | 0.111              | 0.111                 | 0.155                  |
| 327.80              | 0.016              | 0.016                 | 0.006                  | 330.45              | 0.114              | 0.114                 | 0.161                  |
| 327.85              | 0.018              | 0.018                 | 0.007                  | 330.50              | 0.116              | 0.116                 | 0.166                  |
| 327.90              | 0.019              | 0.019                 | 0.008                  | 330.55              | 0.118              | 0.118                 | 0.172                  |
| 327.95              | 0.020              | 0.020                 | 0.009                  | 330.60              | 0.121              | 0.121                 | 0.178                  |
| 328.00              | 0.022              | 0.022                 | 0.010                  | 330.65              | 0.123              | 0.123                 | 0.184                  |
| 328.05              | 0.023              | 0.023                 | 0.011                  | 330.70              | 0.125              | 0.125                 | 0.191                  |
| 328.10              | 0.024              | 0.024                 | 0.013                  | 330.75              | 0.128              | 0.128                 | 0.197                  |
| 328.15              | 0.025              | 0.025                 | 0.014                  | 330.80              | 0.130              | 0.130                 | 0.203                  |
| 328.20              | 0.026              | 0.026                 | 0.015                  | 330.85              | 0.133              | 0.133                 | 0.210                  |
| 328.25              | 0.028              | 0.028                 | 0.016                  | 330.90              | 0.135              | 0.135                 | 0.217                  |
| 328.30              | 0.029              | 0.029                 | 0.018                  | 330.95              | 0.137              | 0.137                 | 0.223                  |
| 328.35              | 0.030              | 0.030                 | 0.019                  | 331.00              | <b>0.140</b>       | <b>0.140</b>          | <b>0.230</b>           |
| 328.40              | 0.031              | 0.031                 | 0.021                  |                     |                    |                       |                        |
| 328.45              | 0.032              | 0.032                 | 0.022                  |                     |                    |                       |                        |
| 328.50              | 0.034              | 0.034                 | 0.024                  |                     |                    |                       |                        |
| 328.55              | 0.035              | 0.035                 | 0.026                  |                     |                    |                       |                        |
| 328.60              | 0.036              | 0.036                 | 0.028                  |                     |                    |                       |                        |
| 328.65              | 0.038              | 0.038                 | 0.029                  |                     |                    |                       |                        |
| 328.70              | 0.039              | 0.039                 | 0.031                  |                     |                    |                       |                        |
| 328.75              | 0.041              | 0.041                 | 0.033                  |                     |                    |                       |                        |
| 328.80              | 0.042              | 0.042                 | 0.035                  |                     |                    |                       |                        |
| 328.85              | 0.043              | 0.043                 | 0.038                  |                     |                    |                       |                        |
| 328.90              | 0.045              | 0.045                 | 0.040                  |                     |                    |                       |                        |
| 328.95              | 0.046              | 0.046                 | 0.042                  |                     |                    |                       |                        |
| 329.00              | 0.048              | 0.048                 | 0.044                  |                     |                    |                       |                        |
| 329.05              | 0.050              | 0.050                 | 0.047                  |                     |                    |                       |                        |
| 329.10              | 0.052              | 0.052                 | 0.049                  |                     |                    |                       |                        |
| 329.15              | 0.054              | 0.054                 | 0.052                  |                     |                    |                       |                        |
| 329.20              | 0.056              | 0.056                 | 0.055                  |                     |                    |                       |                        |
| 329.25              | 0.058              | 0.058                 | 0.058                  |                     |                    |                       |                        |
| 329.30              | 0.060              | 0.060                 | 0.061                  |                     |                    |                       |                        |
| 329.35              | 0.062              | 0.062                 | 0.064                  |                     |                    |                       |                        |
| 329.40              | 0.065              | 0.065                 | 0.067                  |                     |                    |                       |                        |
| 329.45              | 0.067              | 0.067                 | 0.070                  |                     |                    |                       |                        |
| 329.50              | 0.069              | 0.069                 | 0.073                  |                     |                    |                       |                        |
| 329.55              | 0.071              | 0.071                 | 0.077                  |                     |                    |                       |                        |
| 329.60              | 0.074              | 0.074                 | 0.081                  |                     |                    |                       |                        |

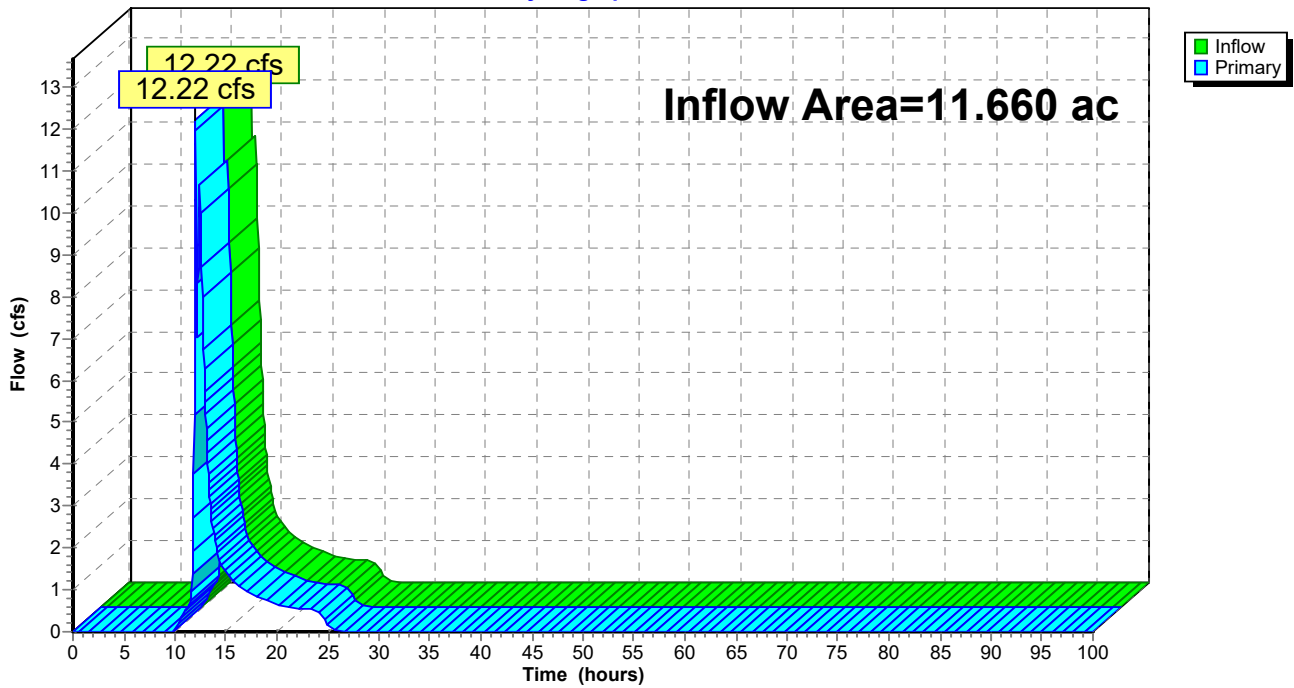
### Summary for Link AP3: Analysis Point 3

Inflow Area = 11.660 ac, 8.84% Impervious, Inflow Depth = 1.95" for 100-yr event  
Inflow = 12.22 cfs @ 12.03 hrs, Volume= 1.891 af  
Primary = 12.22 cfs @ 12.03 hrs, Volume= 1.891 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3

Hydrograph



**Hydrograph for Link AP3: Analysis Point 3**

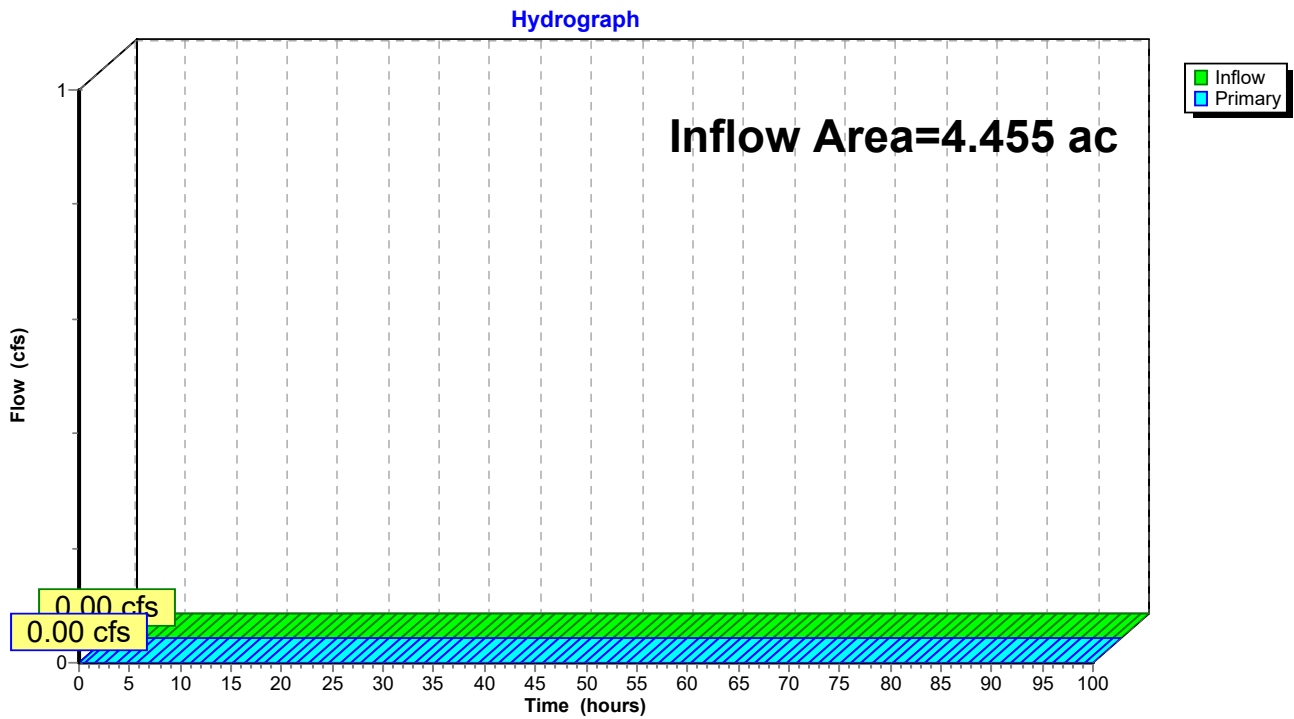
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.01         | 0.00             | 0.01          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.46         | 0.00             | 0.46          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>11.62</b> | 0.00             | <b>11.62</b>  | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>5.19</b>  | 0.00             | <b>5.19</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 2.08         | 0.00             | 2.08          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 1.42         | 0.00             | 1.42          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 1.14         | 0.00             | 1.14          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.95         | 0.00             | 0.95          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.84         | 0.00             | 0.84          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.75         | 0.00             | 0.75          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.65         | 0.00             | 0.65          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.57         | 0.00             | 0.57          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.55         | 0.00             | 0.55          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.53         | 0.00             | 0.53          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.51         | 0.00             | 0.51          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.16         | 0.00             | 0.16          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.02         | 0.00             | 0.02          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.01         | 0.00             | 0.01          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 4.455 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

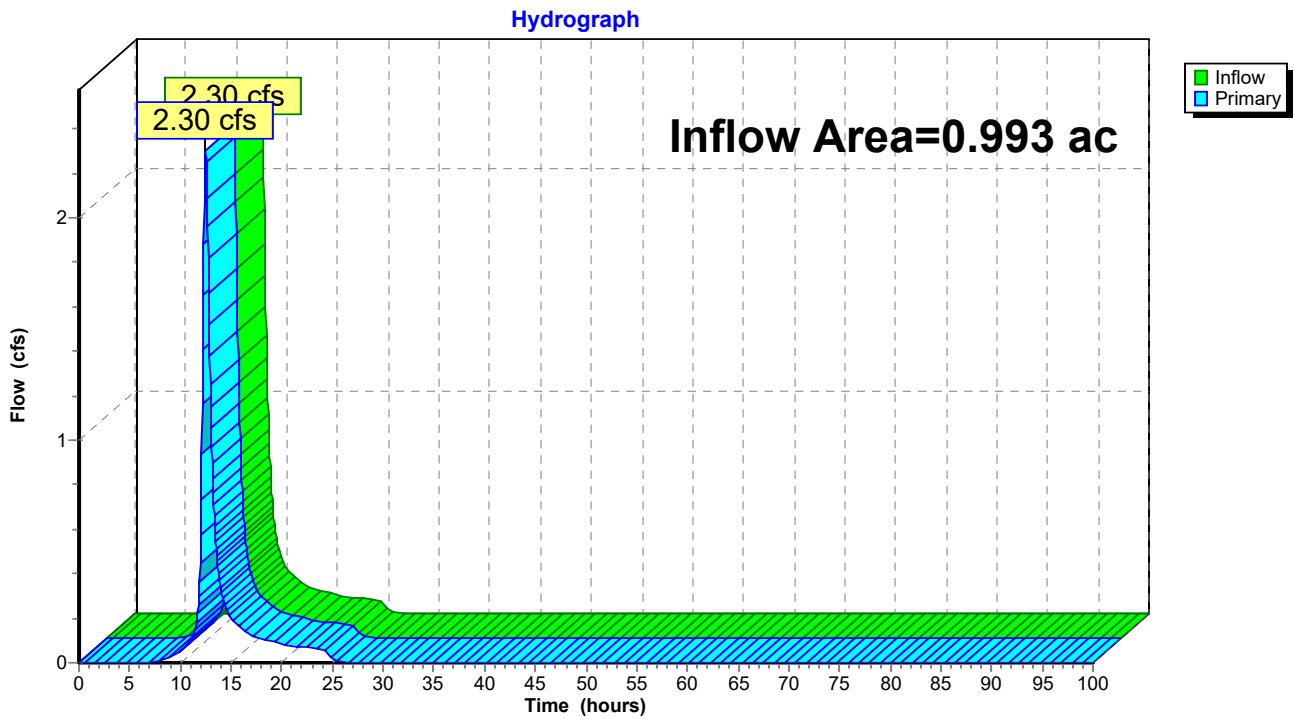
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP5: Analysis Point 5

Inflow Area = 0.993 ac, 0.00% Impervious, Inflow Depth = 3.79" for 100-yr event  
Inflow = 2.30 cfs @ 12.49 hrs, Volume= 0.314 af  
Primary = 2.30 cfs @ 12.49 hrs, Volume= 0.314 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5



**Hydrograph for Link AP5: Analysis Point 5**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.01         | 0.00             | 0.01          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.02         | 0.00             | 0.02          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.05         | 0.00             | 0.05          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.10         | 0.00             | 0.10          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.57</b>  | 0.00             | <b>0.57</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>1.15</b>  | 0.00             | <b>1.15</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.33         | 0.00             | 0.33          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.20         | 0.00             | 0.20          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.15         | 0.00             | 0.15          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.12         | 0.00             | 0.12          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.11         | 0.00             | 0.11          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.10         | 0.00             | 0.10          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.08         | 0.00             | 0.08          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.07         | 0.00             | 0.07          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.07         | 0.00             | 0.07          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.07         | 0.00             | 0.07          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.06         | 0.00             | 0.06          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |



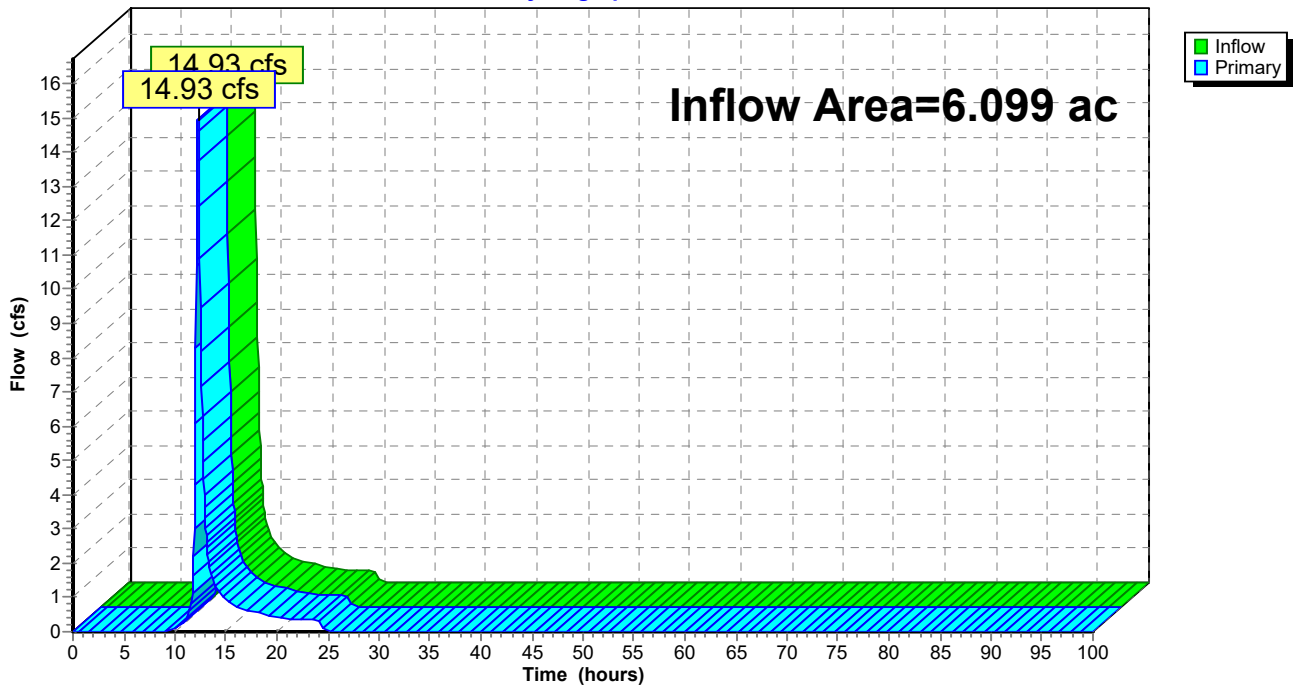
### Summary for Link AP6: Analysis Point 6

Inflow Area = 6.099 ac, 0.00% Impervious, Inflow Depth = 2.90" for 100-yr event  
Inflow = 14.93 cfs @ 12.26 hrs, Volume= 1.475 af  
Primary = 14.93 cfs @ 12.26 hrs, Volume= 1.475 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6

Hydrograph



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.07         | 0.00             | 0.07          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.32         | 0.00             | 0.32          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>6.07</b>  | 0.00             | <b>6.07</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>3.04</b>  | 0.00             | <b>3.04</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 1.31         | 0.00             | 1.31          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.95         | 0.00             | 0.95          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.76         | 0.00             | 0.76          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.63         | 0.00             | 0.63          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.56         | 0.00             | 0.56          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.49         | 0.00             | 0.49          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.42         | 0.00             | 0.42          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.38         | 0.00             | 0.38          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.37         | 0.00             | 0.37          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.35         | 0.00             | 0.35          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.34         | 0.00             | 0.34          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

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# 1096 Existing Stormwater Conditions\_Final D Soils Greenhouses

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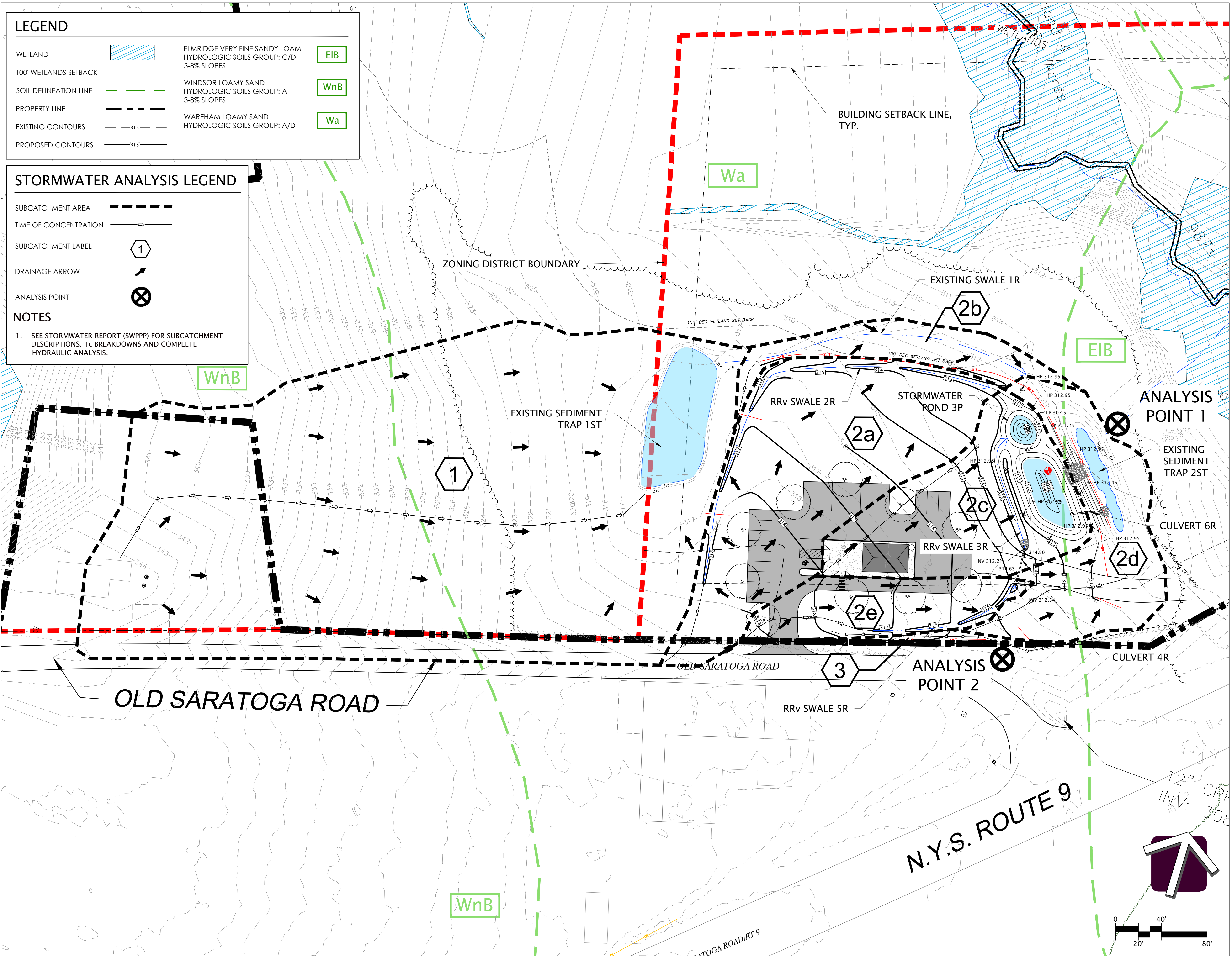
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**LEGEND**

|                       |  |   |            |
|-----------------------|--|---|------------|
| WETLAND               |  | ELMRIDGE VERY FINE SANDY LOAM<br>HYDROLOGIC SOILS GROUP: C/D<br>3-8% SLOPES | <b>EIB</b> |
| 100' WETLANDS SETBACK |  |   |            |
| SOIL DELINEATION LINE |  | WINDSOR LOAMY SAND<br>HYDROLOGIC SOILS GROUP: A<br>3-8% SLOPES              | <b>WnB</b> |
| PROPERTY LINE         |  |   |            |
| EXISTING CONTOURS     |  | WAREHAM LOAMY SAND<br>HYDROLOGIC SOILS GROUP: A/D                           | <b>Wa</b>  |
| PROPOSED CONTOURS     |  |   |            |

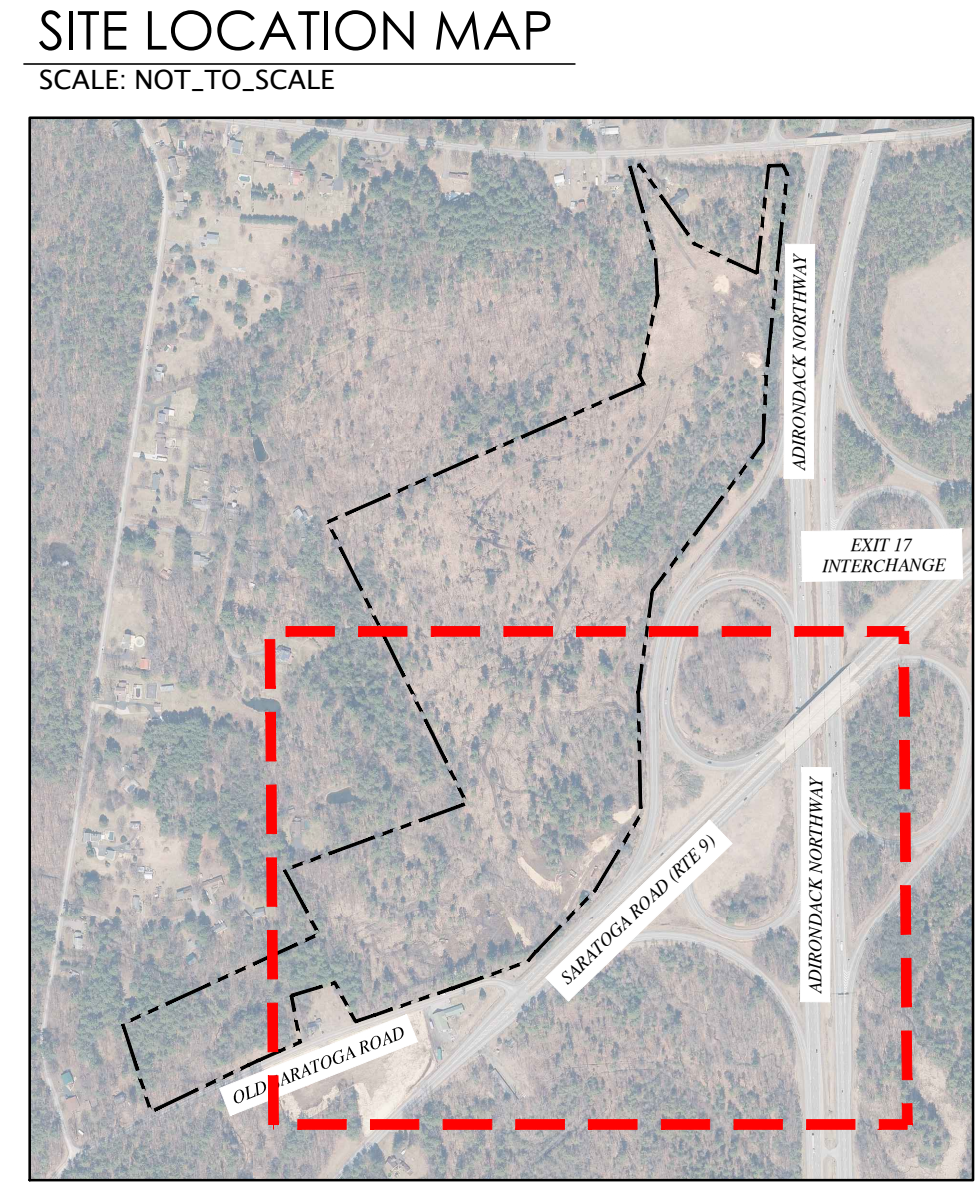
**STORMWATER ANALYSIS LEGEND**

|                       |  |
|-----------------------|--|
| SUBCATCHMENT AREA     |  |
| TIME OF CONCENTRATION |  |
| SUBCATCHMENT LABEL    |  |
| DRAINAGE ARROW        |  |
| ANALYSIS POINT        |  |

**NOTES**

- SEE STORMWATER REPORT (SWPPP) FOR SUBCATCHMENT DESCRIPTIONS, TC BREAKDOWNS AND COMPLETE HYDRAULIC ANALYSIS.

PRELIMINARY  
NOT FOR  
CONSTRUCTION



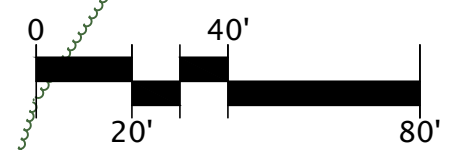
**Shangri-La  
Greenhouses and  
Farmstand**  
Town of Moreau,  
Saratoga County, New York

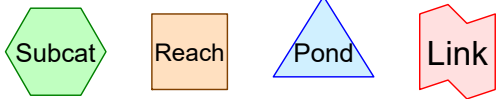
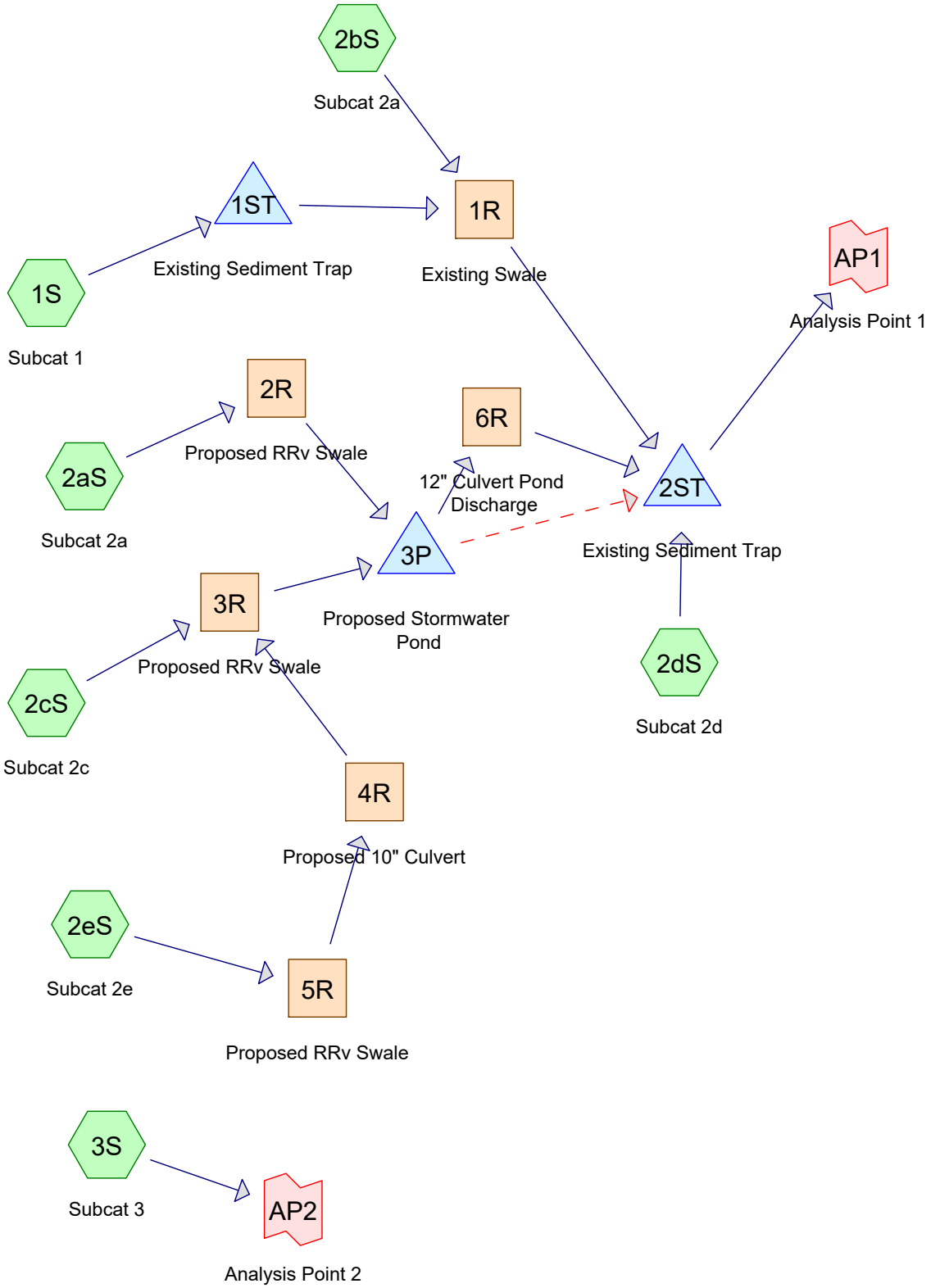
| Date | Revision | Drawn |
|------|----------|-------|
|      |          |       |
|      |          |       |

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Drawn By: SRZ      Checked By: PL  
 Project No. 420-1096  
 Date: 2024-12-13

**Proposed Stormwater Map  
Farmstand  
STR-2**





# 1096 Proposed Stormwater Conditions Final D Soils Farmstand

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## Rainfall Events Listing

| Event# | Event Name | Storm Type    | Curve | Mode    | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1      | 1-yr       | Type II 24-hr |       | Default | 24.00            | 1   | 2.24           | 2   |
| 2      | 10-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 3.72           | 2   |
| 3      | 25-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 4.56           | 2   |
| 4      | 100-yr     | Type II 24-hr |       | Default | 24.00            | 1   | 6.24           | 2   |
| 5      | WQv        | Type II 24-hr |       | Default | 24.00            | 1   | 1.20           | 2   |

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## Area Listing (all nodes)

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)                   |
|-----------------|-----------|---|
| 0.546           | 39        | >75% Grass cover, Good, HSG A (1S)                      |
| 0.294           | 80        | >75% Grass cover, Good, HSG D (2aS, 2cS, 3S)            |
| 0.040           | 89        | Gravel surface, HSG C (2dS)                             |
| 0.040           | 89        | Gravel surface, HSG D (2cS, 2dS)                        |
| 0.194           | 71        | Meadow, non-grazed, HSG C (2aS, 2bS, 2cS, 2dS)          |
| 2.166           | 78        | Meadow, non-grazed, HSG D (1S, 2aS, 2bS, 2cS, 2dS, 2eS) |
| 0.005           | 98        | Paved parking, HSG A (1S)                               |
| 0.330           | 98        | Paved parking, HSG D (2aS, 2cS, 2eS)                    |
| 0.056           | 98        | Paved parking, HSGD (2cS)                               |
| 0.127           | 98        | Paved roads w/curbs & sewers, HSG A (1S)                |
| 0.001           | 98        | Paved roads w/curbs & sewers, HSG D (3S)                |
| 0.022           | 98        | Roofs, HSG A (1S)                                       |
| 0.023           | 98        | Roofs, HSG D (2cS)                                      |
| 0.106           | 98        | Water Surface, HSG C (2dS)                              |
| 0.199           | 98        | Water Surface, HSG D (1S, 2cS, 2dS)                     |
| 1.253           | 30        | Woods, Good, HSG A (1S)                                 |
| <b>5.402</b>    | <b>66</b> | <b>TOTAL AREA</b>                                       |



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## Soil Listing (all nodes)

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers         |
|-----------------|---------------|---------------------------------|
| 1.953           | HSG A         | 1S                              |
| 0.000           | HSG B         |                                 |
| 0.340           | HSG C         | 2aS, 2bS, 2cS, 2dS              |
| 3.053           | HSG D         | 1S, 2aS, 2bS, 2cS, 2dS, 2eS, 3S |
| 0.056           | Other         | 2cS                             |
| <b>5.402</b>    |               | <b>TOTAL AREA</b>               |

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## Ground Covers (all nodes)

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover              | Subcatchment<br>Numbers                                |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------------------|--|
| 0.546            | 0.000            | 0.000            | 0.294            | 0.000            | 0.840            | >75% Grass cover, Good       | 1S,<br>2aS,<br><br>2cS,<br>3S                          |
| 0.000            | 0.000            | 0.040            | 0.040            | 0.000            | 0.080            | Gravel surface               | 2cS,<br>2dS  |
| 0.000            | 0.000            | 0.194            | 2.166            | 0.000            | 2.360            | Meadow, non-grazed           | 1S,<br>2aS,<br><br>2bS,<br><br>2cS,<br><br>2dS,<br>2eS |
| 0.005            | 0.000            | 0.000            | 0.330            | 0.056            | 0.391            | Paved parking                | 1S,<br>2aS,<br><br>2cS,<br>2eS                         |
| 0.127            | 0.000            | 0.000            | 0.001            | 0.000            | 0.128            | Paved roads w/curbs & sewers | 1S,<br>3S  |
| 0.022            | 0.000            | 0.000            | 0.023            | 0.000            | 0.045            | Roofs                        | 1S,<br>2cS   |
| 0.000            | 0.000            | 0.106            | 0.199            | 0.000            | 0.305            | Water Surface                | 1S,<br>2cS,<br>2dS                                     |
| 1.253            | 0.000            | 0.000            | 0.000            | 0.000            | 1.253            | Woods, Good                  | 1S   |
| <b>1.953</b>     | <b>0.000</b>     | <b>0.340</b>     | <b>3.053</b>     | <b>0.056</b>     | <b>5.402</b>     | <b>TOTAL AREA</b>            |  |

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## Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n     | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) | Node Name |
|-------|-------------|------------------|-------------------|---------------|---------------|-------|----------------|----------------------|----------------------|-----------|
| 1     | 4R          | 312.54           | 312.21            | 33.0          | 0.0100        | 0.010 | 0.0            | 10.0                 | 0.0                  |           |
| 2     | 6R          | 309.83           | 309.65            | 22.6          | 0.0080        | 0.012 | 0.0            | 12.0                 | 0.0                  |           |

**1096 Proposed Stormwater Conditions Final D Soils Far Type II 24-hr 1-yr Rainfall=2.24"**

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |  |
|---|--|
| <b>Subcatchment 1S: Subcat 1</b>            | Runoff Area=3.182 ac 9.18% Impervious Runoff Depth=0.03"<br>Flow Length=499' Tc=10.1 min CN=54 Runoff=0.01 cfs 0.008 af                                      |
| <b>Subcatchment 2aS: Subcat 2a</b>          | Runoff Area=0.830 ac 18.55% Impervious Runoff Depth=0.81"<br>Flow Length=81' Tc=6.7 min CN=82 Runoff=1.15 cfs 0.056 af                                       |
| <b>Subcatchment 2bS: Subcat 2a</b>          | Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=0.62"<br>Flow Length=55' Slope=0.0170 '/' Tc=6.0 min CN=78 Runoff=0.20 cfs 0.010 af                       |
| <b>Subcatchment 2cS: Subcat 2c</b>          | Runoff Area=0.506 ac 47.43% Impervious Runoff Depth=1.16"<br>Flow Length=193' Tc=6.0 min CN=88 Runoff=1.01 cfs 0.049 af                                      |
| <b>Subcatchment 2dS: Subcat 2d</b>          | Runoff Area=0.425 ac 28.00% Impervious Runoff Depth=0.81"<br>Flow Length=156' Tc=7.5 min CN=82 Runoff=0.57 cfs 0.029 af                                      |
| <b>Subcatchment 2eS: Subcat 2e</b>          | Runoff Area=0.238 ac 26.47% Impervious Runoff Depth=0.86"<br>Flow Length=120' Tc=7.9 min CN=83 Runoff=0.34 cfs 0.017 af                                      |
| <b>Subcatchment 3S: Subcat 3</b>            | Runoff Area=0.031 ac 3.23% Impervious Runoff Depth=0.76"<br>Flow Length=13' Slope=0.0779 '/' Tc=6.0 min CN=81 Runoff=0.04 cfs 0.002 af                       |
| <b>Reach 1R: Existing Swale</b>             | Avg. Flow Depth=0.07' Max Vel=1.13 fps Inflow=0.20 cfs 0.010 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=0.18 cfs 0.010 af                |
| <b>Reach 2R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.33' Max Vel=0.89 fps Inflow=1.15 cfs 0.056 af<br>n=0.080 L=390.0' S=0.0154 '/' Capacity=8.93 cfs Outflow=0.86 cfs 0.056 af                 |
| <b>Reach 3R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.47' Max Vel=0.76 fps Inflow=1.29 cfs 0.066 af<br>n=0.100 L=104.0' S=0.0116 '/' Capacity=8.50 cfs Outflow=1.23 cfs 0.066 af                 |
| <b>Reach 4R: Proposed 10" Culvert</b>       | Avg. Flow Depth=0.19' Max Vel=3.42 fps Inflow=0.31 cfs 0.017 af<br>10.0" Round Pipe n=0.010 L=33.0' S=0.0100 '/' Capacity=2.85 cfs Outflow=0.31 cfs 0.017 af |
| <b>Reach 5R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.15' Max Vel=0.84 fps Inflow=0.34 cfs 0.017 af<br>n=0.080 L=136.0' S=0.0328 '/' Capacity=6.51 cfs Outflow=0.31 cfs 0.017 af                 |
| <b>Reach 6R: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=0.12' Max Vel=1.94 fps Inflow=0.10 cfs 0.122 af<br>12.0" Round Pipe n=0.012 L=22.6' S=0.0080 '/' Capacity=3.44 cfs Outflow=0.10 cfs 0.122 af |
| <b>Pond 1ST: Existing Sediment Trap</b>     | Peak Elev=315.57' Storage=0.201 af Inflow=0.01 cfs 0.008 af<br>Outflow=0.00 cfs 0.000 af   |
| <b>Pond 2ST: Existing Sediment Trap</b>     | Peak Elev=310.18' Storage=0.158 af Inflow=0.76 cfs 0.160 af<br>Outflow=0.01 cfs 0.014 af   |
| <b>Pond 3P: Proposed Stormwater Pond</b>    | Peak Elev=311.02' Storage=4,468 cf Inflow=2.04 cfs 0.122 af<br>Primary=0.10 cfs 0.122 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.122 af               |

**Link AP1: Analysis Point 1**

Inflow=0.01 cfs 0.014 af  
Primary=0.01 cfs 0.014 af

**Link AP2: Analysis Point 2**

Inflow=0.04 cfs 0.002 af  
Primary=0.04 cfs 0.002 af

**Total Runoff Area = 5.402 ac   Runoff Volume = 0.171 af   Average Runoff Depth = 0.38"**  
**83.91% Pervious = 4.533 ac   16.09% Impervious = 0.869 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 0.01 cfs @ 17.46 hrs, Volume= 0.008 af, Depth= 0.03"  
 Routed to Pond 1ST : Existing Sediment Trap

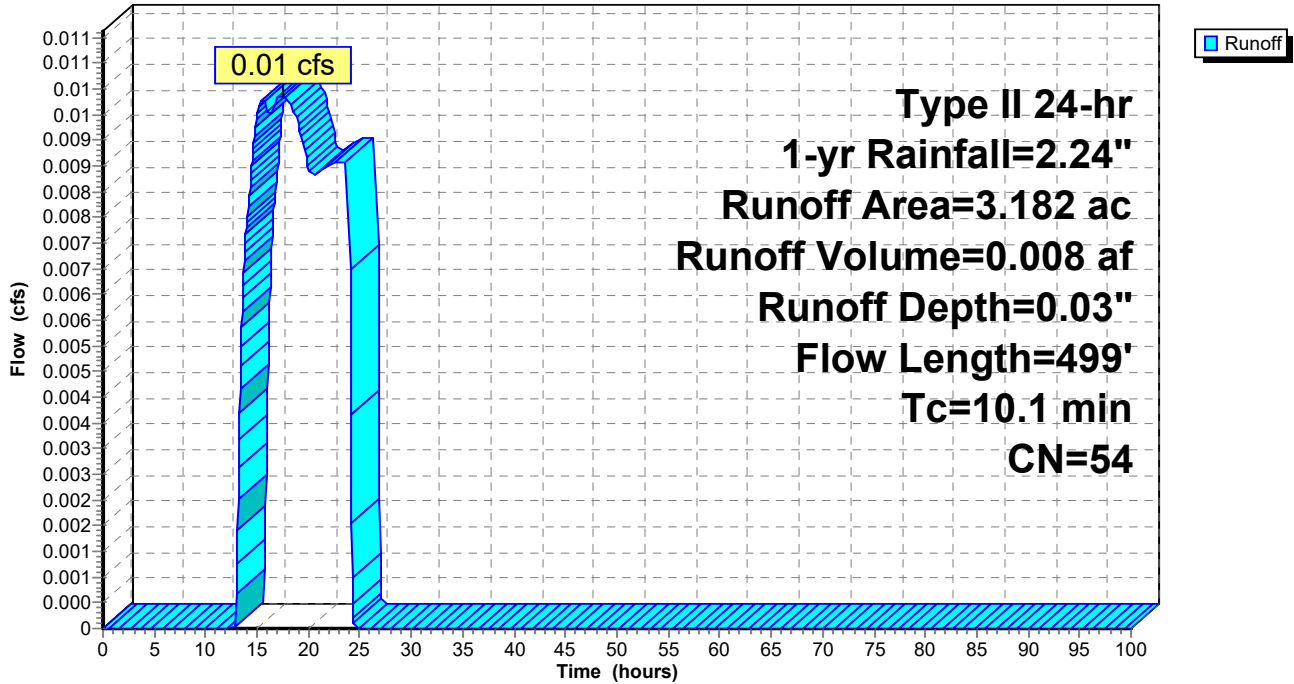
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.022     | 98 | Roofs, HSG A                        |
| 0.005     | 98 | Paved parking, HSG A                |
| 0.127     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.253     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 1.091     | 78 | Meadow, non-grazed, HSG D           |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.182     | 54 | Weighted Average                    |
| 2.890     |    | 90.82% Pervious Area                |
| 0.292     |    | 9.18% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.3      | 69            | 0.0600        | 3.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.1     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



**Hydrograph for Subcatchment 1S: Subcat 1**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.03            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.03            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.03            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.03            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.03            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.03            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.03            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.03            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.03            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.03            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.03            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.03            | 0.00         |
| 12.00        | 1.49             | 0.00            | 0.00         | 65.00        | 2.24             | 0.03            | 0.00         |
| 13.00        | 1.73             | 0.00            | 0.00         | 66.00        | 2.24             | 0.03            | 0.00         |
| 14.00        | 1.84             | 0.00            | 0.01         | 67.00        | 2.24             | 0.03            | 0.00         |
| 15.00        | 1.91             | 0.00            | 0.01         | 68.00        | 2.24             | 0.03            | 0.00         |
| 16.00        | 1.97             | 0.01            | 0.01         | 69.00        | 2.24             | 0.03            | 0.00         |
| 17.00        | 2.02             | 0.01            | <b>0.01</b>  | 70.00        | 2.24             | 0.03            | 0.00         |
| 18.00        | 2.06             | 0.01            | <b>0.01</b>  | 71.00        | 2.24             | 0.03            | 0.00         |
| 19.00        | 2.10             | 0.02            | 0.01         | 72.00        | 2.24             | 0.03            | 0.00         |
| 20.00        | 2.13             | 0.02            | 0.01         | 73.00        | 2.24             | 0.03            | 0.00         |
| 21.00        | 2.16             | 0.02            | 0.01         | 74.00        | 2.24             | 0.03            | 0.00         |
| 22.00        | 2.19             | 0.03            | 0.01         | 75.00        | 2.24             | 0.03            | 0.00         |
| 23.00        | 2.21             | 0.03            | 0.01         | 76.00        | 2.24             | 0.03            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.03</b>     | 0.01         | 77.00        | 2.24             | 0.03            | 0.00         |
| 25.00        | 2.24             | 0.03            | 0.00         | 78.00        | 2.24             | 0.03            | 0.00         |
| 26.00        | 2.24             | 0.03            | 0.00         | 79.00        | 2.24             | 0.03            | 0.00         |
| 27.00        | 2.24             | 0.03            | 0.00         | 80.00        | 2.24             | 0.03            | 0.00         |
| 28.00        | 2.24             | 0.03            | 0.00         | 81.00        | 2.24             | 0.03            | 0.00         |
| 29.00        | 2.24             | 0.03            | 0.00         | 82.00        | 2.24             | 0.03            | 0.00         |
| 30.00        | 2.24             | 0.03            | 0.00         | 83.00        | 2.24             | 0.03            | 0.00         |
| 31.00        | 2.24             | 0.03            | 0.00         | 84.00        | 2.24             | 0.03            | 0.00         |
| 32.00        | 2.24             | 0.03            | 0.00         | 85.00        | 2.24             | 0.03            | 0.00         |
| 33.00        | 2.24             | 0.03            | 0.00         | 86.00        | 2.24             | 0.03            | 0.00         |
| 34.00        | 2.24             | 0.03            | 0.00         | 87.00        | 2.24             | 0.03            | 0.00         |
| 35.00        | 2.24             | 0.03            | 0.00         | 88.00        | 2.24             | 0.03            | 0.00         |
| 36.00        | 2.24             | 0.03            | 0.00         | 89.00        | 2.24             | 0.03            | 0.00         |
| 37.00        | 2.24             | 0.03            | 0.00         | 90.00        | 2.24             | 0.03            | 0.00         |
| 38.00        | 2.24             | 0.03            | 0.00         | 91.00        | 2.24             | 0.03            | 0.00         |
| 39.00        | 2.24             | 0.03            | 0.00         | 92.00        | 2.24             | 0.03            | 0.00         |
| 40.00        | 2.24             | 0.03            | 0.00         | 93.00        | 2.24             | 0.03            | 0.00         |
| 41.00        | 2.24             | 0.03            | 0.00         | 94.00        | 2.24             | 0.03            | 0.00         |
| 42.00        | 2.24             | 0.03            | 0.00         | 95.00        | 2.24             | 0.03            | 0.00         |
| 43.00        | 2.24             | 0.03            | 0.00         | 96.00        | 2.24             | 0.03            | 0.00         |
| 44.00        | 2.24             | 0.03            | 0.00         | 97.00        | 2.24             | 0.03            | 0.00         |
| 45.00        | 2.24             | 0.03            | 0.00         | 98.00        | 2.24             | 0.03            | 0.00         |
| 46.00        | 2.24             | 0.03            | 0.00         | 99.00        | 2.24             | 0.03            | 0.00         |
| 47.00        | 2.24             | 0.03            | 0.00         | 100.00       | 2.24             | 0.03            | 0.00         |
| 48.00        | 2.24             | 0.03            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.03            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.03            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.03            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.03            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment 2aS: Subcat 2a**

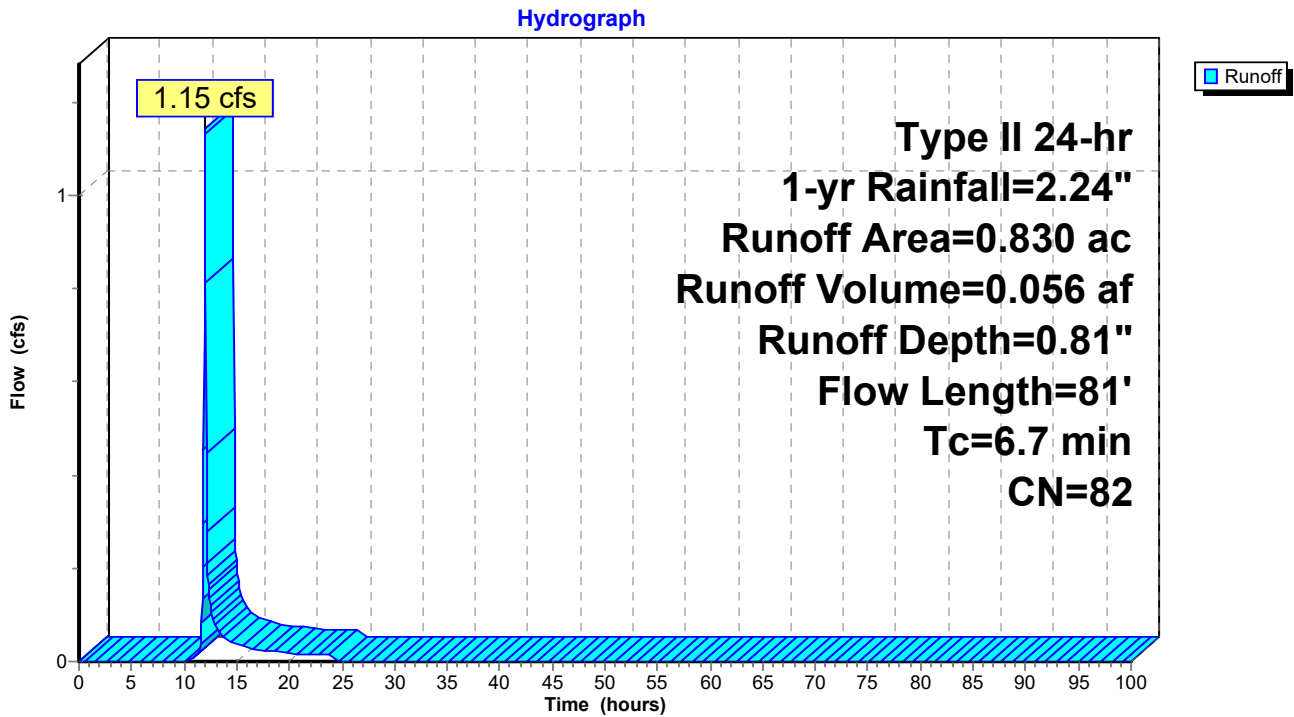
Runoff = 1.15 cfs @ 11.99 hrs, Volume= 0.056 af, Depth= 0.81"  
 Routed to Reach 2R : Proposed RRv Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.480     | 78 | Meadow, non-grazed, HSG D     |
| 0.002     | 71 | Meadow, non-grazed, HSG C     |
| * 0.002   | 98 | Paved parking, HSG D          |
| * 0.152   | 98 | Paved parking, HSG D          |
| 0.194     | 80 | >75% Grass cover, Good, HSG D |
| 0.830     | 82 | Weighted Average              |
| 0.676     |    | 81.45% Pervious Area          |
| 0.154     |    | 18.55% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.2      | 14            | 0.0460        | 1.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59" |
| 1.9      | 20            | 0.0460        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 3.3      | 32            | 0.0310        | 0.16              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 1.3      | 15            | 0.0670        | 0.19              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 6.7      | 81            | Total         |                   |                |   |

Subcatchment 2aS: Subcat 2a



**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.81            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.81            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.81            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.81            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.81            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.81            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.81            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.81            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.81            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.81            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.81            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.01         | 64.00        | 2.24             | 0.81            | 0.00         |
| 12.00        | 1.49             | 0.34            | <b>1.13</b>  | 65.00        | 2.24             | 0.81            | 0.00         |
| 13.00        | 1.73             | 0.48            | 0.07         | 66.00        | 2.24             | 0.81            | 0.00         |
| 14.00        | 1.84             | 0.54            | 0.05         | 67.00        | 2.24             | 0.81            | 0.00         |
| 15.00        | 1.91             | 0.59            | 0.04         | 68.00        | 2.24             | 0.81            | 0.00         |
| 16.00        | 1.97             | 0.63            | 0.03         | 69.00        | 2.24             | 0.81            | 0.00         |
| 17.00        | 2.02             | 0.66            | 0.03         | 70.00        | 2.24             | 0.81            | 0.00         |
| 18.00        | 2.06             | 0.69            | 0.02         | 71.00        | 2.24             | 0.81            | 0.00         |
| 19.00        | 2.10             | 0.72            | 0.02         | 72.00        | 2.24             | 0.81            | 0.00         |
| 20.00        | 2.13             | 0.74            | 0.02         | 73.00        | 2.24             | 0.81            | 0.00         |
| 21.00        | 2.16             | 0.76            | 0.02         | 74.00        | 2.24             | 0.81            | 0.00         |
| 22.00        | 2.19             | 0.78            | 0.02         | 75.00        | 2.24             | 0.81            | 0.00         |
| 23.00        | 2.21             | 0.79            | 0.02         | 76.00        | 2.24             | 0.81            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.81</b>     | 0.01         | 77.00        | 2.24             | 0.81            | 0.00         |
| 25.00        | 2.24             | 0.81            | 0.00         | 78.00        | 2.24             | 0.81            | 0.00         |
| 26.00        | 2.24             | 0.81            | 0.00         | 79.00        | 2.24             | 0.81            | 0.00         |
| 27.00        | 2.24             | 0.81            | 0.00         | 80.00        | 2.24             | 0.81            | 0.00         |
| 28.00        | 2.24             | 0.81            | 0.00         | 81.00        | 2.24             | 0.81            | 0.00         |
| 29.00        | 2.24             | 0.81            | 0.00         | 82.00        | 2.24             | 0.81            | 0.00         |
| 30.00        | 2.24             | 0.81            | 0.00         | 83.00        | 2.24             | 0.81            | 0.00         |
| 31.00        | 2.24             | 0.81            | 0.00         | 84.00        | 2.24             | 0.81            | 0.00         |
| 32.00        | 2.24             | 0.81            | 0.00         | 85.00        | 2.24             | 0.81            | 0.00         |
| 33.00        | 2.24             | 0.81            | 0.00         | 86.00        | 2.24             | 0.81            | 0.00         |
| 34.00        | 2.24             | 0.81            | 0.00         | 87.00        | 2.24             | 0.81            | 0.00         |
| 35.00        | 2.24             | 0.81            | 0.00         | 88.00        | 2.24             | 0.81            | 0.00         |
| 36.00        | 2.24             | 0.81            | 0.00         | 89.00        | 2.24             | 0.81            | 0.00         |
| 37.00        | 2.24             | 0.81            | 0.00         | 90.00        | 2.24             | 0.81            | 0.00         |
| 38.00        | 2.24             | 0.81            | 0.00         | 91.00        | 2.24             | 0.81            | 0.00         |
| 39.00        | 2.24             | 0.81            | 0.00         | 92.00        | 2.24             | 0.81            | 0.00         |
| 40.00        | 2.24             | 0.81            | 0.00         | 93.00        | 2.24             | 0.81            | 0.00         |
| 41.00        | 2.24             | 0.81            | 0.00         | 94.00        | 2.24             | 0.81            | 0.00         |
| 42.00        | 2.24             | 0.81            | 0.00         | 95.00        | 2.24             | 0.81            | 0.00         |
| 43.00        | 2.24             | 0.81            | 0.00         | 96.00        | 2.24             | 0.81            | 0.00         |
| 44.00        | 2.24             | 0.81            | 0.00         | 97.00        | 2.24             | 0.81            | 0.00         |
| 45.00        | 2.24             | 0.81            | 0.00         | 98.00        | 2.24             | 0.81            | 0.00         |
| 46.00        | 2.24             | 0.81            | 0.00         | 99.00        | 2.24             | 0.81            | 0.00         |
| 47.00        | 2.24             | 0.81            | 0.00         | 100.00       | 2.24             | 0.81            | 0.00         |
| 48.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2bS: Subcat 2a**

Runoff = 0.20 cfs @ 11.98 hrs, Volume= 0.010 af, Depth= 0.62"  
 Routed to Reach 1R : Existing Swale

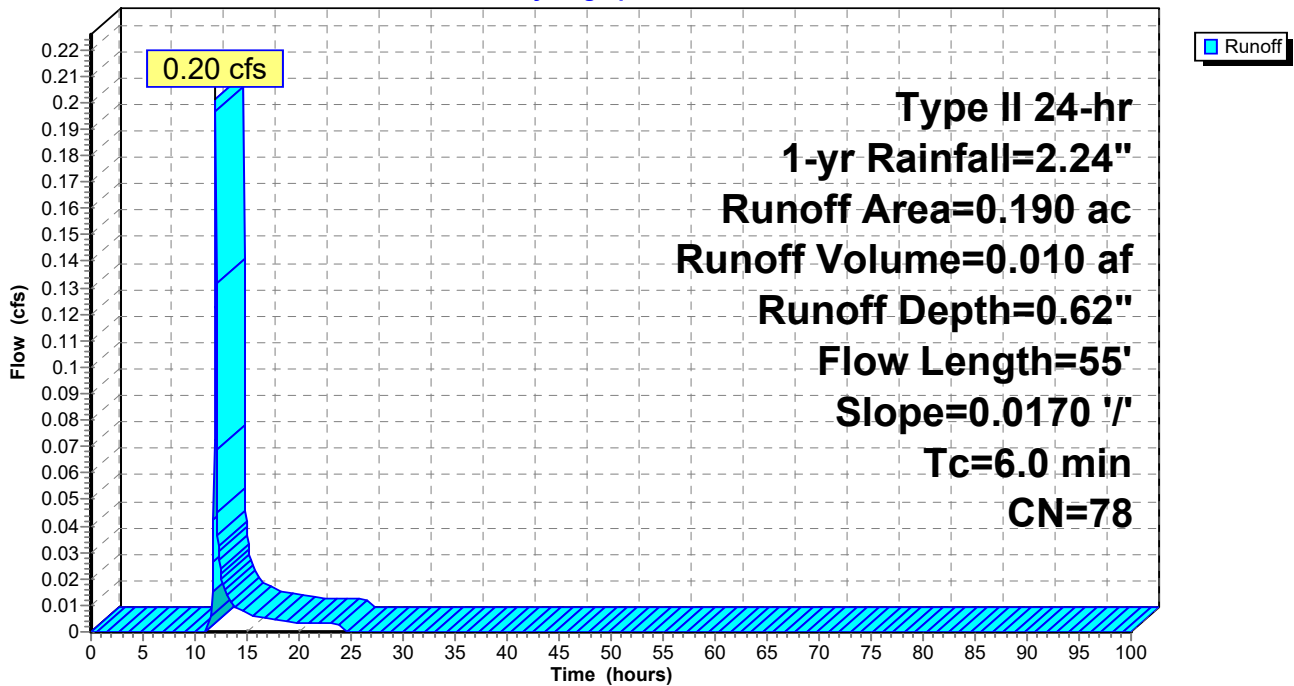
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.188     | 78 | Meadow, non-grazed, HSG D |
| 0.002     | 71 | Meadow, non-grazed, HSG C |
| 0.190     | 78 | Weighted Average          |
| 0.190     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|--|-------------------|----------------|--|
| 1.0      | 55            | 0.0170                                   | 0.91              |                | Shallow Concentrated Flow, Hydro Flow<br>Short Grass Pasture Kv= 7.0 fps |
| 1.0      | 55            | Total, Increased to minimum Tc = 6.0 min |                   |                |  |

**Subcatchment 2bS: Subcat 2a**

Hydrograph



**Hydrograph for Subcatchment 2bS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.62            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.62            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.62            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.62            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.62            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.62            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.62            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.62            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.62            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.62            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.62            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.62            | 0.00         |
| 12.00        | 1.49             | 0.23            | <b>0.20</b>  | 65.00        | 2.24             | 0.62            | 0.00         |
| 13.00        | 1.73             | 0.34            | 0.01         | 66.00        | 2.24             | 0.62            | 0.00         |
| 14.00        | 1.84             | 0.40            | 0.01         | 67.00        | 2.24             | 0.62            | 0.00         |
| 15.00        | 1.91             | 0.44            | 0.01         | 68.00        | 2.24             | 0.62            | 0.00         |
| 16.00        | 1.97             | 0.47            | 0.01         | 69.00        | 2.24             | 0.62            | 0.00         |
| 17.00        | 2.02             | 0.50            | 0.01         | 70.00        | 2.24             | 0.62            | 0.00         |
| 18.00        | 2.06             | 0.52            | 0.00         | 71.00        | 2.24             | 0.62            | 0.00         |
| 19.00        | 2.10             | 0.54            | 0.00         | 72.00        | 2.24             | 0.62            | 0.00         |
| 20.00        | 2.13             | 0.56            | 0.00         | 73.00        | 2.24             | 0.62            | 0.00         |
| 21.00        | 2.16             | 0.58            | 0.00         | 74.00        | 2.24             | 0.62            | 0.00         |
| 22.00        | 2.19             | 0.59            | 0.00         | 75.00        | 2.24             | 0.62            | 0.00         |
| 23.00        | 2.21             | 0.61            | 0.00         | 76.00        | 2.24             | 0.62            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.62</b>     | 0.00         | 77.00        | 2.24             | 0.62            | 0.00         |
| 25.00        | 2.24             | 0.62            | 0.00         | 78.00        | 2.24             | 0.62            | 0.00         |
| 26.00        | 2.24             | 0.62            | 0.00         | 79.00        | 2.24             | 0.62            | 0.00         |
| 27.00        | 2.24             | 0.62            | 0.00         | 80.00        | 2.24             | 0.62            | 0.00         |
| 28.00        | 2.24             | 0.62            | 0.00         | 81.00        | 2.24             | 0.62            | 0.00         |
| 29.00        | 2.24             | 0.62            | 0.00         | 82.00        | 2.24             | 0.62            | 0.00         |
| 30.00        | 2.24             | 0.62            | 0.00         | 83.00        | 2.24             | 0.62            | 0.00         |
| 31.00        | 2.24             | 0.62            | 0.00         | 84.00        | 2.24             | 0.62            | 0.00         |
| 32.00        | 2.24             | 0.62            | 0.00         | 85.00        | 2.24             | 0.62            | 0.00         |
| 33.00        | 2.24             | 0.62            | 0.00         | 86.00        | 2.24             | 0.62            | 0.00         |
| 34.00        | 2.24             | 0.62            | 0.00         | 87.00        | 2.24             | 0.62            | 0.00         |
| 35.00        | 2.24             | 0.62            | 0.00         | 88.00        | 2.24             | 0.62            | 0.00         |
| 36.00        | 2.24             | 0.62            | 0.00         | 89.00        | 2.24             | 0.62            | 0.00         |
| 37.00        | 2.24             | 0.62            | 0.00         | 90.00        | 2.24             | 0.62            | 0.00         |
| 38.00        | 2.24             | 0.62            | 0.00         | 91.00        | 2.24             | 0.62            | 0.00         |
| 39.00        | 2.24             | 0.62            | 0.00         | 92.00        | 2.24             | 0.62            | 0.00         |
| 40.00        | 2.24             | 0.62            | 0.00         | 93.00        | 2.24             | 0.62            | 0.00         |
| 41.00        | 2.24             | 0.62            | 0.00         | 94.00        | 2.24             | 0.62            | 0.00         |
| 42.00        | 2.24             | 0.62            | 0.00         | 95.00        | 2.24             | 0.62            | 0.00         |
| 43.00        | 2.24             | 0.62            | 0.00         | 96.00        | 2.24             | 0.62            | 0.00         |
| 44.00        | 2.24             | 0.62            | 0.00         | 97.00        | 2.24             | 0.62            | 0.00         |
| 45.00        | 2.24             | 0.62            | 0.00         | 98.00        | 2.24             | 0.62            | 0.00         |
| 46.00        | 2.24             | 0.62            | 0.00         | 99.00        | 2.24             | 0.62            | 0.00         |
| 47.00        | 2.24             | 0.62            | 0.00         | 100.00       | 2.24             | 0.62            | 0.00         |
| 48.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.62            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2cS: Subcat 2c**

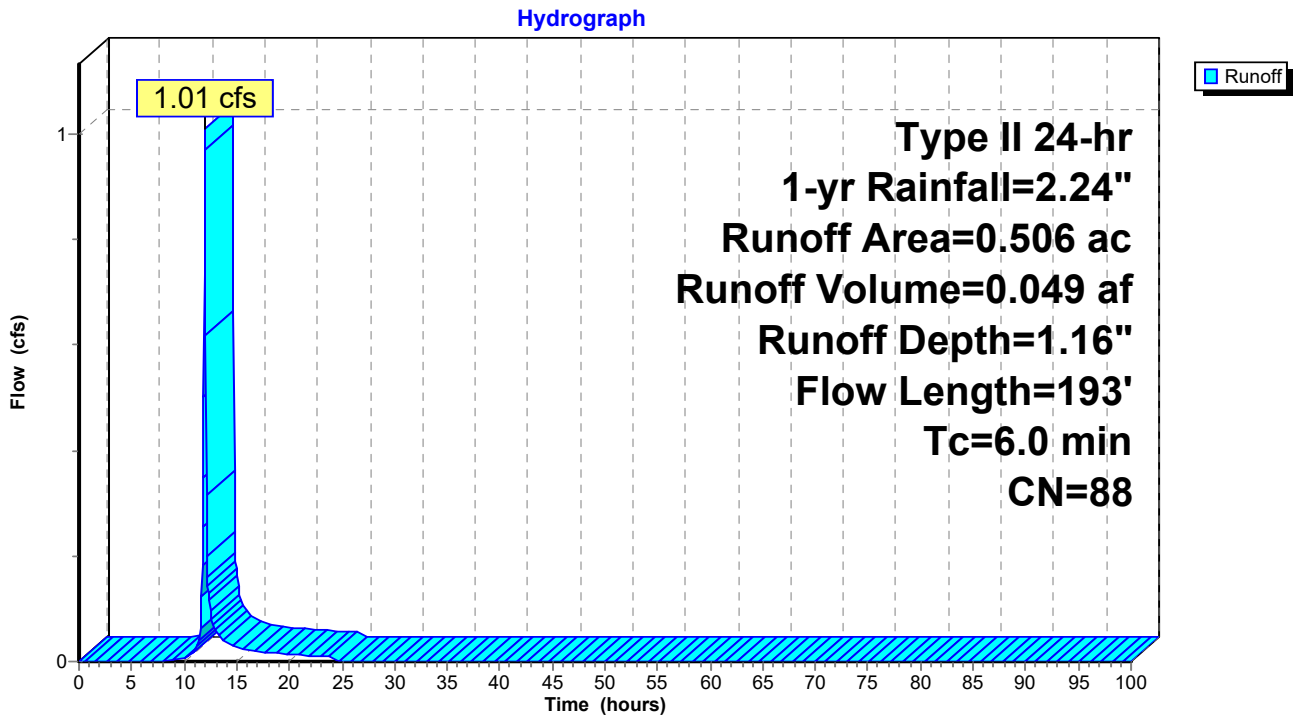
Runoff = 1.01 cfs @ 11.97 hrs, Volume= 0.049 af, Depth= 1.16"  
 Routed to Reach 3R : Proposed RRv Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.143     | 78 | Meadow, non-grazed, HSG D     |
| 0.030     | 71 | Meadow, non-grazed, HSG C     |
| * 0.023   | 89 | Gravel surface, HSG D         |
| * 0.056   | 98 | Paved parking, HSGD           |
| * 0.023   | 98 | Roofs, HSG D                  |
| * 0.113   | 98 | Paved parking, HSG D          |
| 0.070     | 80 | >75% Grass cover, Good, HSG D |
| 0.048     | 98 | Water Surface, HSG D          |
| 0.506     | 88 | Weighted Average              |
| 0.266     |    | 52.57% Pervious Area          |
| 0.240     |    | 47.43% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 0.7      | 45            | 0.0200                                   | 1.05              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.6      | 36            | 0.0200                                   | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 2.9      | 19            | 0.0200                                   | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.1      | 6             | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.0      | 6             | 0.0200                                   | 2.87              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.5      | 43            | 0.0470                                   | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 5.4      | 193           | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

Subcatchment 2cS: Subcat 2c



**1096 Proposed Stormwater Conditions Final D Soils Far Type II 24-hr 1-yr Rainfall=2.24"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2cS: Subcat 2c**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 1.16            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 1.16            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 1.16            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 1.16            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 1.16            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 1.16            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 1.16            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 1.16            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 1.16            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 1.16            | 0.00         |
| 10.00        | 0.41             | 0.01            | 0.01         | 63.00        | 2.24             | 1.16            | 0.00         |
| 11.00        | 0.53             | 0.04            | <b>0.02</b>  | 64.00        | 2.24             | 1.16            | 0.00         |
| 12.00        | 1.49             | 0.57            | <b>0.97</b>  | 65.00        | 2.24             | 1.16            | 0.00         |
| 13.00        | 1.73             | 0.75            | 0.06         | 66.00        | 2.24             | 1.16            | 0.00         |
| 14.00        | 1.84             | 0.84            | 0.03         | 67.00        | 2.24             | 1.16            | 0.00         |
| 15.00        | 1.91             | 0.89            | 0.03         | 68.00        | 2.24             | 1.16            | 0.00         |
| 16.00        | 1.97             | 0.94            | 0.02         | 69.00        | 2.24             | 1.16            | 0.00         |
| 17.00        | 2.02             | 0.98            | 0.02         | 70.00        | 2.24             | 1.16            | 0.00         |
| 18.00        | 2.06             | 1.02            | 0.02         | 71.00        | 2.24             | 1.16            | 0.00         |
| 19.00        | 2.10             | 1.05            | 0.01         | 72.00        | 2.24             | 1.16            | 0.00         |
| 20.00        | 2.13             | 1.07            | 0.01         | 73.00        | 2.24             | 1.16            | 0.00         |
| 21.00        | 2.16             | 1.10            | 0.01         | 74.00        | 2.24             | 1.16            | 0.00         |
| 22.00        | 2.19             | 1.12            | 0.01         | 75.00        | 2.24             | 1.16            | 0.00         |
| 23.00        | 2.21             | 1.14            | 0.01         | 76.00        | 2.24             | 1.16            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>1.16</b>     | 0.01         | 77.00        | 2.24             | 1.16            | 0.00         |
| 25.00        | 2.24             | 1.16            | 0.00         | 78.00        | 2.24             | 1.16            | 0.00         |
| 26.00        | 2.24             | 1.16            | 0.00         | 79.00        | 2.24             | 1.16            | 0.00         |
| 27.00        | 2.24             | 1.16            | 0.00         | 80.00        | 2.24             | 1.16            | 0.00         |
| 28.00        | 2.24             | 1.16            | 0.00         | 81.00        | 2.24             | 1.16            | 0.00         |
| 29.00        | 2.24             | 1.16            | 0.00         | 82.00        | 2.24             | 1.16            | 0.00         |
| 30.00        | 2.24             | 1.16            | 0.00         | 83.00        | 2.24             | 1.16            | 0.00         |
| 31.00        | 2.24             | 1.16            | 0.00         | 84.00        | 2.24             | 1.16            | 0.00         |
| 32.00        | 2.24             | 1.16            | 0.00         | 85.00        | 2.24             | 1.16            | 0.00         |
| 33.00        | 2.24             | 1.16            | 0.00         | 86.00        | 2.24             | 1.16            | 0.00         |
| 34.00        | 2.24             | 1.16            | 0.00         | 87.00        | 2.24             | 1.16            | 0.00         |
| 35.00        | 2.24             | 1.16            | 0.00         | 88.00        | 2.24             | 1.16            | 0.00         |
| 36.00        | 2.24             | 1.16            | 0.00         | 89.00        | 2.24             | 1.16            | 0.00         |
| 37.00        | 2.24             | 1.16            | 0.00         | 90.00        | 2.24             | 1.16            | 0.00         |
| 38.00        | 2.24             | 1.16            | 0.00         | 91.00        | 2.24             | 1.16            | 0.00         |
| 39.00        | 2.24             | 1.16            | 0.00         | 92.00        | 2.24             | 1.16            | 0.00         |
| 40.00        | 2.24             | 1.16            | 0.00         | 93.00        | 2.24             | 1.16            | 0.00         |
| 41.00        | 2.24             | 1.16            | 0.00         | 94.00        | 2.24             | 1.16            | 0.00         |
| 42.00        | 2.24             | 1.16            | 0.00         | 95.00        | 2.24             | 1.16            | 0.00         |
| 43.00        | 2.24             | 1.16            | 0.00         | 96.00        | 2.24             | 1.16            | 0.00         |
| 44.00        | 2.24             | 1.16            | 0.00         | 97.00        | 2.24             | 1.16            | 0.00         |
| 45.00        | 2.24             | 1.16            | 0.00         | 98.00        | 2.24             | 1.16            | 0.00         |
| 46.00        | 2.24             | 1.16            | 0.00         | 99.00        | 2.24             | 1.16            | 0.00         |
| 47.00        | 2.24             | 1.16            | 0.00         | 100.00       | 2.24             | 1.16            | 0.00         |
| 48.00        | 2.24             | 1.16            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 1.16            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 1.16            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 1.16            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 1.16            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment 2dS: Subcat 2d**

Runoff = 0.57 cfs @ 11.99 hrs, Volume= 0.029 af, Depth= 0.81"  
 Routed to Pond 2ST : Existing Sediment Trap

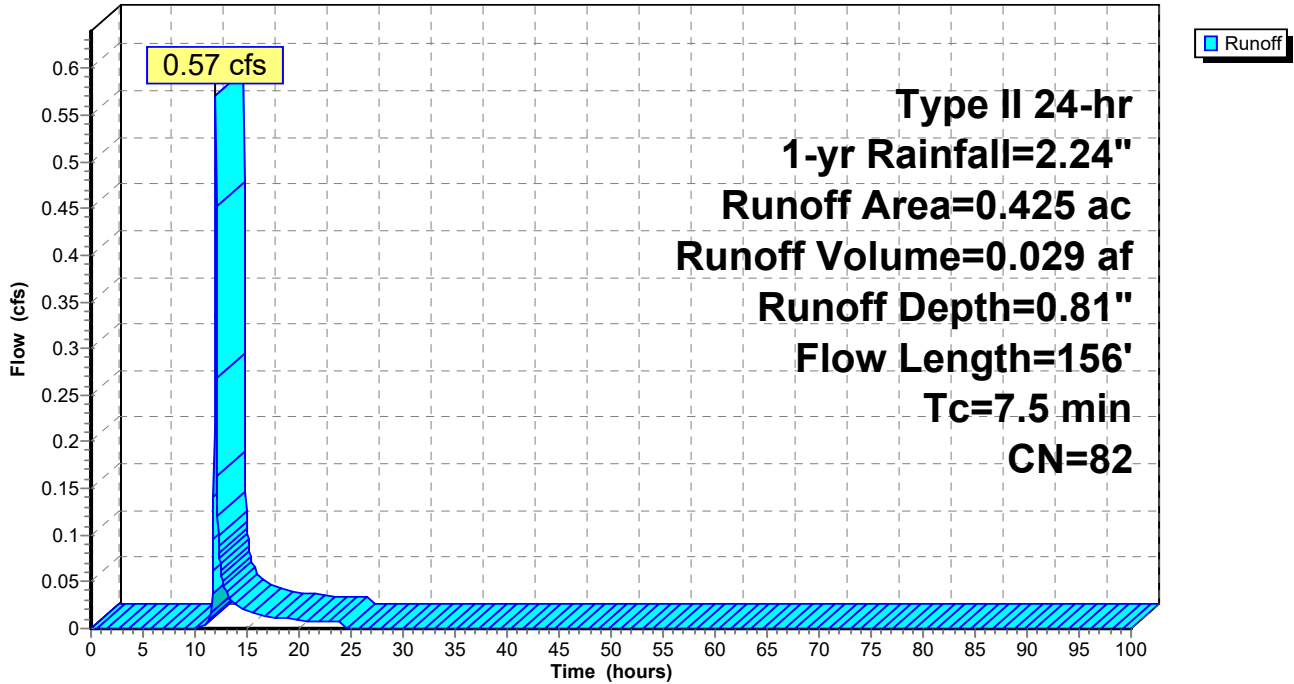
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.089     | 78 | Meadow, non-grazed, HSG D |
| 0.160     | 71 | Meadow, non-grazed, HSG C |
| * 0.013   | 98 | Water Surface, HSG D      |
| 0.106     | 98 | Water Surface, HSG C      |
| * 0.017   | 89 | Gravel surface, HSG D     |
| * 0.040   | 89 | Gravel surface, HSG C     |
| 0.425     | 82 | Weighted Average          |
| 0.306     |    | 72.00% Pervious Area      |
| 0.119     |    | 28.00% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 7.0      | 91            | 0.0380        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.1      | 8             | 0.0420        | 1.00              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.1      | 14            | 0.0420        | 3.30              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.2      | 29            | 0.0290        | 2.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.5      | 156           | Total         |                   |                |   |

Subcatchment 2dS: Subcat 2d

Hydrograph



**Hydrograph for Subcatchment 2dS: Subcat 2d**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.81            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.81            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.81            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.81            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.81            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.81            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.81            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.81            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.81            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.81            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.81            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.81            | 0.00         |
| 12.00        | 1.49             | 0.34            | <b>0.57</b>  | 65.00        | 2.24             | 0.81            | 0.00         |
| 13.00        | 1.73             | 0.48            | 0.04         | 66.00        | 2.24             | 0.81            | 0.00         |
| 14.00        | 1.84             | 0.54            | 0.02         | 67.00        | 2.24             | 0.81            | 0.00         |
| 15.00        | 1.91             | 0.59            | 0.02         | 68.00        | 2.24             | 0.81            | 0.00         |
| 16.00        | 1.97             | 0.63            | 0.01         | 69.00        | 2.24             | 0.81            | 0.00         |
| 17.00        | 2.02             | 0.66            | 0.01         | 70.00        | 2.24             | 0.81            | 0.00         |
| 18.00        | 2.06             | 0.69            | 0.01         | 71.00        | 2.24             | 0.81            | 0.00         |
| 19.00        | 2.10             | 0.72            | 0.01         | 72.00        | 2.24             | 0.81            | 0.00         |
| 20.00        | 2.13             | 0.74            | 0.01         | 73.00        | 2.24             | 0.81            | 0.00         |
| 21.00        | 2.16             | 0.76            | 0.01         | 74.00        | 2.24             | 0.81            | 0.00         |
| 22.00        | 2.19             | 0.78            | 0.01         | 75.00        | 2.24             | 0.81            | 0.00         |
| 23.00        | 2.21             | 0.79            | 0.01         | 76.00        | 2.24             | 0.81            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.81</b>     | 0.01         | 77.00        | 2.24             | 0.81            | 0.00         |
| 25.00        | 2.24             | 0.81            | 0.00         | 78.00        | 2.24             | 0.81            | 0.00         |
| 26.00        | 2.24             | 0.81            | 0.00         | 79.00        | 2.24             | 0.81            | 0.00         |
| 27.00        | 2.24             | 0.81            | 0.00         | 80.00        | 2.24             | 0.81            | 0.00         |
| 28.00        | 2.24             | 0.81            | 0.00         | 81.00        | 2.24             | 0.81            | 0.00         |
| 29.00        | 2.24             | 0.81            | 0.00         | 82.00        | 2.24             | 0.81            | 0.00         |
| 30.00        | 2.24             | 0.81            | 0.00         | 83.00        | 2.24             | 0.81            | 0.00         |
| 31.00        | 2.24             | 0.81            | 0.00         | 84.00        | 2.24             | 0.81            | 0.00         |
| 32.00        | 2.24             | 0.81            | 0.00         | 85.00        | 2.24             | 0.81            | 0.00         |
| 33.00        | 2.24             | 0.81            | 0.00         | 86.00        | 2.24             | 0.81            | 0.00         |
| 34.00        | 2.24             | 0.81            | 0.00         | 87.00        | 2.24             | 0.81            | 0.00         |
| 35.00        | 2.24             | 0.81            | 0.00         | 88.00        | 2.24             | 0.81            | 0.00         |
| 36.00        | 2.24             | 0.81            | 0.00         | 89.00        | 2.24             | 0.81            | 0.00         |
| 37.00        | 2.24             | 0.81            | 0.00         | 90.00        | 2.24             | 0.81            | 0.00         |
| 38.00        | 2.24             | 0.81            | 0.00         | 91.00        | 2.24             | 0.81            | 0.00         |
| 39.00        | 2.24             | 0.81            | 0.00         | 92.00        | 2.24             | 0.81            | 0.00         |
| 40.00        | 2.24             | 0.81            | 0.00         | 93.00        | 2.24             | 0.81            | 0.00         |
| 41.00        | 2.24             | 0.81            | 0.00         | 94.00        | 2.24             | 0.81            | 0.00         |
| 42.00        | 2.24             | 0.81            | 0.00         | 95.00        | 2.24             | 0.81            | 0.00         |
| 43.00        | 2.24             | 0.81            | 0.00         | 96.00        | 2.24             | 0.81            | 0.00         |
| 44.00        | 2.24             | 0.81            | 0.00         | 97.00        | 2.24             | 0.81            | 0.00         |
| 45.00        | 2.24             | 0.81            | 0.00         | 98.00        | 2.24             | 0.81            | 0.00         |
| 46.00        | 2.24             | 0.81            | 0.00         | 99.00        | 2.24             | 0.81            | 0.00         |
| 47.00        | 2.24             | 0.81            | 0.00         | 100.00       | 2.24             | 0.81            | 0.00         |
| 48.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.81            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2eS: Subcat 2e**

Runoff = 0.34 cfs @ 12.00 hrs, Volume= 0.017 af, Depth= 0.86"  
 Routed to Reach 5R : Proposed RRv Swale

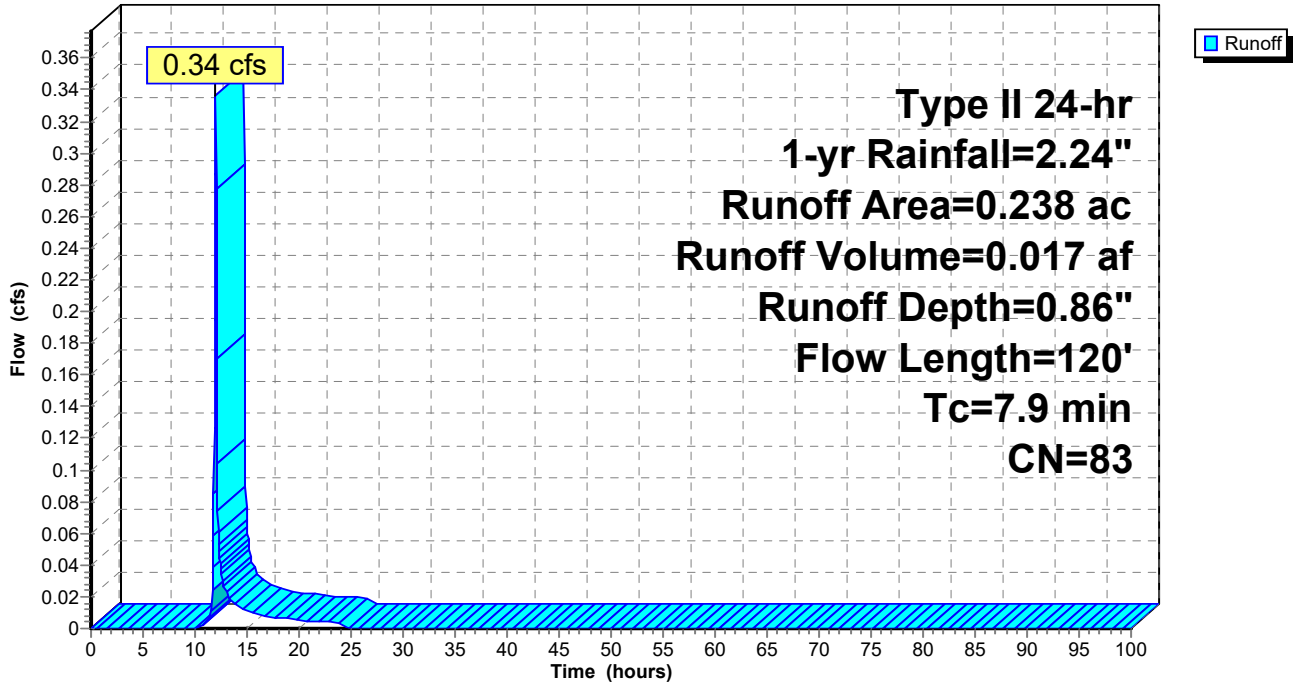
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.175     | 78 | Meadow, non-grazed, HSG D |
| * 0.063   | 98 | Paved parking, HSG D      |
| 0.238     | 83 | Weighted Average          |
| 0.175     |    | 73.53% Pervious Area      |
| 0.063     |    | 26.47% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 2.3      | 17            | 0.0286        | 0.12              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.9      | 11            | 0.0201        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.4      | 25            | 0.0200        | 0.94              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.9      | 52            | 0.0192        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 15            | 0.0194        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 7.9      | 120           | Total         |                   |                |   |

Subcatchment 2eS: Subcat 2e

Hydrograph



**Hydrograph for Subcatchment 2eS: Subcat 2e**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.86            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.86            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.86            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.86            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.86            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.86            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.86            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.86            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.86            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.86            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.86            | 0.00         |
| 11.00        | 0.53             | 0.01            | 0.00         | 64.00        | 2.24             | 0.86            | 0.00         |
| 12.00        | 1.49             | 0.37            | <b>0.34</b>  | 65.00        | 2.24             | 0.86            | 0.00         |
| 13.00        | 1.73             | 0.52            | 0.02         | 66.00        | 2.24             | 0.86            | 0.00         |
| 14.00        | 1.84             | 0.59            | 0.01         | 67.00        | 2.24             | 0.86            | 0.00         |
| 15.00        | 1.91             | 0.64            | 0.01         | 68.00        | 2.24             | 0.86            | 0.00         |
| 16.00        | 1.97             | 0.68            | 0.01         | 69.00        | 2.24             | 0.86            | 0.00         |
| 17.00        | 2.02             | 0.71            | 0.01         | 70.00        | 2.24             | 0.86            | 0.00         |
| 18.00        | 2.06             | 0.74            | 0.01         | 71.00        | 2.24             | 0.86            | 0.00         |
| 19.00        | 2.10             | 0.76            | 0.01         | 72.00        | 2.24             | 0.86            | 0.00         |
| 20.00        | 2.13             | 0.79            | 0.01         | 73.00        | 2.24             | 0.86            | 0.00         |
| 21.00        | 2.16             | 0.81            | 0.00         | 74.00        | 2.24             | 0.86            | 0.00         |
| 22.00        | 2.19             | 0.83            | 0.00         | 75.00        | 2.24             | 0.86            | 0.00         |
| 23.00        | 2.21             | 0.85            | 0.00         | 76.00        | 2.24             | 0.86            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.86</b>     | 0.00         | 77.00        | 2.24             | 0.86            | 0.00         |
| 25.00        | 2.24             | 0.86            | 0.00         | 78.00        | 2.24             | 0.86            | 0.00         |
| 26.00        | 2.24             | 0.86            | 0.00         | 79.00        | 2.24             | 0.86            | 0.00         |
| 27.00        | 2.24             | 0.86            | 0.00         | 80.00        | 2.24             | 0.86            | 0.00         |
| 28.00        | 2.24             | 0.86            | 0.00         | 81.00        | 2.24             | 0.86            | 0.00         |
| 29.00        | 2.24             | 0.86            | 0.00         | 82.00        | 2.24             | 0.86            | 0.00         |
| 30.00        | 2.24             | 0.86            | 0.00         | 83.00        | 2.24             | 0.86            | 0.00         |
| 31.00        | 2.24             | 0.86            | 0.00         | 84.00        | 2.24             | 0.86            | 0.00         |
| 32.00        | 2.24             | 0.86            | 0.00         | 85.00        | 2.24             | 0.86            | 0.00         |
| 33.00        | 2.24             | 0.86            | 0.00         | 86.00        | 2.24             | 0.86            | 0.00         |
| 34.00        | 2.24             | 0.86            | 0.00         | 87.00        | 2.24             | 0.86            | 0.00         |
| 35.00        | 2.24             | 0.86            | 0.00         | 88.00        | 2.24             | 0.86            | 0.00         |
| 36.00        | 2.24             | 0.86            | 0.00         | 89.00        | 2.24             | 0.86            | 0.00         |
| 37.00        | 2.24             | 0.86            | 0.00         | 90.00        | 2.24             | 0.86            | 0.00         |
| 38.00        | 2.24             | 0.86            | 0.00         | 91.00        | 2.24             | 0.86            | 0.00         |
| 39.00        | 2.24             | 0.86            | 0.00         | 92.00        | 2.24             | 0.86            | 0.00         |
| 40.00        | 2.24             | 0.86            | 0.00         | 93.00        | 2.24             | 0.86            | 0.00         |
| 41.00        | 2.24             | 0.86            | 0.00         | 94.00        | 2.24             | 0.86            | 0.00         |
| 42.00        | 2.24             | 0.86            | 0.00         | 95.00        | 2.24             | 0.86            | 0.00         |
| 43.00        | 2.24             | 0.86            | 0.00         | 96.00        | 2.24             | 0.86            | 0.00         |
| 44.00        | 2.24             | 0.86            | 0.00         | 97.00        | 2.24             | 0.86            | 0.00         |
| 45.00        | 2.24             | 0.86            | 0.00         | 98.00        | 2.24             | 0.86            | 0.00         |
| 46.00        | 2.24             | 0.86            | 0.00         | 99.00        | 2.24             | 0.86            | 0.00         |
| 47.00        | 2.24             | 0.86            | 0.00         | 100.00       | 2.24             | 0.86            | 0.00         |
| 48.00        | 2.24             | 0.86            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.86            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.86            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.86            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.86            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.04 cfs @ 11.98 hrs, Volume= 0.002 af, Depth= 0.76"  
 Routed to Link AP2 : Analysis Point 2

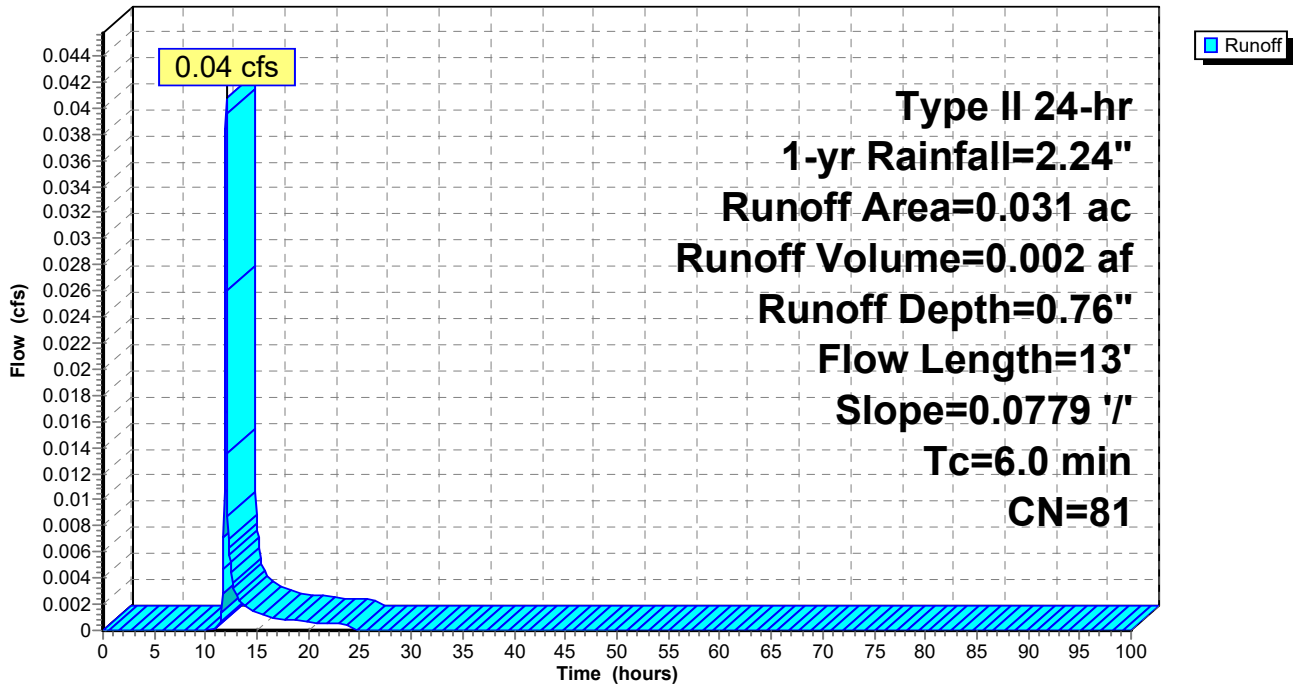
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.001     | 98 | Paved roads w/curbs & sewers, HSG D |
| 0.030     | 80 | >75% Grass cover, Good, HSG D       |
| 0.031     | 81 | Weighted Average                    |
| 0.030     |    | 96.77% Pervious Area                |
| 0.001     |    | 3.23% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.2      | 13            | 0.0779                                   | 0.18              |                | Sheet Flow, Hydro Flow<br>Grass: Short n= 0.150 P2= 2.59" |
| 1.2      | 13            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**Hydrograph for Subcatchment 3S: Subcat 3**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.76            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.76            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.76            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.76            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.76            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.76            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.76            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.76            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.76            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.76            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.76            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.76            | 0.00         |
| 12.00        | 1.49             | 0.31            | <b>0.04</b>  | 65.00        | 2.24             | 0.76            | 0.00         |
| 13.00        | 1.73             | 0.44            | 0.00         | 66.00        | 2.24             | 0.76            | 0.00         |
| 14.00        | 1.84             | 0.50            | 0.00         | 67.00        | 2.24             | 0.76            | 0.00         |
| 15.00        | 1.91             | 0.55            | 0.00         | 68.00        | 2.24             | 0.76            | 0.00         |
| 16.00        | 1.97             | 0.59            | 0.00         | 69.00        | 2.24             | 0.76            | 0.00         |
| 17.00        | 2.02             | 0.62            | 0.00         | 70.00        | 2.24             | 0.76            | 0.00         |
| 18.00        | 2.06             | 0.64            | 0.00         | 71.00        | 2.24             | 0.76            | 0.00         |
| 19.00        | 2.10             | 0.67            | 0.00         | 72.00        | 2.24             | 0.76            | 0.00         |
| 20.00        | 2.13             | 0.69            | 0.00         | 73.00        | 2.24             | 0.76            | 0.00         |
| 21.00        | 2.16             | 0.71            | 0.00         | 74.00        | 2.24             | 0.76            | 0.00         |
| 22.00        | 2.19             | 0.73            | 0.00         | 75.00        | 2.24             | 0.76            | 0.00         |
| 23.00        | 2.21             | 0.74            | 0.00         | 76.00        | 2.24             | 0.76            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.76</b>     | 0.00         | 77.00        | 2.24             | 0.76            | 0.00         |
| 25.00        | 2.24             | 0.76            | 0.00         | 78.00        | 2.24             | 0.76            | 0.00         |
| 26.00        | 2.24             | 0.76            | 0.00         | 79.00        | 2.24             | 0.76            | 0.00         |
| 27.00        | 2.24             | 0.76            | 0.00         | 80.00        | 2.24             | 0.76            | 0.00         |
| 28.00        | 2.24             | 0.76            | 0.00         | 81.00        | 2.24             | 0.76            | 0.00         |
| 29.00        | 2.24             | 0.76            | 0.00         | 82.00        | 2.24             | 0.76            | 0.00         |
| 30.00        | 2.24             | 0.76            | 0.00         | 83.00        | 2.24             | 0.76            | 0.00         |
| 31.00        | 2.24             | 0.76            | 0.00         | 84.00        | 2.24             | 0.76            | 0.00         |
| 32.00        | 2.24             | 0.76            | 0.00         | 85.00        | 2.24             | 0.76            | 0.00         |
| 33.00        | 2.24             | 0.76            | 0.00         | 86.00        | 2.24             | 0.76            | 0.00         |
| 34.00        | 2.24             | 0.76            | 0.00         | 87.00        | 2.24             | 0.76            | 0.00         |
| 35.00        | 2.24             | 0.76            | 0.00         | 88.00        | 2.24             | 0.76            | 0.00         |
| 36.00        | 2.24             | 0.76            | 0.00         | 89.00        | 2.24             | 0.76            | 0.00         |
| 37.00        | 2.24             | 0.76            | 0.00         | 90.00        | 2.24             | 0.76            | 0.00         |
| 38.00        | 2.24             | 0.76            | 0.00         | 91.00        | 2.24             | 0.76            | 0.00         |
| 39.00        | 2.24             | 0.76            | 0.00         | 92.00        | 2.24             | 0.76            | 0.00         |
| 40.00        | 2.24             | 0.76            | 0.00         | 93.00        | 2.24             | 0.76            | 0.00         |
| 41.00        | 2.24             | 0.76            | 0.00         | 94.00        | 2.24             | 0.76            | 0.00         |
| 42.00        | 2.24             | 0.76            | 0.00         | 95.00        | 2.24             | 0.76            | 0.00         |
| 43.00        | 2.24             | 0.76            | 0.00         | 96.00        | 2.24             | 0.76            | 0.00         |
| 44.00        | 2.24             | 0.76            | 0.00         | 97.00        | 2.24             | 0.76            | 0.00         |
| 45.00        | 2.24             | 0.76            | 0.00         | 98.00        | 2.24             | 0.76            | 0.00         |
| 46.00        | 2.24             | 0.76            | 0.00         | 99.00        | 2.24             | 0.76            | 0.00         |
| 47.00        | 2.24             | 0.76            | 0.00         | 100.00       | 2.24             | 0.76            | 0.00         |
| 48.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.76            | 0.00         |              |                  |                 |              |



**Summary for Reach 1R: Existing Swale**

Inflow Area = 3.372 ac, 8.66% Impervious, Inflow Depth = 0.04" for 1-yr event  
 Inflow = 0.20 cfs @ 11.98 hrs, Volume= 0.010 af  
 Outflow = 0.18 cfs @ 12.02 hrs, Volume= 0.010 af, Atten= 11%, Lag= 2.0 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.13 fps, Min. Travel Time= 3.6 min  
 Avg. Velocity = 0.36 fps, Avg. Travel Time= 11.1 min

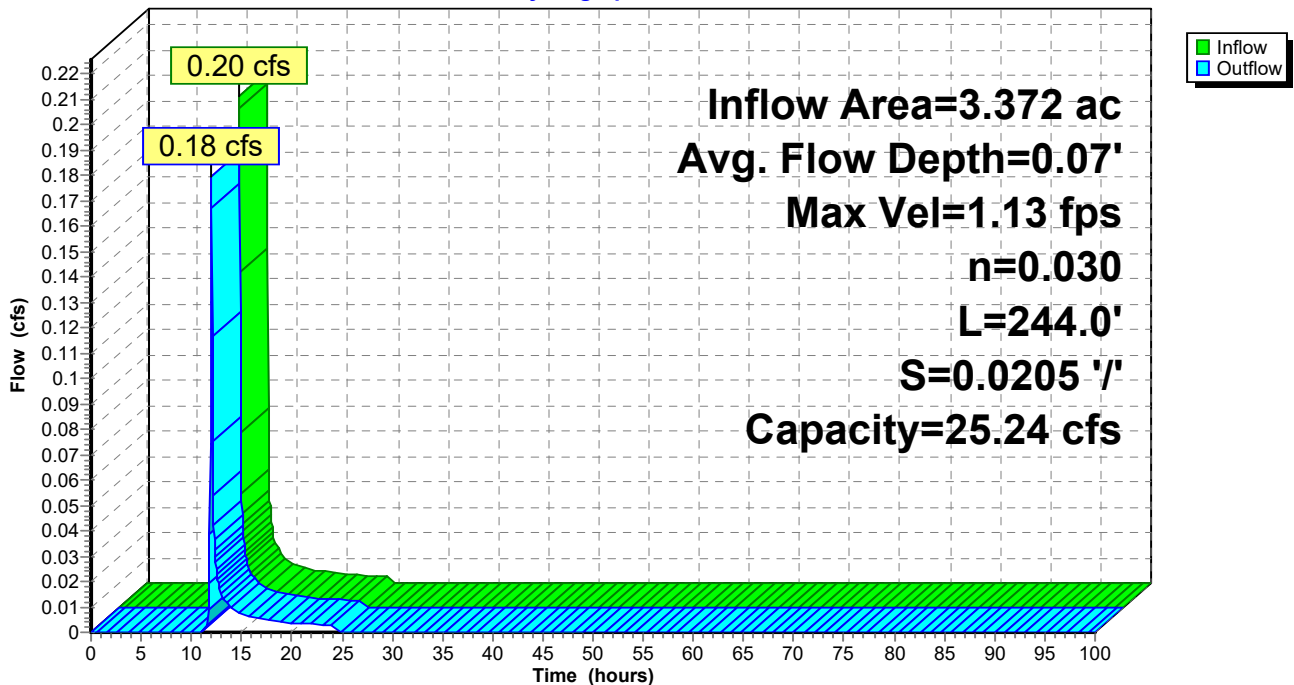
Peak Storage= 38 cf @ 12.02 hrs  
 Average Depth at Peak Storage= 0.07' , Surface Width= 2.43'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 ' / ' Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 ' / '  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

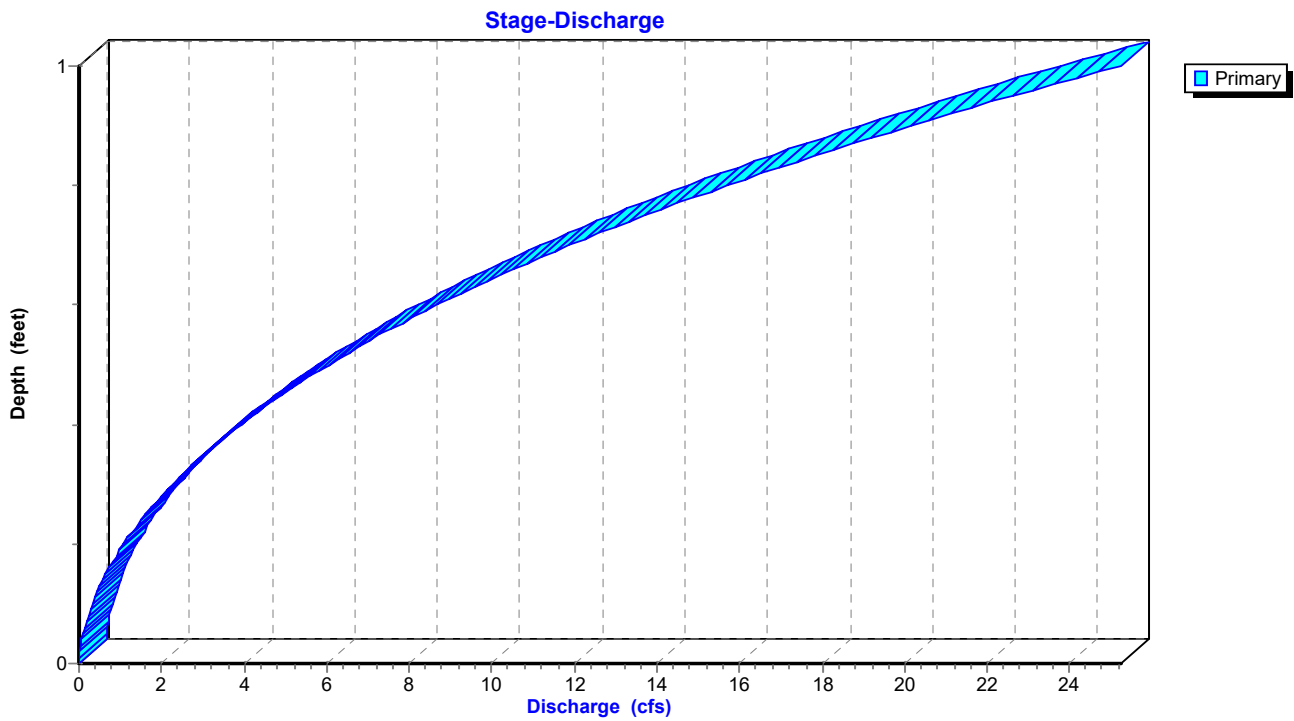


**Reach 1R: Existing Swale**

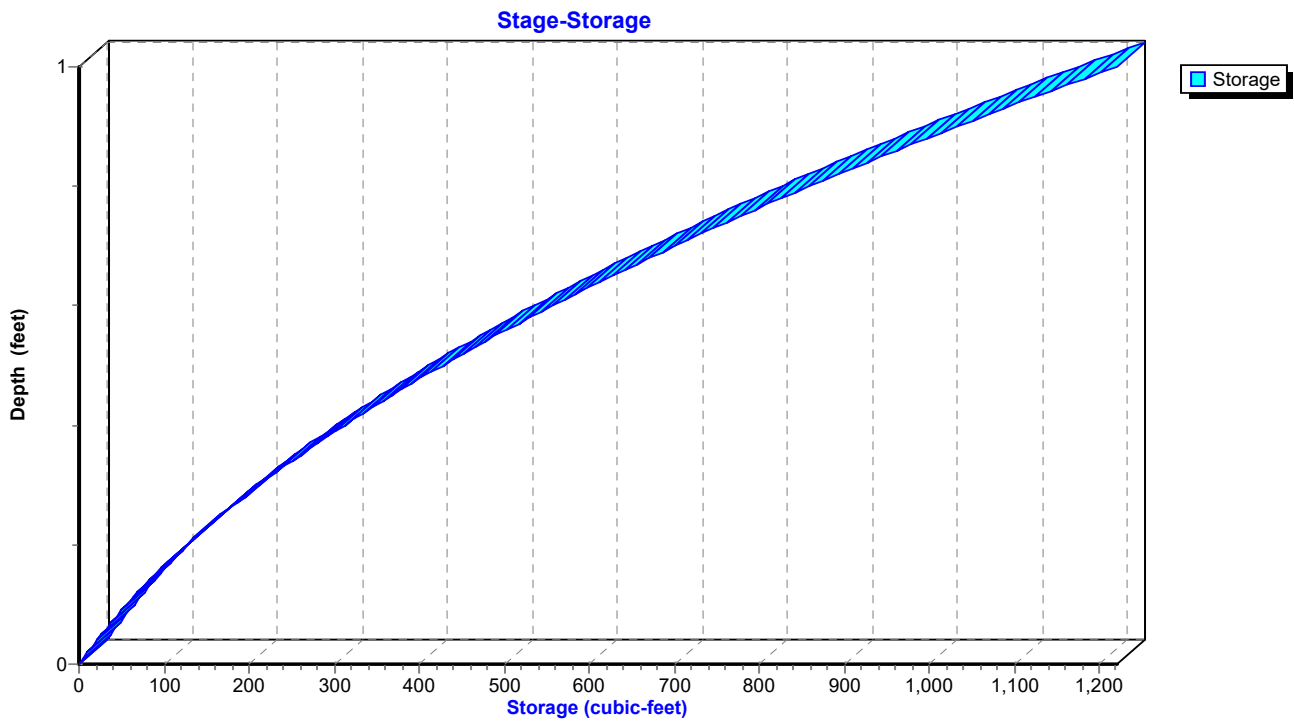
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>316.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.02</b>  | <b>11</b>            | <b>316.02</b>    | <b>0.03</b>   |
| 15.00        | 0.01         | 5                    | 316.01           | 0.01          |
| 17.50        | 0.00         | 4                    | 316.01           | 0.00          |
| 20.00        | 0.00         | 3                    | 316.01           | 0.00          |
| 22.50        | 0.00         | 2                    | 316.00           | 0.00          |
| 25.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Reach 2R: Proposed RRv Swale**

Inflow Area = 0.830 ac, 18.55% Impervious, Inflow Depth = 0.81" for 1-yr event  
 Inflow = 1.15 cfs @ 11.99 hrs, Volume= 0.056 af  
 Outflow = 0.86 cfs @ 12.05 hrs, Volume= 0.056 af, Atten= 25%, Lag= 3.7 min  
 Routed to Pond 3P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.89 fps, Min. Travel Time= 7.3 min  
 Avg. Velocity = 0.24 fps, Avg. Travel Time= 27.5 min

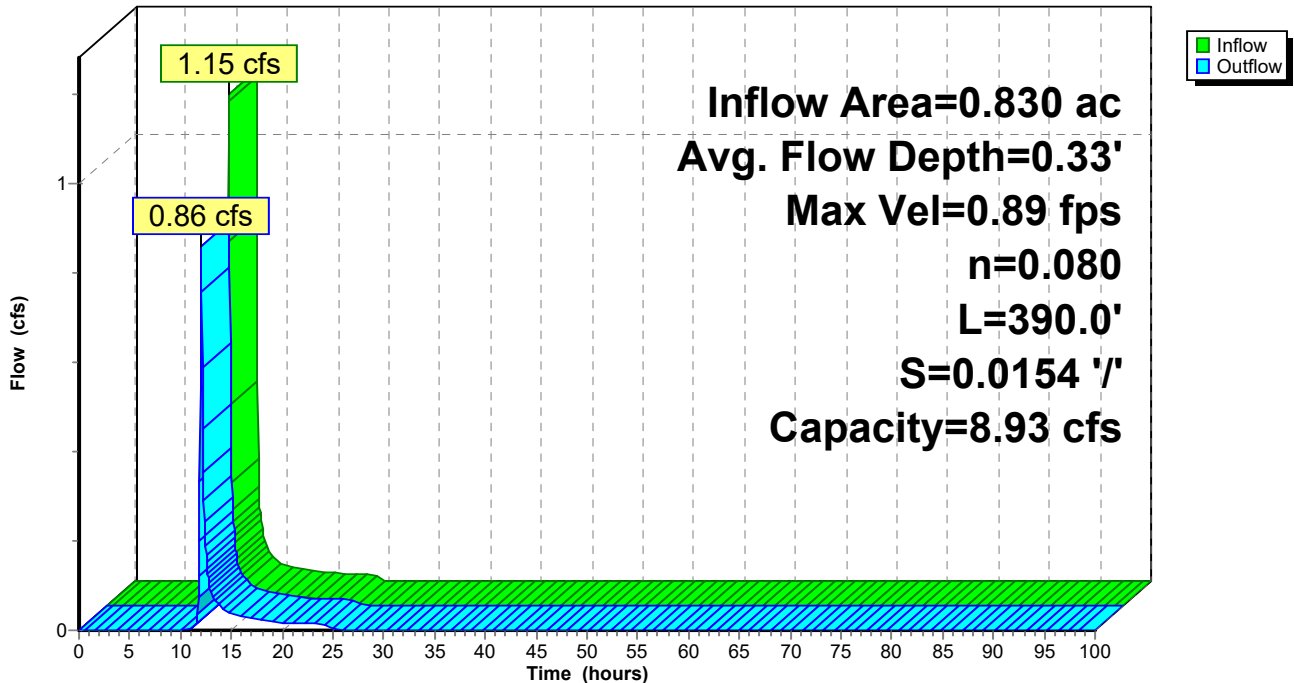
Peak Storage= 379 cf @ 12.05 hrs  
 Average Depth at Peak Storage= 0.33' , Surface Width= 3.96'  
 Bank-Full Depth= 1.04' Flow Area= 5.3 sf, Capacity= 8.93 cfs

2.00' x 1.04' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 8.24'  
 Length= 390.0' Slope= 0.0154 '/  
 Inlet Invert= 318.00', Outlet Invert= 312.00'

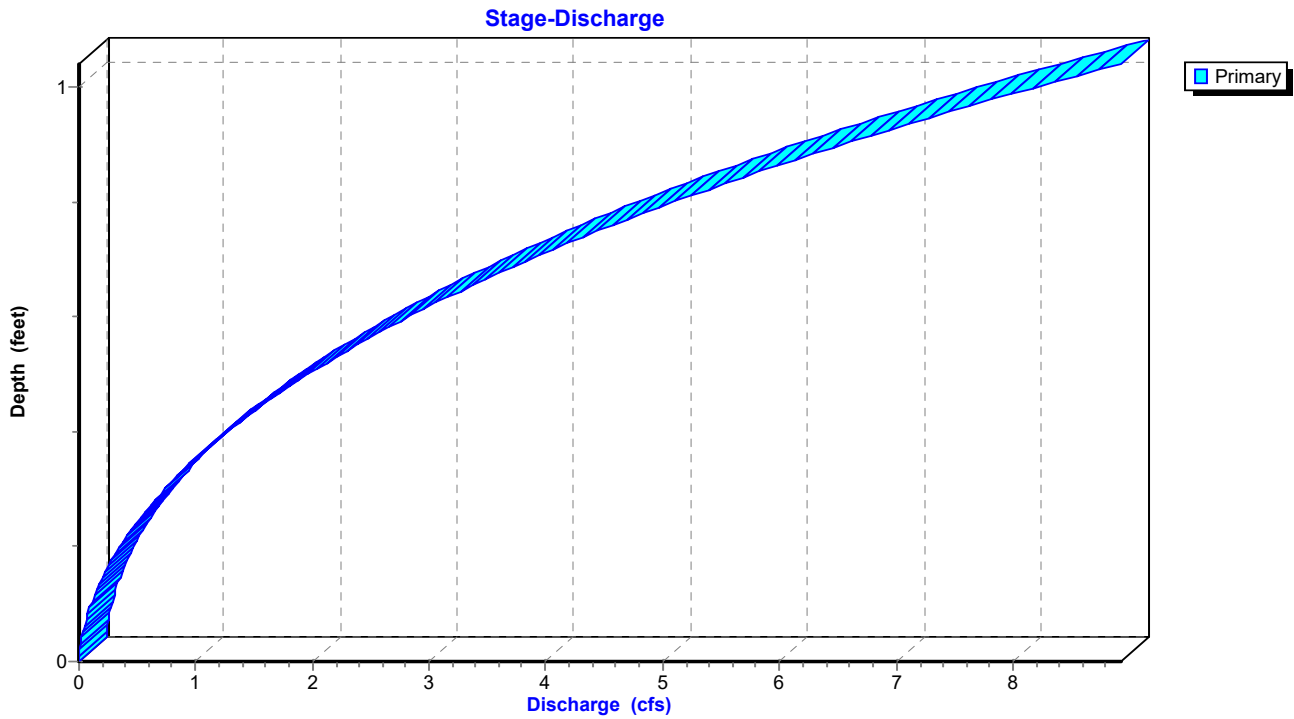


**Reach 2R: Proposed RRv Swale**

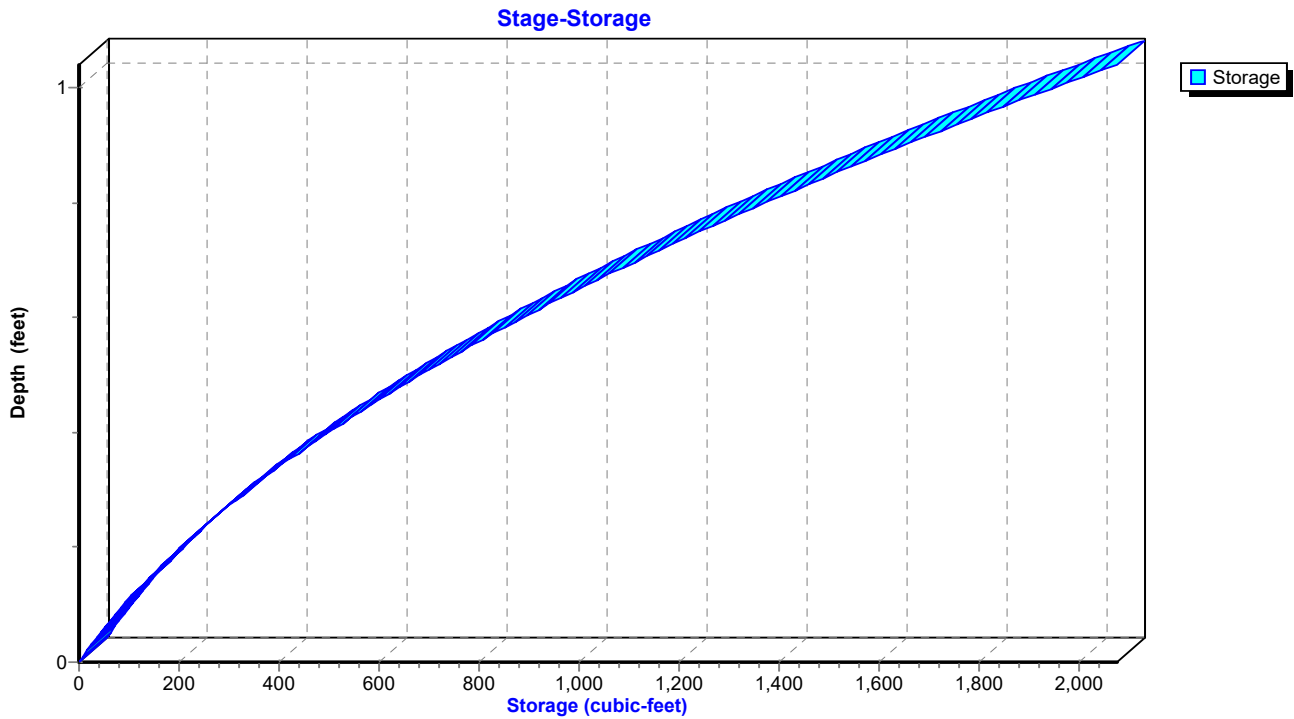
Hydrograph



### Reach 2R: Proposed RRv Swale



### Reach 2R: Proposed RRv Swale



**Hydrograph for Reach 2R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>318.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.12</b>  | <b>123</b>           | <b>318.13</b>    | <b>0.17</b>   |
| 15.00        | 0.04         | 47                   | 318.06           | 0.04          |
| 17.50        | 0.02         | 36                   | 318.04           | 0.03          |
| 20.00        | 0.02         | 29                   | 318.04           | 0.02          |
| 22.50        | 0.02         | 26                   | 318.03           | 0.02          |
| 25.00        | 0.00         | 7                    | 318.01           | 0.00          |
| 27.50        | 0.00         | 1                    | 318.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 318.00           | 0.00          |



**Stage-Discharge for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 318.00              | 0.00                 | 0.00               | 318.53              | 1.16                 | 2.20               |
| 318.01              | 0.10                 | 0.00               | 318.54              | 1.17                 | 2.28               |
| 318.02              | 0.17                 | 0.01               | 318.55              | 1.18                 | 2.37               |
| 318.03              | 0.22                 | 0.01               | 318.56              | 1.19                 | 2.46               |
| 318.04              | 0.26                 | 0.02               | 318.57              | 1.20                 | 2.54               |
| 318.05              | 0.30                 | 0.03               | 318.58              | 1.21                 | 2.63               |
| 318.06              | 0.33                 | 0.04               | 318.59              | 1.23                 | 2.73               |
| 318.07              | 0.37                 | 0.06               | 318.60              | 1.24                 | 2.82               |
| 318.08              | 0.40                 | 0.07               | 318.61              | 1.25                 | 2.92               |
| 318.09              | 0.43                 | 0.09               | 318.62              | 1.26                 | 3.01               |
| 318.10              | 0.45                 | 0.10               | 318.63              | 1.27                 | 3.11               |
| 318.11              | 0.48                 | 0.12               | 318.64              | 1.28                 | 3.22               |
| 318.12              | 0.50                 | 0.14               | 318.65              | 1.29                 | 3.32               |
| 318.13              | 0.53                 | 0.16               | 318.66              | 1.30                 | 3.42               |
| 318.14              | 0.55                 | 0.19               | 318.67              | 1.31                 | 3.53               |
| 318.15              | 0.57                 | 0.21               | 318.68              | 1.32                 | 3.64               |
| 318.16              | 0.60                 | 0.24               | 318.69              | 1.34                 | 3.75               |
| 318.17              | 0.62                 | 0.26               | 318.70              | 1.35                 | 3.86               |
| 318.18              | 0.64                 | 0.29               | 318.71              | 1.36                 | 3.98               |
| 318.19              | 0.66                 | 0.32               | 318.72              | 1.37                 | 4.09               |
| 318.20              | 0.68                 | 0.35               | 318.73              | 1.38                 | 4.21               |
| 318.21              | 0.70                 | 0.38               | 318.74              | 1.39                 | 4.33               |
| 318.22              | 0.71                 | 0.42               | 318.75              | 1.40                 | 4.46               |
| 318.23              | 0.73                 | 0.45               | 318.76              | 1.41                 | 4.58               |
| 318.24              | 0.75                 | 0.49               | 318.77              | 1.42                 | 4.71               |
| 318.25              | 0.77                 | 0.53               | 318.78              | 1.43                 | 4.84               |
| 318.26              | 0.78                 | 0.57               | 318.79              | 1.44                 | 4.97               |
| 318.27              | 0.80                 | 0.61               | 318.80              | 1.45                 | 5.10               |
| 318.28              | 0.82                 | 0.65               | 318.81              | 1.46                 | 5.23               |
| 318.29              | 0.83                 | 0.69               | 318.82              | 1.47                 | 5.37               |
| 318.30              | 0.85                 | 0.74               | 318.83              | 1.48                 | 5.51               |
| 318.31              | 0.86                 | 0.78               | 318.84              | 1.49                 | 5.65               |
| 318.32              | 0.88                 | 0.83               | 318.85              | 1.50                 | 5.79               |
| 318.33              | 0.89                 | 0.88               | 318.86              | 1.51                 | 5.94               |
| 318.34              | 0.91                 | 0.93               | 318.87              | 1.52                 | 6.09               |
| 318.35              | 0.92                 | 0.98               | 318.88              | 1.53                 | 6.24               |
| 318.36              | 0.94                 | 1.04               | 318.89              | 1.54                 | 6.39               |
| 318.37              | 0.95                 | 1.09               | 318.90              | 1.55                 | 6.54               |
| 318.38              | 0.96                 | 1.15               | 318.91              | 1.56                 | 6.70               |
| 318.39              | 0.98                 | 1.21               | 318.92              | 1.57                 | 6.86               |
| 318.40              | 0.99                 | 1.27               | 318.93              | 1.57                 | 7.02               |
| 318.41              | 1.01                 | 1.33               | 318.94              | 1.58                 | 7.18               |
| 318.42              | 1.02                 | 1.40               | 318.95              | 1.59                 | 7.34               |
| 318.43              | 1.03                 | 1.46               | 318.96              | 1.60                 | 7.51               |
| 318.44              | 1.04                 | 1.53               | 318.97              | 1.61                 | 7.68               |
| 318.45              | 1.06                 | 1.59               | 318.98              | 1.62                 | 7.85               |
| 318.46              | 1.07                 | 1.66               | 318.99              | 1.63                 | 8.02               |
| 318.47              | 1.08                 | 1.74               | 319.00              | 1.64                 | 8.20               |
| 318.48              | 1.10                 | 1.81               | 319.01              | 1.65                 | 8.38               |
| 318.49              | 1.11                 | 1.88               | 319.02              | 1.66                 | 8.56               |
| 318.50              | 1.12                 | 1.96               | 319.03              | 1.67                 | 8.74               |
| 318.51              | 1.13                 | 2.04               | 319.04              | <b>1.68</b>          | <b>8.93</b>        |
| 318.52              | 1.14                 | 2.12               |                     |                      |                    |

**Stage-Area-Storage for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 318.00              | 0.0                 | 0                       | 318.53              | 1.9                 | 742                     |
| 318.01              | 0.0                 | 8                       | 318.54              | 2.0                 | 762                     |
| 318.02              | 0.0                 | 16                      | 318.55              | 2.0                 | 783                     |
| 318.03              | 0.1                 | 24                      | 318.56              | 2.1                 | 804                     |
| 318.04              | 0.1                 | 33                      | 318.57              | 2.1                 | 825                     |
| 318.05              | 0.1                 | 42                      | 318.58              | 2.2                 | 846                     |
| 318.06              | 0.1                 | 51                      | 318.59              | 2.2                 | 868                     |
| 318.07              | 0.2                 | 60                      | 318.60              | 2.3                 | 889                     |
| 318.08              | 0.2                 | 70                      | 318.61              | 2.3                 | 911                     |
| 318.09              | 0.2                 | 80                      | 318.62              | 2.4                 | 933                     |
| 318.10              | 0.2                 | 90                      | 318.63              | 2.5                 | 956                     |
| 318.11              | 0.3                 | 100                     | 318.64              | 2.5                 | 978                     |
| 318.12              | 0.3                 | 110                     | 318.65              | 2.6                 | 1,001                   |
| 318.13              | 0.3                 | 121                     | 318.66              | 2.6                 | 1,024                   |
| 318.14              | 0.3                 | 132                     | 318.67              | 2.7                 | 1,048                   |
| 318.15              | 0.4                 | 143                     | 318.68              | 2.7                 | 1,071                   |
| 318.16              | 0.4                 | 155                     | 318.69              | 2.8                 | 1,095                   |
| 318.17              | 0.4                 | 166                     | 318.70              | 2.9                 | 1,119                   |
| 318.18              | 0.5                 | 178                     | 318.71              | 2.9                 | 1,144                   |
| 318.19              | 0.5                 | 190                     | 318.72              | 3.0                 | 1,168                   |
| 318.20              | 0.5                 | 203                     | 318.73              | 3.1                 | 1,193                   |
| 318.21              | 0.6                 | 215                     | 318.74              | 3.1                 | 1,218                   |
| 318.22              | 0.6                 | 228                     | 318.75              | 3.2                 | 1,243                   |
| 318.23              | 0.6                 | 241                     | 318.76              | 3.3                 | 1,269                   |
| 318.24              | 0.7                 | 255                     | 318.77              | 3.3                 | 1,294                   |
| 318.25              | 0.7                 | 268                     | 318.78              | 3.4                 | 1,320                   |
| 318.26              | 0.7                 | 282                     | 318.79              | 3.5                 | 1,346                   |
| 318.27              | 0.8                 | 296                     | 318.80              | 3.5                 | 1,373                   |
| 318.28              | 0.8                 | 310                     | 318.81              | 3.6                 | 1,399                   |
| 318.29              | 0.8                 | 325                     | 318.82              | 3.7                 | 1,426                   |
| 318.30              | 0.9                 | 339                     | 318.83              | 3.7                 | 1,453                   |
| 318.31              | 0.9                 | 354                     | 318.84              | 3.8                 | 1,481                   |
| 318.32              | 0.9                 | 369                     | 318.85              | 3.9                 | 1,508                   |
| 318.33              | 1.0                 | 385                     | 318.86              | 3.9                 | 1,536                   |
| 318.34              | 1.0                 | 400                     | 318.87              | 4.0                 | 1,564                   |
| 318.35              | 1.1                 | 416                     | 318.88              | 4.1                 | 1,592                   |
| 318.36              | 1.1                 | 432                     | 318.89              | 4.2                 | 1,621                   |
| 318.37              | 1.2                 | 449                     | 318.90              | 4.2                 | 1,650                   |
| 318.38              | 1.2                 | 465                     | 318.91              | 4.3                 | 1,679                   |
| 318.39              | 1.2                 | 482                     | 318.92              | 4.4                 | 1,708                   |
| 318.40              | 1.3                 | 499                     | 318.93              | 4.5                 | 1,737                   |
| 318.41              | 1.3                 | 517                     | 318.94              | 4.5                 | 1,767                   |
| 318.42              | 1.4                 | 534                     | 318.95              | 4.6                 | 1,797                   |
| 318.43              | 1.4                 | 552                     | 318.96              | 4.7                 | 1,827                   |
| 318.44              | 1.5                 | 570                     | 318.97              | 4.8                 | 1,857                   |
| 318.45              | 1.5                 | 588                     | 318.98              | 4.8                 | 1,888                   |
| 318.46              | 1.6                 | 606                     | 318.99              | 4.9                 | 1,919                   |
| 318.47              | 1.6                 | 625                     | 319.00              | 5.0                 | 1,950                   |
| 318.48              | 1.7                 | 644                     | 319.01              | 5.1                 | 1,981                   |
| 318.49              | 1.7                 | 663                     | 319.02              | 5.2                 | 2,013                   |
| 318.50              | 1.8                 | 683                     | 319.03              | 5.2                 | 2,045                   |
| 318.51              | 1.8                 | 702                     | 319.04              | <b>5.3</b>          | <b>2,077</b>            |
| 318.52              | 1.9                 | 722                     |                     |                     |                         |

### Summary for Reach 3R: Proposed RRv Swale

[62] Hint: Exceeded Reach 4R OUTLET depth by 0.29' @ 12.00 hrs

Inflow Area = 0.744 ac, 40.73% Impervious, Inflow Depth = 1.07" for 1-yr event  
Inflow = 1.29 cfs @ 11.98 hrs, Volume= 0.066 af  
Outflow = 1.23 cfs @ 12.01 hrs, Volume= 0.066 af, Atten= 5%, Lag= 1.5 min  
Routed to Pond 3P : Proposed Stormwater Pond

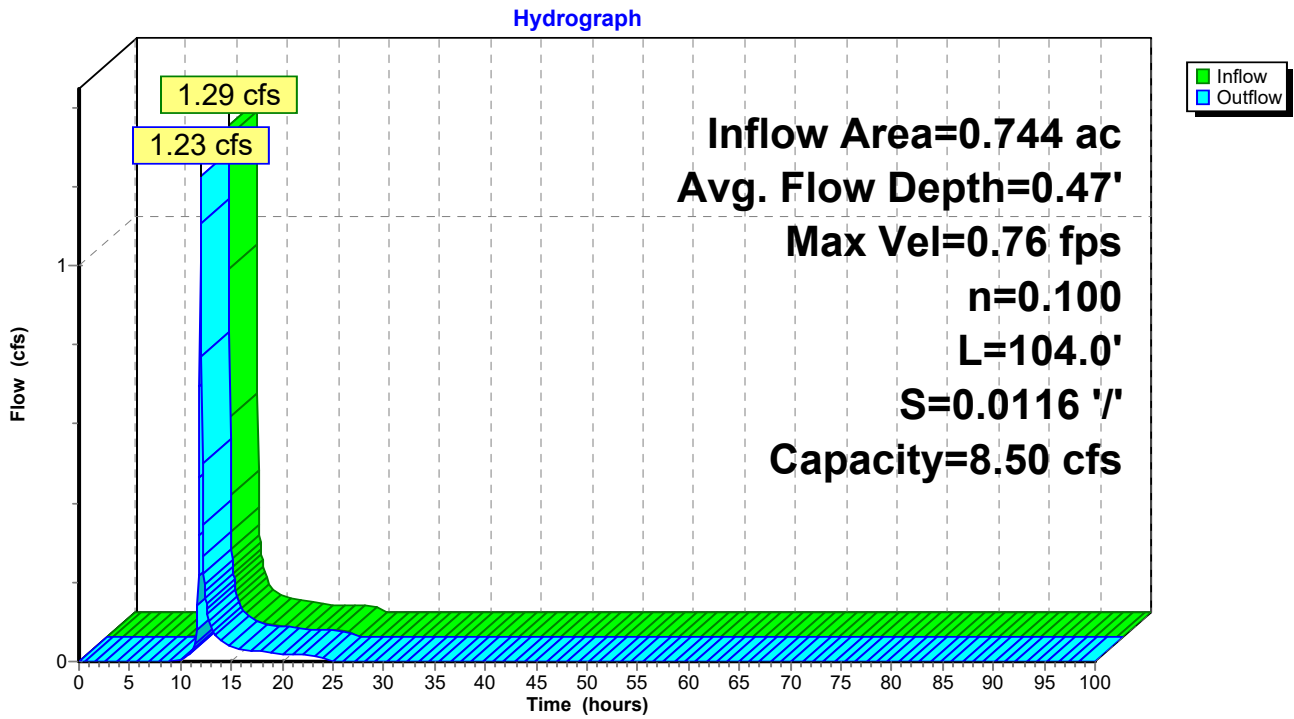
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.76 fps, Min. Travel Time= 2.3 min  
Avg. Velocity = 0.20 fps, Avg. Travel Time= 8.5 min

Peak Storage= 168 cf @ 12.01 hrs  
Average Depth at Peak Storage= 0.47' , Surface Width= 4.84'  
Bank-Full Depth= 1.20' Flow Area= 6.7 sf, Capacity= 8.50 cfs

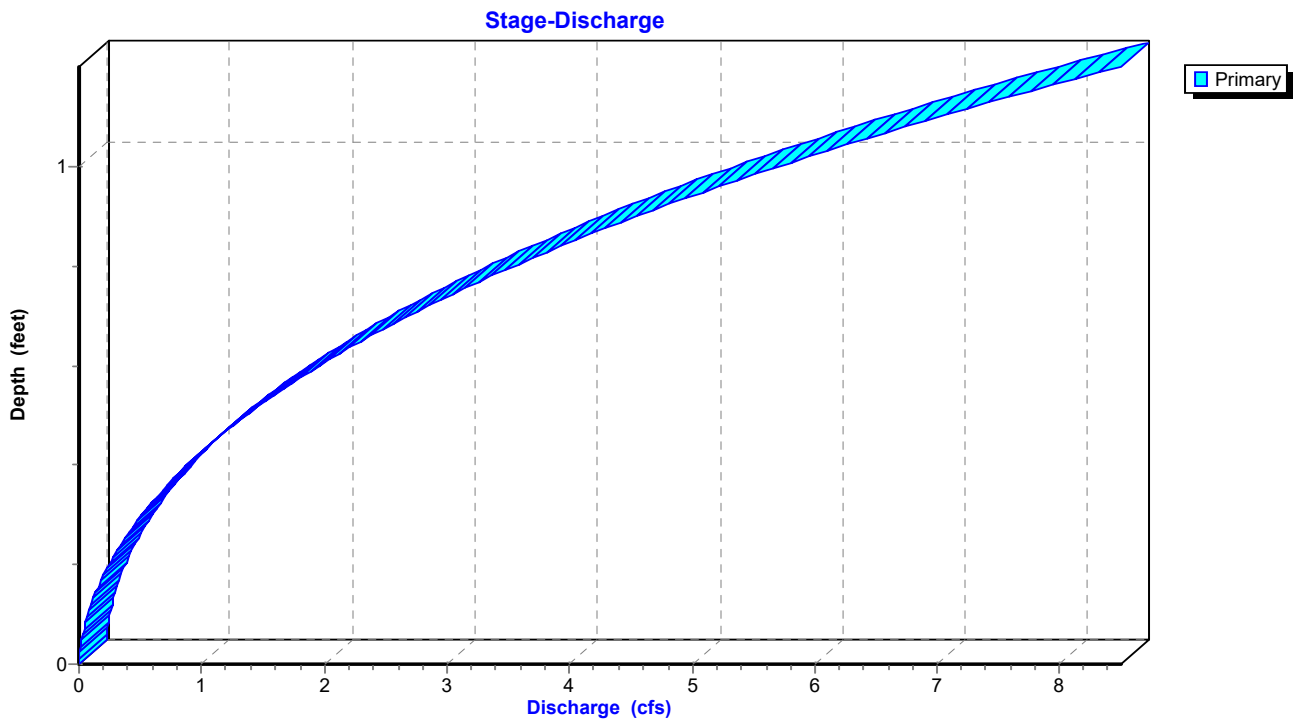
2.00' x 1.20' deep channel, n= 0.100 Earth, dense brush, high stage  
Side Slope Z-value= 3.0 '/' Top Width= 9.20'  
Length= 104.0' Slope= 0.0116 '/'  
Inlet Invert= 312.21', Outlet Invert= 311.00'



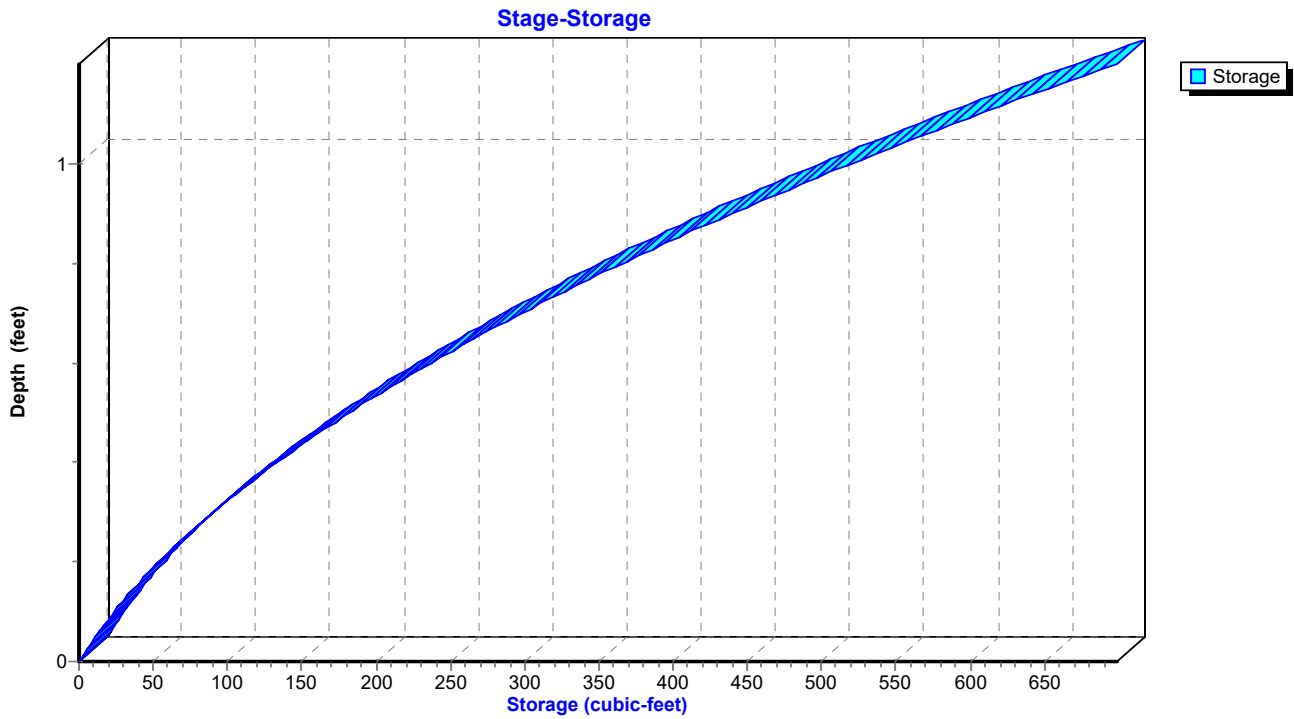
**Reach 3R: Proposed RRv Swale**



**Reach 3R: Proposed RRv Swale**



### Reach 3R: Proposed RRv Swale



**Hydrograph for Reach 3R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 7.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>5</b>             | <b>312.23</b>    | <b>0.01</b>   |
| 12.50        | <b>0.13</b>  | <b>38</b>            | <b>312.36</b>    | <b>0.15</b>   |
| 15.00        | 0.04         | 16                   | 312.28           | 0.04          |
| 17.50        | 0.03         | 12                   | 312.26           | 0.03          |
| 20.00        | 0.02         | 10                   | 312.25           | 0.02          |
| 22.50        | 0.02         | 9                    | 312.25           | 0.02          |
| 25.00        | 0.00         | 1                    | 312.21           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.21           | 0.00          |

**Stage-Discharge for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.21              | 0.00                 | 0.00               | 312.74              | 0.80                 | 1.53               | 313.27              | 1.18                 | 6.47               |
| 312.22              | 0.07                 | 0.00               | 312.75              | 0.81                 | 1.59               | 313.28              | 1.19                 | 6.61               |
| 312.23              | 0.11                 | 0.00               | 312.76              | 0.82                 | 1.65               | 313.29              | 1.19                 | 6.74               |
| 312.24              | 0.15                 | 0.01               | 312.77              | 0.83                 | 1.71               | 313.30              | 1.20                 | 6.88               |
| 312.25              | 0.18                 | 0.02               | 312.78              | 0.84                 | 1.77               | 313.31              | 1.20                 | 7.02               |
| 312.26              | 0.21                 | 0.02               | 312.79              | 0.84                 | 1.83               | 313.32              | 1.21                 | 7.16               |
| 312.27              | 0.23                 | 0.03               | 312.80              | 0.85                 | 1.90               | 313.33              | 1.22                 | 7.30               |
| 312.28              | 0.25                 | 0.04               | 312.81              | 0.86                 | 1.96               | 313.34              | 1.22                 | 7.44               |
| 312.29              | 0.28                 | 0.05               | 312.82              | 0.87                 | 2.03               | 313.35              | 1.23                 | 7.59               |
| 312.30              | 0.30                 | 0.06               | 312.83              | 0.88                 | 2.10               | 313.36              | 1.23                 | 7.74               |
| 312.31              | 0.32                 | 0.07               | 312.84              | 0.88                 | 2.17               | 313.37              | 1.24                 | 7.89               |
| 312.32              | 0.33                 | 0.09               | 312.85              | 0.89                 | 2.24               | 313.38              | 1.25                 | 8.04               |
| 312.33              | 0.35                 | 0.10               | 312.86              | 0.90                 | 2.31               | 313.39              | 1.25                 | 8.19               |
| 312.34              | 0.37                 | 0.11               | 312.87              | 0.91                 | 2.38               | 313.40              | 1.26                 | 8.34               |
| 312.35              | 0.38                 | 0.13               | 312.88              | 0.91                 | 2.46               | 313.41              | <b>1.26</b>          | <b>8.50</b>        |
| 312.36              | 0.40                 | 0.15               | 312.89              | 0.92                 | 2.53               |                     |                      |                    |
| 312.37              | 0.41                 | 0.16               | 312.90              | 0.93                 | 2.61               |                     |                      |                    |
| 312.38              | 0.43                 | 0.18               | 312.91              | 0.94                 | 2.69               |                     |                      |                    |
| 312.39              | 0.44                 | 0.20               | 312.92              | 0.94                 | 2.77               |                     |                      |                    |
| 312.40              | 0.46                 | 0.22               | 312.93              | 0.95                 | 2.85               |                     |                      |                    |
| 312.41              | 0.47                 | 0.25               | 312.94              | 0.96                 | 2.93               |                     |                      |                    |
| 312.42              | 0.48                 | 0.27               | 312.95              | 0.97                 | 3.02               |                     |                      |                    |
| 312.43              | 0.50                 | 0.29               | 312.96              | 0.97                 | 3.10               |                     |                      |                    |
| 312.44              | 0.51                 | 0.32               | 312.97              | 0.98                 | 3.19               |                     |                      |                    |
| 312.45              | 0.52                 | 0.34               | 312.98              | 0.99                 | 3.28               |                     |                      |                    |
| 312.46              | 0.53                 | 0.37               | 312.99              | 0.99                 | 3.36               |                     |                      |                    |
| 312.47              | 0.55                 | 0.39               | 313.00              | 1.00                 | 3.46               |                     |                      |                    |
| 312.48              | 0.56                 | 0.42               | 313.01              | 1.01                 | 3.55               |                     |                      |                    |
| 312.49              | 0.57                 | 0.45               | 313.02              | 1.01                 | 3.64               |                     |                      |                    |
| 312.50              | 0.58                 | 0.48               | 313.03              | 1.02                 | 3.74               |                     |                      |                    |
| 312.51              | 0.59                 | 0.51               | 313.04              | 1.03                 | 3.83               |                     |                      |                    |
| 312.52              | 0.60                 | 0.55               | 313.05              | 1.04                 | 3.93               |                     |                      |                    |
| 312.53              | 0.61                 | 0.58               | 313.06              | 1.04                 | 4.03               |                     |                      |                    |
| 312.54              | 0.62                 | 0.61               | 313.07              | 1.05                 | 4.13               |                     |                      |                    |
| 312.55              | 0.63                 | 0.65               | 313.08              | 1.06                 | 4.23               |                     |                      |                    |
| 312.56              | 0.64                 | 0.69               | 313.09              | 1.06                 | 4.34               |                     |                      |                    |
| 312.57              | 0.65                 | 0.72               | 313.10              | 1.07                 | 4.44               |                     |                      |                    |
| 312.58              | 0.66                 | 0.76               | 313.11              | 1.08                 | 4.55               |                     |                      |                    |
| 312.59              | 0.67                 | 0.80               | 313.12              | 1.08                 | 4.66               |                     |                      |                    |
| 312.60              | 0.68                 | 0.84               | 313.13              | 1.09                 | 4.77               |                     |                      |                    |
| 312.61              | 0.69                 | 0.88               | 313.14              | 1.10                 | 4.88               |                     |                      |                    |
| 312.62              | 0.70                 | 0.93               | 313.15              | 1.10                 | 4.99               |                     |                      |                    |
| 312.63              | 0.71                 | 0.97               | 313.16              | 1.11                 | 5.11               |                     |                      |                    |
| 312.64              | 0.72                 | 1.02               | 313.17              | 1.12                 | 5.22               |                     |                      |                    |
| 312.65              | 0.73                 | 1.06               | 313.18              | 1.12                 | 5.34               |                     |                      |                    |
| 312.66              | 0.74                 | 1.11               | 313.19              | 1.13                 | 5.46               |                     |                      |                    |
| 312.67              | 0.74                 | 1.16               | 313.20              | 1.13                 | 5.58               |                     |                      |                    |
| 312.68              | 0.75                 | 1.21               | 313.21              | 1.14                 | 5.71               |                     |                      |                    |
| 312.69              | 0.76                 | 1.26               | 313.22              | 1.15                 | 5.83               |                     |                      |                    |
| 312.70              | 0.77                 | 1.31               | 313.23              | 1.15                 | 5.95               |                     |                      |                    |
| 312.71              | 0.78                 | 1.36               | 313.24              | 1.16                 | 6.08               |                     |                      |                    |
| 312.72              | 0.79                 | 1.42               | 313.25              | 1.17                 | 6.21               |                     |                      |                    |
| 312.73              | 0.80                 | 1.47               | 313.26              | 1.17                 | 6.34               |                     |                      |                    |

**Stage-Area-Storage for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.21              | 0.0                 | 0                       | 313.27              | 5.5                 | 571                     |
| 312.23              | 0.0                 | 4                       | 313.29              | 5.7                 | 589                     |
| 312.25              | 0.1                 | 9                       | 313.31              | 5.8                 | 606                     |
| 312.27              | 0.1                 | 14                      | 313.33              | 6.0                 | 624                     |
| 312.29              | 0.2                 | 19                      | 313.35              | 6.2                 | 643                     |
| 312.31              | 0.2                 | 24                      | 313.37              | 6.4                 | 661                     |
| 312.33              | 0.3                 | 29                      | 313.39              | 6.5                 | 680                     |
| 312.35              | 0.3                 | 35                      | 313.41              | <b>6.7</b>          | <b>699</b>              |
| 312.37              | 0.4                 | 41                      |                     |                     |                         |
| 312.39              | 0.5                 | 48                      |                     |                     |                         |
| 312.41              | 0.5                 | 54                      |                     |                     |                         |
| 312.43              | 0.6                 | 61                      |                     |                     |                         |
| 312.45              | 0.7                 | 68                      |                     |                     |                         |
| 312.47              | 0.7                 | 75                      |                     |                     |                         |
| 312.49              | 0.8                 | 83                      |                     |                     |                         |
| 312.51              | 0.9                 | 90                      |                     |                     |                         |
| 312.53              | 0.9                 | 99                      |                     |                     |                         |
| 312.55              | 1.0                 | 107                     |                     |                     |                         |
| 312.57              | 1.1                 | 115                     |                     |                     |                         |
| 312.59              | 1.2                 | 124                     |                     |                     |                         |
| 312.61              | 1.3                 | 133                     |                     |                     |                         |
| 312.63              | 1.4                 | 142                     |                     |                     |                         |
| 312.65              | 1.5                 | 152                     |                     |                     |                         |
| 312.67              | 1.6                 | 162                     |                     |                     |                         |
| 312.69              | 1.7                 | 172                     |                     |                     |                         |
| 312.71              | 1.8                 | 182                     |                     |                     |                         |
| 312.73              | 1.9                 | 193                     |                     |                     |                         |
| 312.75              | 2.0                 | 203                     |                     |                     |                         |
| 312.77              | 2.1                 | 214                     |                     |                     |                         |
| 312.79              | 2.2                 | 226                     |                     |                     |                         |
| 312.81              | 2.3                 | 237                     |                     |                     |                         |
| 312.83              | 2.4                 | 249                     |                     |                     |                         |
| 312.85              | 2.5                 | 261                     |                     |                     |                         |
| 312.87              | 2.6                 | 273                     |                     |                     |                         |
| 312.89              | 2.7                 | 286                     |                     |                     |                         |
| 312.91              | 2.9                 | 298                     |                     |                     |                         |
| 312.93              | 3.0                 | 312                     |                     |                     |                         |
| 312.95              | 3.1                 | 325                     |                     |                     |                         |
| 312.97              | 3.3                 | 338                     |                     |                     |                         |
| 312.99              | 3.4                 | 352                     |                     |                     |                         |
| 313.01              | 3.5                 | 366                     |                     |                     |                         |
| 313.03              | 3.7                 | 380                     |                     |                     |                         |
| 313.05              | 3.8                 | 395                     |                     |                     |                         |
| 313.07              | 3.9                 | 410                     |                     |                     |                         |
| 313.09              | 4.1                 | 425                     |                     |                     |                         |
| 313.11              | 4.2                 | 440                     |                     |                     |                         |
| 313.13              | 4.4                 | 455                     |                     |                     |                         |
| 313.15              | 4.5                 | 471                     |                     |                     |                         |
| 313.17              | 4.7                 | 487                     |                     |                     |                         |
| 313.19              | 4.8                 | 503                     |                     |                     |                         |
| 313.21              | 5.0                 | 520                     |                     |                     |                         |
| 313.23              | 5.2                 | 537                     |                     |                     |                         |
| 313.25              | 5.3                 | 554                     |                     |                     |                         |



### Summary for Reach 4R: Proposed 10" Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

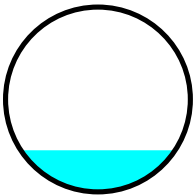
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.04' @ 12.05 hrs

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 0.86" for 1-yr event  
Inflow = 0.31 cfs @ 12.03 hrs, Volume= 0.017 af  
Outflow = 0.31 cfs @ 12.03 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.1 min  
Routed to Reach 3R : Proposed RRv Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 3.42 fps, Min. Travel Time= 0.2 min  
Avg. Velocity= 1.13 fps, Avg. Travel Time= 0.5 min

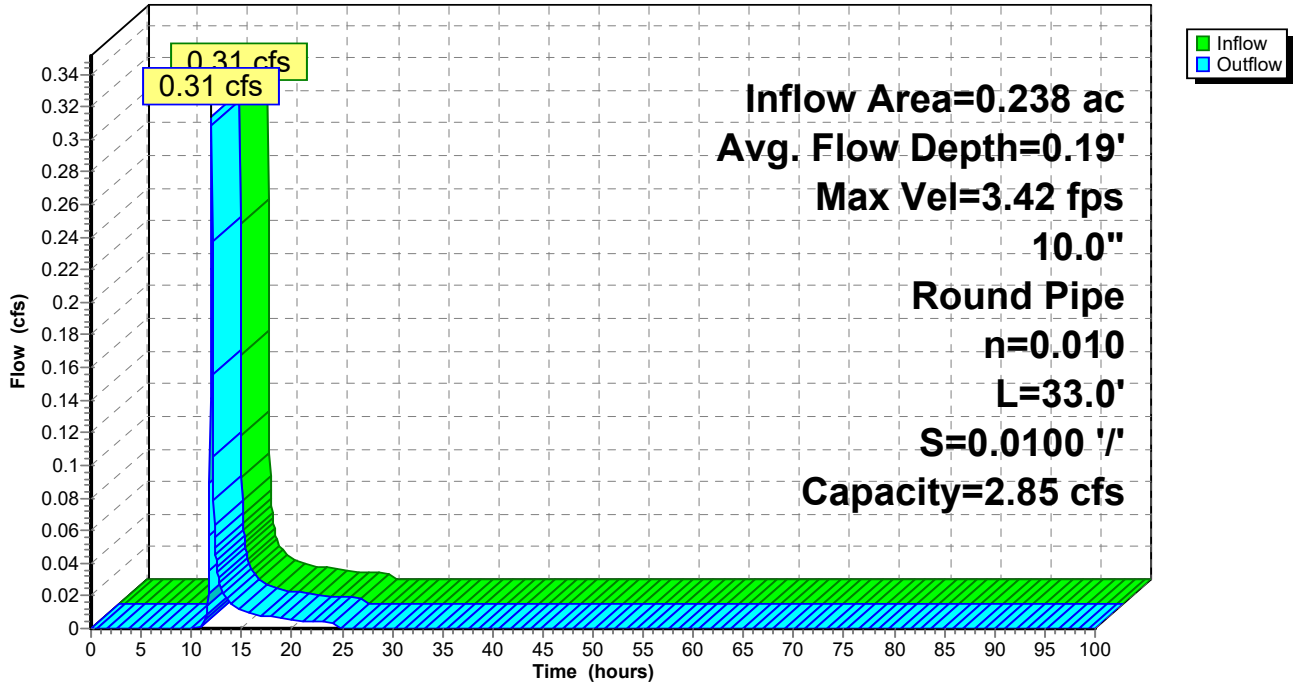
Peak Storage= 3 cf @ 12.03 hrs  
Average Depth at Peak Storage= 0.19' , Surface Width= 0.70'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.85 cfs

10.0" Round Pipe  
n= 0.010 PVC, smooth interior  
Length= 33.0' Slope= 0.0100 '/  
Inlet Invert= 312.54', Outlet Invert= 312.21'



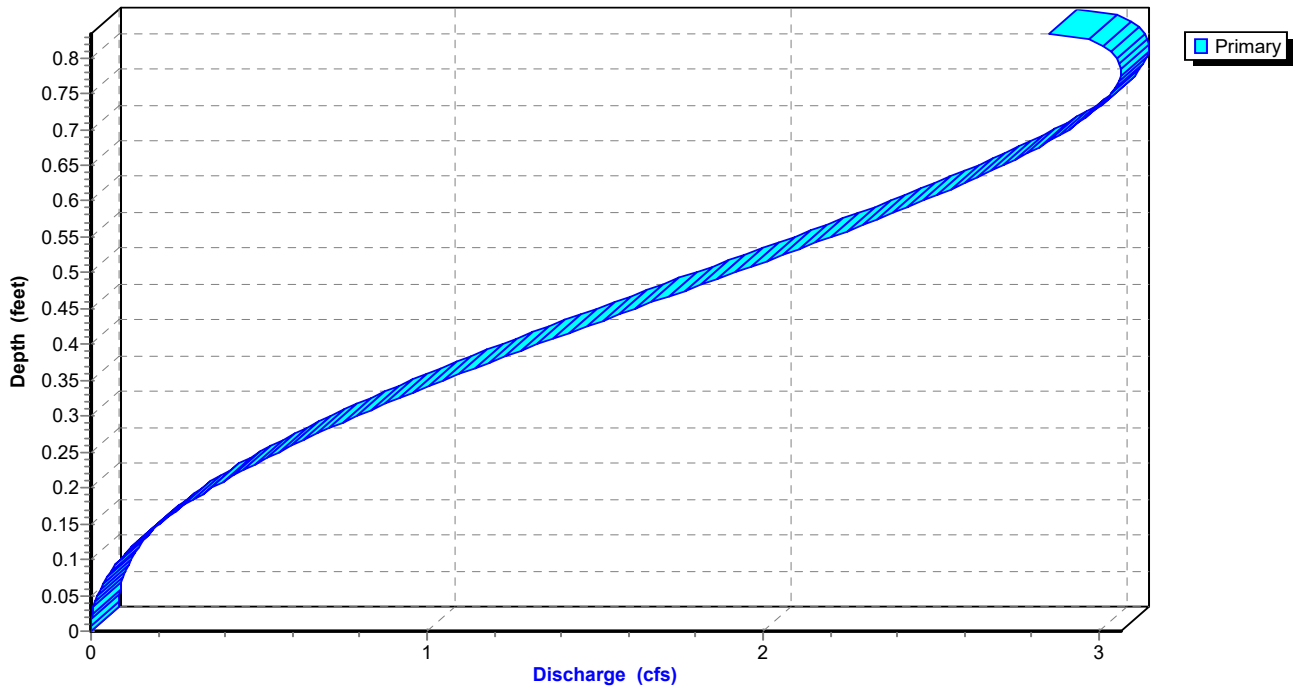
Reach 4R: Proposed 10" Culvert

Hydrograph

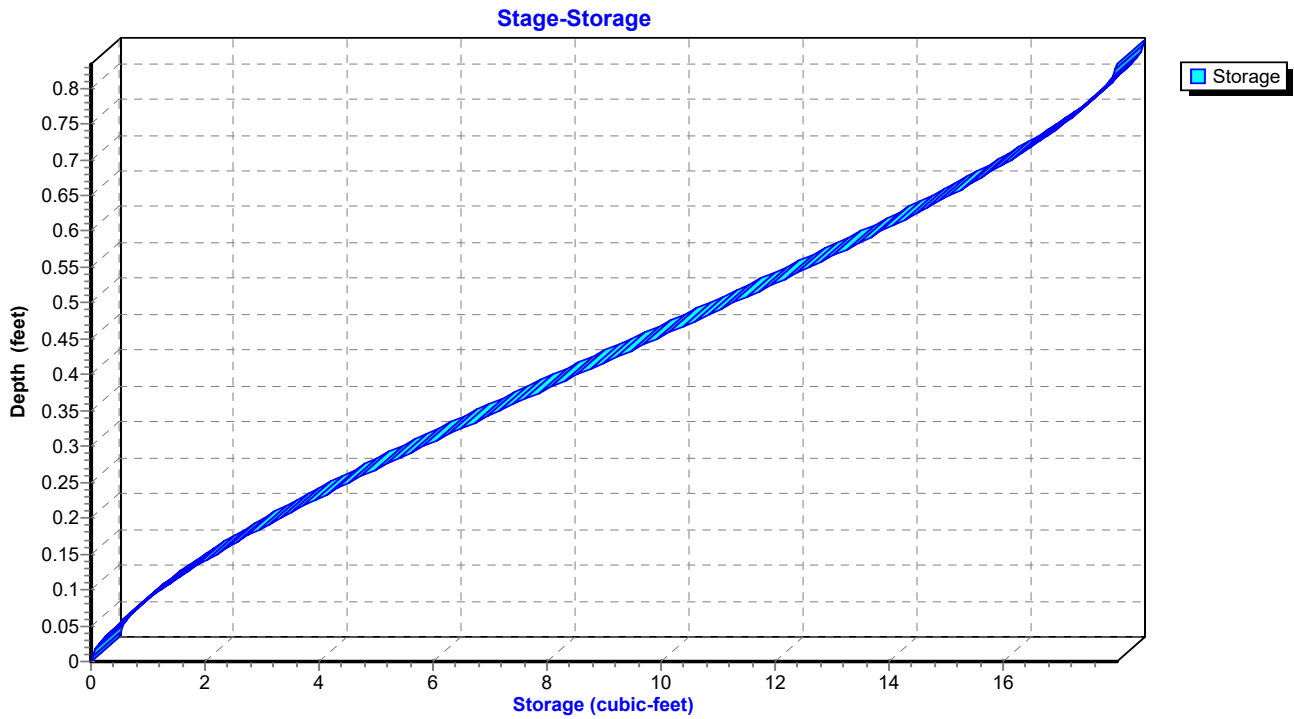


Reach 4R: Proposed 10" Culvert

Stage-Discharge



### Reach 4R: Proposed 10" Culvert



**Hydrograph for Reach 4R: Proposed 10" Culvert**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 7.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>312.54</b>    | <b>0.00</b>   |
| 12.50        | <b>0.04</b>  | <b>1</b>             | <b>312.61</b>    | <b>0.04</b>   |
| 15.00        | 0.01         | 0                    | 312.58           | 0.01          |
| 17.50        | 0.01         | 0                    | 312.57           | 0.01          |
| 20.00        | 0.01         | 0                    | 312.57           | 0.01          |
| 22.50        | 0.00         | 0                    | 312.56           | 0.00          |
| 25.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.54           | 0.00          |

**Stage-Discharge for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.54              | 0.00                 | 0.00               | 313.07              | 5.70                 | 2.09               |
| 312.55              | 0.52                 | 0.00               | 313.08              | 5.74                 | 2.14               |
| 312.56              | 0.83                 | 0.00               | 313.09              | 5.76                 | 2.20               |
| 312.57              | 1.08                 | 0.01               | 313.10              | 5.79                 | 2.26               |
| 312.58              | 1.31                 | 0.01               | 313.11              | 5.82                 | 2.31               |
| 312.59              | 1.51                 | 0.02               | 313.12              | 5.84                 | 2.37               |
| 312.60              | 1.70                 | 0.03               | 313.13              | 5.86                 | 2.42               |
| 312.61              | 1.87                 | 0.04               | 313.14              | 5.88                 | 2.47               |
| 312.62              | 2.04                 | 0.05               | 313.15              | 5.90                 | 2.52               |
| 312.63              | 2.20                 | 0.07               | 313.16              | 5.91                 | 2.57               |
| 312.64              | 2.35                 | 0.09               | 313.17              | 5.93                 | 2.62               |
| 312.65              | 2.49                 | 0.11               | 313.18              | 5.94                 | 2.67               |
| 312.66              | 2.63                 | 0.13               | 313.19              | 5.94                 | 2.71               |
| 312.67              | 2.76                 | 0.15               | 313.20              | 5.95                 | 2.76               |
| 312.68              | 2.89                 | 0.17               | 313.21              | 5.95                 | 2.80               |
| 312.69              | 3.02                 | 0.20               | 313.22              | <b>5.95</b>          | 2.84               |
| 312.70              | 3.13                 | 0.23               | 313.23              | 5.95                 | 2.87               |
| 312.71              | 3.25                 | 0.26               | 313.24              | 5.95                 | 2.91               |
| 312.72              | 3.36                 | 0.29               | 313.25              | 5.94                 | 2.94               |
| 312.73              | 3.47                 | 0.32               | 313.26              | 5.93                 | 2.97               |
| 312.74              | 3.57                 | 0.36               | 313.27              | 5.91                 | 2.99               |
| 312.75              | 3.68                 | 0.40               | 313.28              | 5.89                 | 3.02               |
| 312.76              | 3.77                 | 0.43               | 313.29              | 5.87                 | 3.04               |
| 312.77              | 3.87                 | 0.47               | 313.30              | 5.84                 | 3.05               |
| 312.78              | 3.96                 | 0.52               | 313.31              | 5.81                 | 3.06               |
| 312.79              | 4.05                 | 0.56               | 313.32              | 5.77                 | <b>3.06</b>        |
| 312.80              | 4.14                 | 0.60               | 313.33              | 5.73                 | 3.06               |
| 312.81              | 4.23                 | 0.65               | 313.34              | 5.67                 | 3.05               |
| 312.82              | 4.31                 | 0.69               | 313.35              | 5.60                 | 3.03               |
| 312.83              | 4.39                 | 0.74               | 313.36              | 5.51                 | 2.99               |
| 312.84              | 4.47                 | 0.79               | 313.37              | 5.31                 | 2.90               |
| 312.85              | 4.54                 | 0.84               |                     |                      |                    |
| 312.86              | 4.62                 | 0.89               |                     |                      |                    |
| 312.87              | 4.69                 | 0.94               |                     |                      |                    |
| 312.88              | 4.76                 | 1.00               |                     |                      |                    |
| 312.89              | 4.82                 | 1.05               |                     |                      |                    |
| 312.90              | 4.89                 | 1.10               |                     |                      |                    |
| 312.91              | 4.95                 | 1.16               |                     |                      |                    |
| 312.92              | 5.01                 | 1.21               |                     |                      |                    |
| 312.93              | 5.07                 | 1.27               |                     |                      |                    |
| 312.94              | 5.13                 | 1.33               |                     |                      |                    |
| 312.95              | 5.19                 | 1.39               |                     |                      |                    |
| 312.96              | 5.24                 | 1.44               |                     |                      |                    |
| 312.97              | 5.29                 | 1.50               |                     |                      |                    |
| 312.98              | 5.34                 | 1.56               |                     |                      |                    |
| 312.99              | 5.39                 | 1.62               |                     |                      |                    |
| 313.00              | 5.43                 | 1.68               |                     |                      |                    |
| 313.01              | 5.48                 | 1.74               |                     |                      |                    |
| 313.02              | 5.52                 | 1.80               |                     |                      |                    |
| 313.03              | 5.56                 | 1.85               |                     |                      |                    |
| 313.04              | 5.60                 | 1.91               |                     |                      |                    |
| 313.05              | 5.64                 | 1.97               |                     |                      |                    |
| 313.06              | 5.67                 | 2.03               |                     |                      |                    |

**Stage-Area-Storage for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.54              | 0.0                 | 0                       | 313.07              | 0.4                 | 12                      |
| 312.55              | 0.0                 | 0                       | 313.08              | 0.4                 | 12                      |
| 312.56              | 0.0                 | 0                       | 313.09              | 0.4                 | 13                      |
| 312.57              | 0.0                 | 0                       | 313.10              | 0.4                 | 13                      |
| 312.58              | 0.0                 | 0                       | 313.11              | 0.4                 | 13                      |
| 312.59              | 0.0                 | 0                       | 313.12              | 0.4                 | 13                      |
| 312.60              | 0.0                 | 1                       | 313.13              | 0.4                 | 14                      |
| 312.61              | 0.0                 | 1                       | 313.14              | 0.4                 | 14                      |
| 312.62              | 0.0                 | 1                       | 313.15              | 0.4                 | 14                      |
| 312.63              | 0.0                 | 1                       | 313.16              | 0.4                 | 14                      |
| 312.64              | 0.0                 | 1                       | 313.17              | 0.4                 | 15                      |
| 312.65              | 0.0                 | 1                       | 313.18              | 0.4                 | 15                      |
| 312.66              | 0.0                 | 2                       | 313.19              | 0.5                 | 15                      |
| 312.67              | 0.1                 | 2                       | 313.20              | 0.5                 | 15                      |
| 312.68              | 0.1                 | 2                       | 313.21              | 0.5                 | 16                      |
| 312.69              | 0.1                 | 2                       | 313.22              | 0.5                 | 16                      |
| 312.70              | 0.1                 | 2                       | 313.23              | 0.5                 | 16                      |
| 312.71              | 0.1                 | 3                       | 313.24              | 0.5                 | 16                      |
| 312.72              | 0.1                 | 3                       | 313.25              | 0.5                 | 16                      |
| 312.73              | 0.1                 | 3                       | 313.26              | 0.5                 | 17                      |
| 312.74              | 0.1                 | 3                       | 313.27              | 0.5                 | 17                      |
| 312.75              | 0.1                 | 4                       | 313.28              | 0.5                 | 17                      |
| 312.76              | 0.1                 | 4                       | 313.29              | 0.5                 | 17                      |
| 312.77              | 0.1                 | 4                       | 313.30              | 0.5                 | 17                      |
| 312.78              | 0.1                 | 4                       | 313.31              | 0.5                 | 17                      |
| 312.79              | 0.1                 | 5                       | 313.32              | 0.5                 | 18                      |
| 312.80              | 0.1                 | 5                       | 313.33              | 0.5                 | 18                      |
| 312.81              | 0.2                 | 5                       | 313.34              | 0.5                 | 18                      |
| 312.82              | 0.2                 | 5                       | 313.35              | 0.5                 | 18                      |
| 312.83              | 0.2                 | 6                       | 313.36              | 0.5                 | 18                      |
| 312.84              | 0.2                 | 6                       | 313.37              | <b>0.5</b>          | <b>18</b>               |
| 312.85              | 0.2                 | 6                       |                     |                     |                         |
| 312.86              | 0.2                 | 6                       |                     |                     |                         |
| 312.87              | 0.2                 | 7                       |                     |                     |                         |
| 312.88              | 0.2                 | 7                       |                     |                     |                         |
| 312.89              | 0.2                 | 7                       |                     |                     |                         |
| 312.90              | 0.2                 | 7                       |                     |                     |                         |
| 312.91              | 0.2                 | 8                       |                     |                     |                         |
| 312.92              | 0.2                 | 8                       |                     |                     |                         |
| 312.93              | 0.3                 | 8                       |                     |                     |                         |
| 312.94              | 0.3                 | 9                       |                     |                     |                         |
| 312.95              | 0.3                 | 9                       |                     |                     |                         |
| 312.96              | 0.3                 | 9                       |                     |                     |                         |
| 312.97              | 0.3                 | 9                       |                     |                     |                         |
| 312.98              | 0.3                 | 10                      |                     |                     |                         |
| 312.99              | 0.3                 | 10                      |                     |                     |                         |
| 313.00              | 0.3                 | 10                      |                     |                     |                         |
| 313.01              | 0.3                 | 10                      |                     |                     |                         |
| 313.02              | 0.3                 | 11                      |                     |                     |                         |
| 313.03              | 0.3                 | 11                      |                     |                     |                         |
| 313.04              | 0.3                 | 11                      |                     |                     |                         |
| 313.05              | 0.3                 | 12                      |                     |                     |                         |
| 313.06              | 0.4                 | 12                      |                     |                     |                         |

**Summary for Reach 5R: Proposed RRv Swale**

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 0.86" for 1-yr event  
 Inflow = 0.34 cfs @ 12.00 hrs, Volume= 0.017 af  
 Outflow = 0.31 cfs @ 12.03 hrs, Volume= 0.017 af, Atten= 7%, Lag= 1.8 min  
 Routed to Reach 4R : Proposed 10" Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.84 fps, Min. Travel Time= 2.7 min  
 Avg. Velocity = 0.23 fps, Avg. Travel Time= 10.0 min

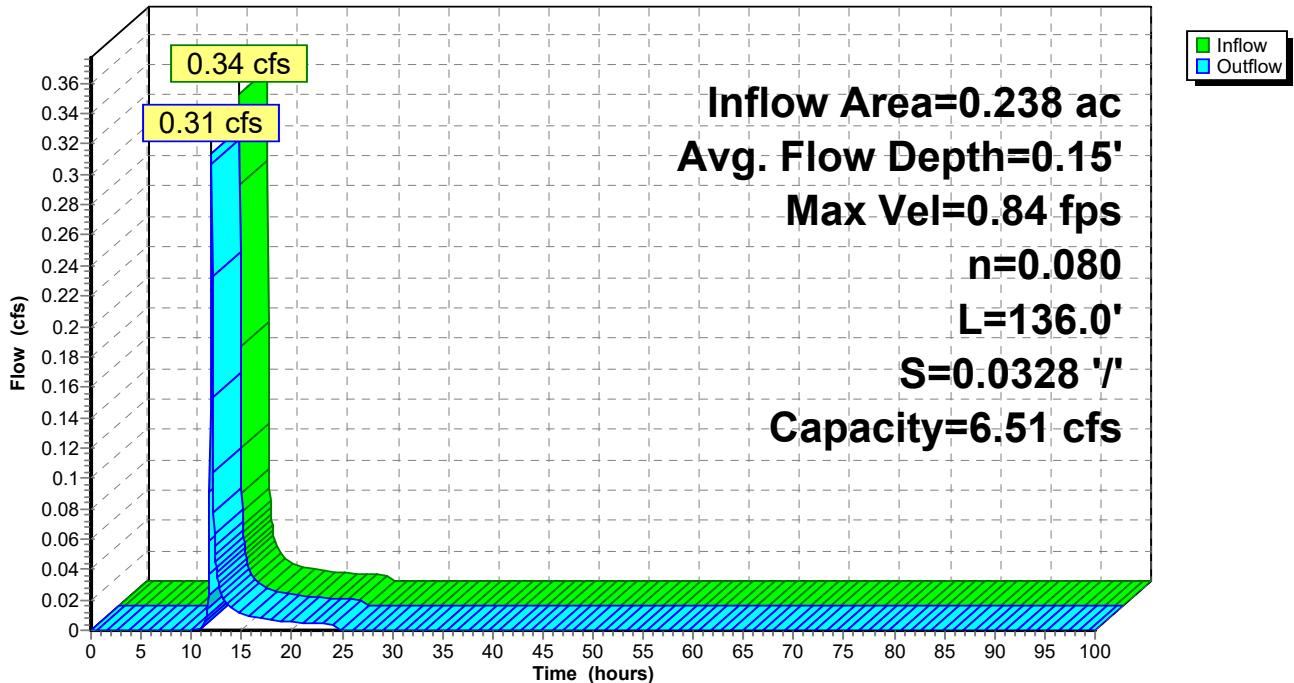
Peak Storage= 51 cf @ 12.03 hrs  
 Average Depth at Peak Storage= 0.15' , Surface Width= 2.91'  
 Bank-Full Depth= 0.75' Flow Area= 3.2 sf, Capacity= 6.51 cfs

2.00' x 0.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 6.50'  
 Length= 136.0' Slope= 0.0328 '/  
 Inlet Invert= 317.00', Outlet Invert= 312.54'

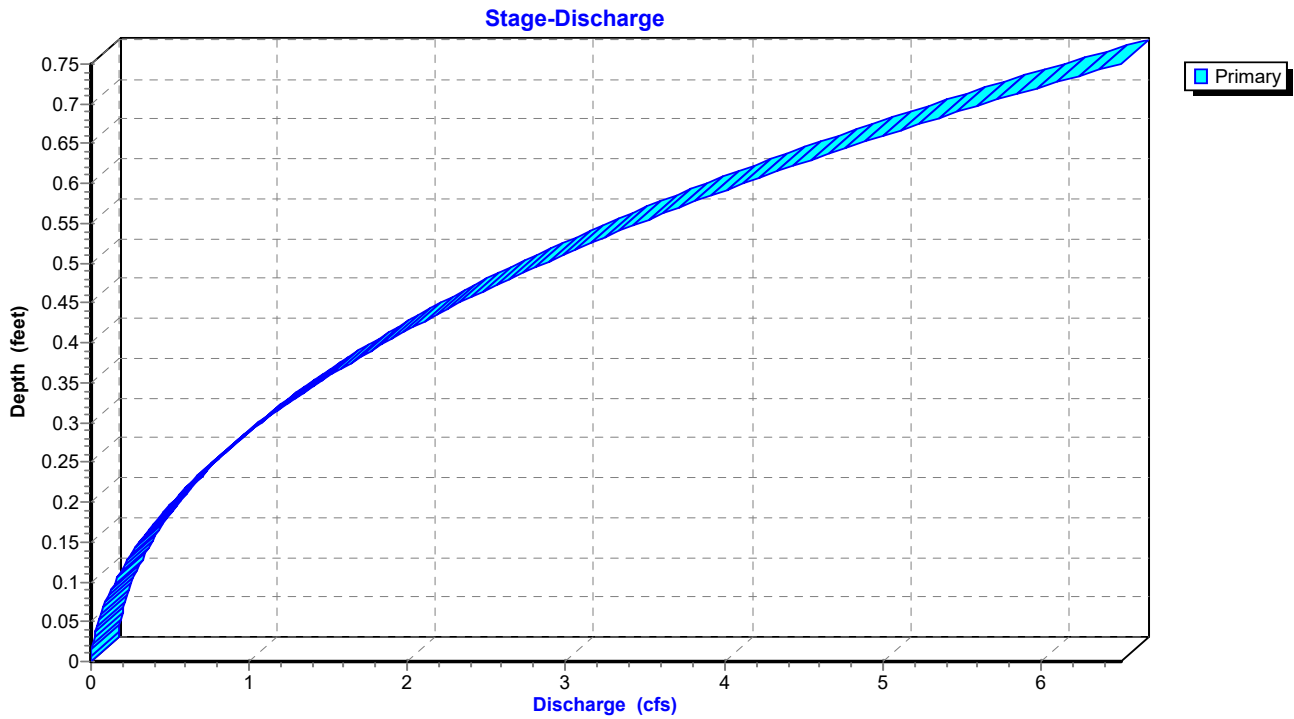


**Reach 5R: Proposed RRv Swale**

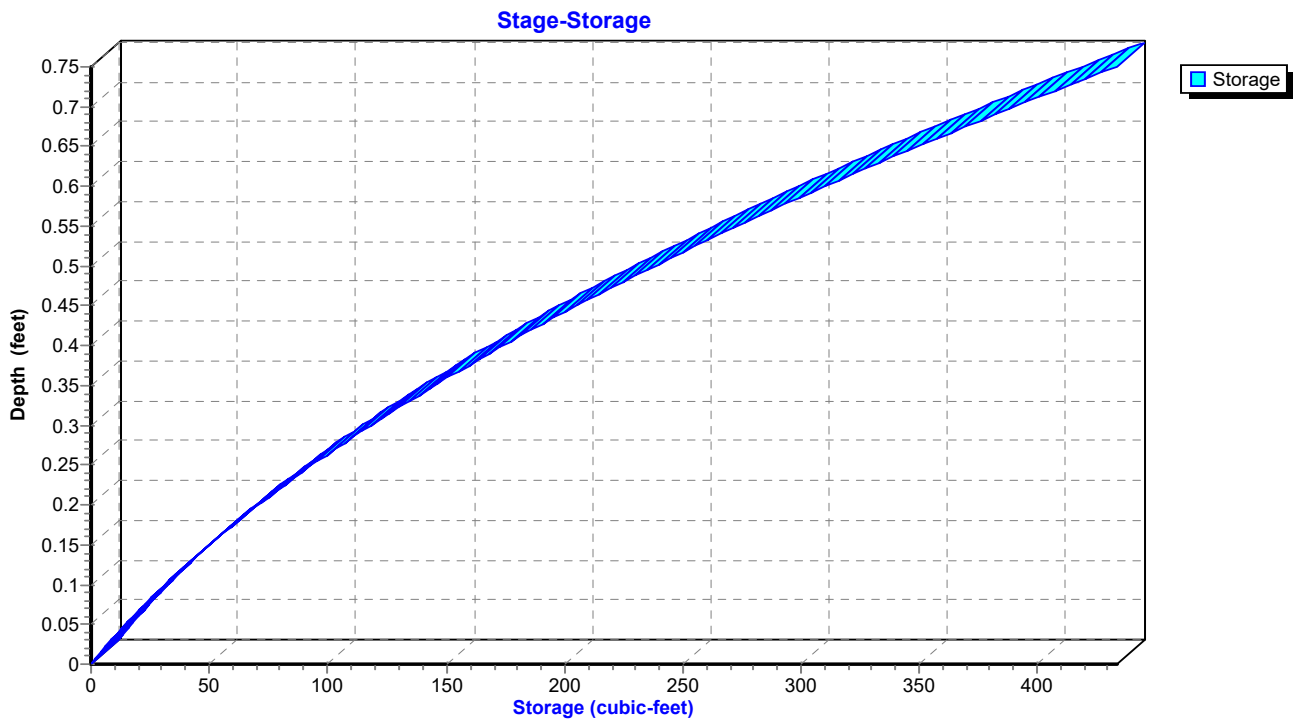
Hydrograph



### Reach 5R: Proposed RRv Swale



### Reach 5R: Proposed RRv Swale





**Hydrograph for Reach 5R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>317.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.04</b>  | <b>14</b>            | <b>317.05</b>    | <b>0.04</b>   |
| 15.00        | 0.01         | 6                    | 317.02           | 0.01          |
| 17.50        | 0.01         | 5                    | 317.02           | 0.01          |
| 20.00        | 0.01         | 4                    | 317.01           | 0.01          |
| 22.50        | 0.00         | 3                    | 317.01           | 0.00          |
| 25.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 317.00           | 0.00          |

**Stage-Discharge for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 317.00              | 0.00                 | 0.00               | 317.53              | 1.69                 | 3.21               |
| 317.01              | 0.15                 | 0.00               | 317.54              | 1.71                 | 3.33               |
| 317.02              | 0.24                 | 0.01               | 317.55              | 1.72                 | 3.46               |
| 317.03              | 0.31                 | 0.02               | 317.56              | 1.74                 | 3.58               |
| 317.04              | 0.38                 | 0.03               | 317.57              | 1.76                 | 3.71               |
| 317.05              | 0.43                 | 0.05               | 317.58              | 1.77                 | 3.85               |
| 317.06              | 0.49                 | 0.06               | 317.59              | 1.79                 | 3.98               |
| 317.07              | 0.53                 | 0.08               | 317.60              | 1.81                 | 4.12               |
| 317.08              | 0.58                 | 0.10               | 317.61              | 1.82                 | 4.26               |
| 317.09              | 0.62                 | 0.13               | 317.62              | 1.84                 | 4.40               |
| 317.10              | 0.66                 | 0.15               | 317.63              | 1.85                 | 4.55               |
| 317.11              | 0.70                 | 0.18               | 317.64              | 1.87                 | 4.69               |
| 317.12              | 0.74                 | 0.21               | 317.65              | 1.89                 | 4.84               |
| 317.13              | 0.77                 | 0.24               | 317.66              | 1.90                 | 5.00               |
| 317.14              | 0.81                 | 0.27               | 317.67              | 1.92                 | 5.15               |
| 317.15              | 0.84                 | 0.31               | 317.68              | 1.93                 | 5.31               |
| 317.16              | 0.87                 | 0.35               | 317.69              | 1.95                 | 5.48               |
| 317.17              | 0.90                 | 0.38               | 317.70              | 1.97                 | 5.64               |
| 317.18              | 0.93                 | 0.43               | 317.71              | 1.98                 | 5.81               |
| 317.19              | 0.96                 | 0.47               | 317.72              | 2.00                 | 5.98               |
| 317.20              | 0.99                 | 0.51               | 317.73              | 2.01                 | 6.15               |
| 317.21              | 1.02                 | 0.56               | 317.74              | 2.03                 | 6.33               |
| 317.22              | 1.04                 | 0.61               | 317.75              | <b>2.04</b>          | <b>6.51</b>        |
| 317.23              | 1.07                 | 0.66               |                     |                      |                    |
| 317.24              | 1.09                 | 0.71               |                     |                      |                    |
| 317.25              | 1.12                 | 0.77               |                     |                      |                    |
| 317.26              | 1.14                 | 0.83               |                     |                      |                    |
| 317.27              | 1.17                 | 0.89               |                     |                      |                    |
| 317.28              | 1.19                 | 0.95               |                     |                      |                    |
| 317.29              | 1.21                 | 1.01               |                     |                      |                    |
| 317.30              | 1.24                 | 1.08               |                     |                      |                    |
| 317.31              | 1.26                 | 1.14               |                     |                      |                    |
| 317.32              | 1.28                 | 1.21               |                     |                      |                    |
| 317.33              | 1.30                 | 1.29               |                     |                      |                    |
| 317.34              | 1.33                 | 1.36               |                     |                      |                    |
| 317.35              | 1.35                 | 1.44               |                     |                      |                    |
| 317.36              | 1.37                 | 1.52               |                     |                      |                    |
| 317.37              | 1.39                 | 1.60               |                     |                      |                    |
| 317.38              | 1.41                 | 1.68               |                     |                      |                    |
| 317.39              | 1.43                 | 1.77               |                     |                      |                    |
| 317.40              | 1.45                 | 1.85               |                     |                      |                    |
| 317.41              | 1.47                 | 1.94               |                     |                      |                    |
| 317.42              | 1.49                 | 2.04               |                     |                      |                    |
| 317.43              | 1.51                 | 2.13               |                     |                      |                    |
| 317.44              | 1.53                 | 2.23               |                     |                      |                    |
| 317.45              | 1.54                 | 2.33               |                     |                      |                    |
| 317.46              | 1.56                 | 2.43               |                     |                      |                    |
| 317.47              | 1.58                 | 2.53               |                     |                      |                    |
| 317.48              | 1.60                 | 2.64               |                     |                      |                    |
| 317.49              | 1.62                 | 2.75               |                     |                      |                    |
| 317.50              | 1.64                 | 2.86               |                     |                      |                    |
| 317.51              | 1.65                 | 2.98               |                     |                      |                    |
| 317.52              | 1.67                 | 3.09               |                     |                      |                    |

**Stage-Area-Storage for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 317.00              | 0.0                 | 0                       | 317.53              | 1.9                 | 259                     |
| 317.01              | 0.0                 | 3                       | 317.54              | 2.0                 | 266                     |
| 317.02              | 0.0                 | 6                       | 317.55              | 2.0                 | 273                     |
| 317.03              | 0.1                 | 9                       | 317.56              | 2.1                 | 280                     |
| 317.04              | 0.1                 | 12                      | 317.57              | 2.1                 | 288                     |
| 317.05              | 0.1                 | 15                      | 317.58              | 2.2                 | 295                     |
| 317.06              | 0.1                 | 18                      | 317.59              | 2.2                 | 303                     |
| 317.07              | 0.2                 | 21                      | 317.60              | 2.3                 | 310                     |
| 317.08              | 0.2                 | 24                      | 317.61              | 2.3                 | 318                     |
| 317.09              | 0.2                 | 28                      | 317.62              | 2.4                 | 325                     |
| 317.10              | 0.2                 | 31                      | 317.63              | 2.5                 | 333                     |
| 317.11              | 0.3                 | 35                      | 317.64              | 2.5                 | 341                     |
| 317.12              | 0.3                 | 39                      | 317.65              | 2.6                 | 349                     |
| 317.13              | 0.3                 | 42                      | 317.66              | 2.6                 | 357                     |
| 317.14              | 0.3                 | 46                      | 317.67              | 2.7                 | 365                     |
| 317.15              | 0.4                 | 50                      | 317.68              | 2.7                 | 374                     |
| 317.16              | 0.4                 | 54                      | 317.69              | 2.8                 | 382                     |
| 317.17              | 0.4                 | 58                      | 317.70              | 2.9                 | 390                     |
| 317.18              | 0.5                 | 62                      | 317.71              | 2.9                 | 399                     |
| 317.19              | 0.5                 | 66                      | 317.72              | 3.0                 | 407                     |
| 317.20              | 0.5                 | 71                      | 317.73              | 3.1                 | 416                     |
| 317.21              | 0.6                 | 75                      | 317.74              | 3.1                 | 425                     |
| 317.22              | 0.6                 | 80                      | 317.75              | <b>3.2</b>          | <b>434</b>              |
| 317.23              | 0.6                 | 84                      |                     |                     |                         |
| 317.24              | 0.7                 | 89                      |                     |                     |                         |
| 317.25              | 0.7                 | 94                      |                     |                     |                         |
| 317.26              | 0.7                 | 98                      |                     |                     |                         |
| 317.27              | 0.8                 | 103                     |                     |                     |                         |
| 317.28              | 0.8                 | 108                     |                     |                     |                         |
| 317.29              | 0.8                 | 113                     |                     |                     |                         |
| 317.30              | 0.9                 | 118                     |                     |                     |                         |
| 317.31              | 0.9                 | 124                     |                     |                     |                         |
| 317.32              | 0.9                 | 129                     |                     |                     |                         |
| 317.33              | 1.0                 | 134                     |                     |                     |                         |
| 317.34              | 1.0                 | 140                     |                     |                     |                         |
| 317.35              | 1.1                 | 145                     |                     |                     |                         |
| 317.36              | 1.1                 | 151                     |                     |                     |                         |
| 317.37              | 1.2                 | 157                     |                     |                     |                         |
| 317.38              | 1.2                 | 162                     |                     |                     |                         |
| 317.39              | 1.2                 | 168                     |                     |                     |                         |
| 317.40              | 1.3                 | 174                     |                     |                     |                         |
| 317.41              | 1.3                 | 180                     |                     |                     |                         |
| 317.42              | 1.4                 | 186                     |                     |                     |                         |
| 317.43              | 1.4                 | 192                     |                     |                     |                         |
| 317.44              | 1.5                 | 199                     |                     |                     |                         |
| 317.45              | 1.5                 | 205                     |                     |                     |                         |
| 317.46              | 1.6                 | 211                     |                     |                     |                         |
| 317.47              | 1.6                 | 218                     |                     |                     |                         |
| 317.48              | 1.7                 | 225                     |                     |                     |                         |
| 317.49              | 1.7                 | 231                     |                     |                     |                         |
| 317.50              | 1.8                 | 238                     |                     |                     |                         |
| 317.51              | 1.8                 | 245                     |                     |                     |                         |
| 317.52              | 1.9                 | 252                     |                     |                     |                         |

### Summary for Reach 6R: 12" Culvert Pond Discharge

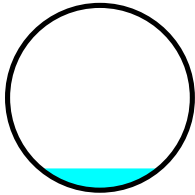
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth > 0.93" for 1-yr event  
Inflow = 0.10 cfs @ 14.03 hrs, Volume= 0.122 af  
Outflow = 0.10 cfs @ 14.03 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.1 min  
Routed to Pond 2ST : Existing Sediment Trap

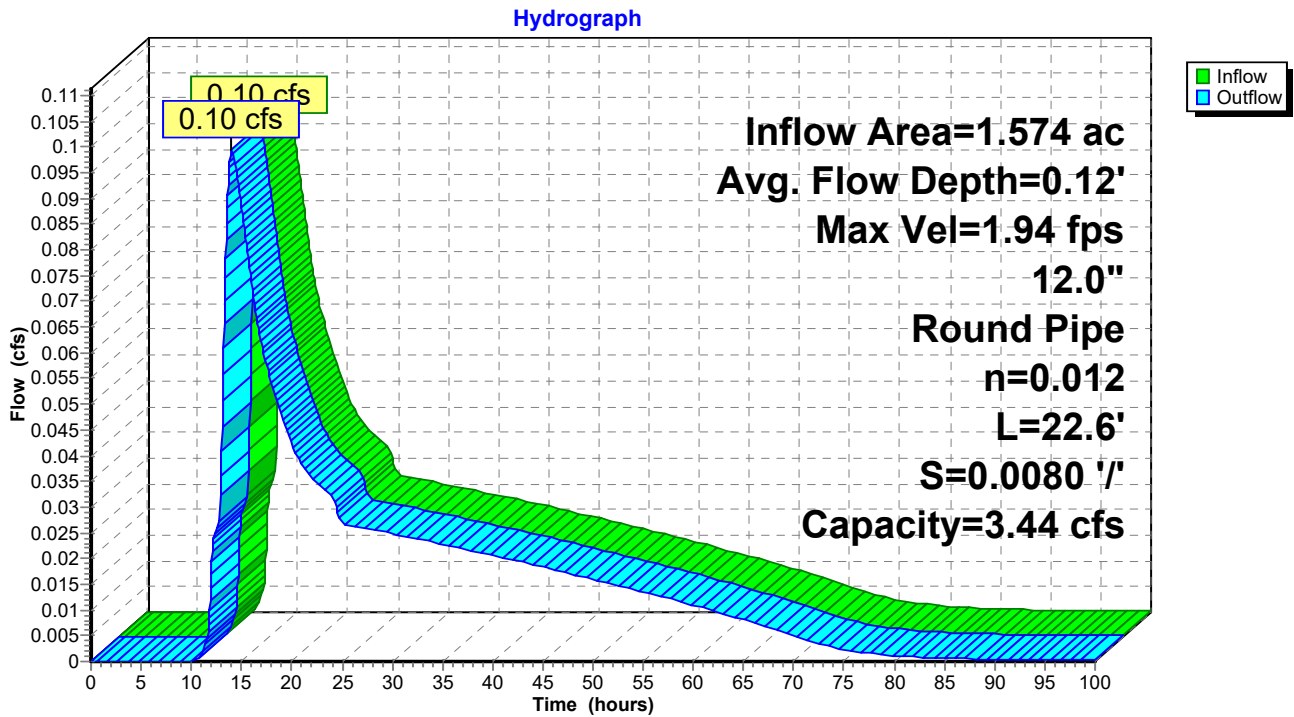
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 1.94 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 0.96 fps, Avg. Travel Time= 0.4 min

Peak Storage= 1 cf @ 14.03 hrs  
Average Depth at Peak Storage= 0.12' , Surface Width= 0.64'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.44 cfs

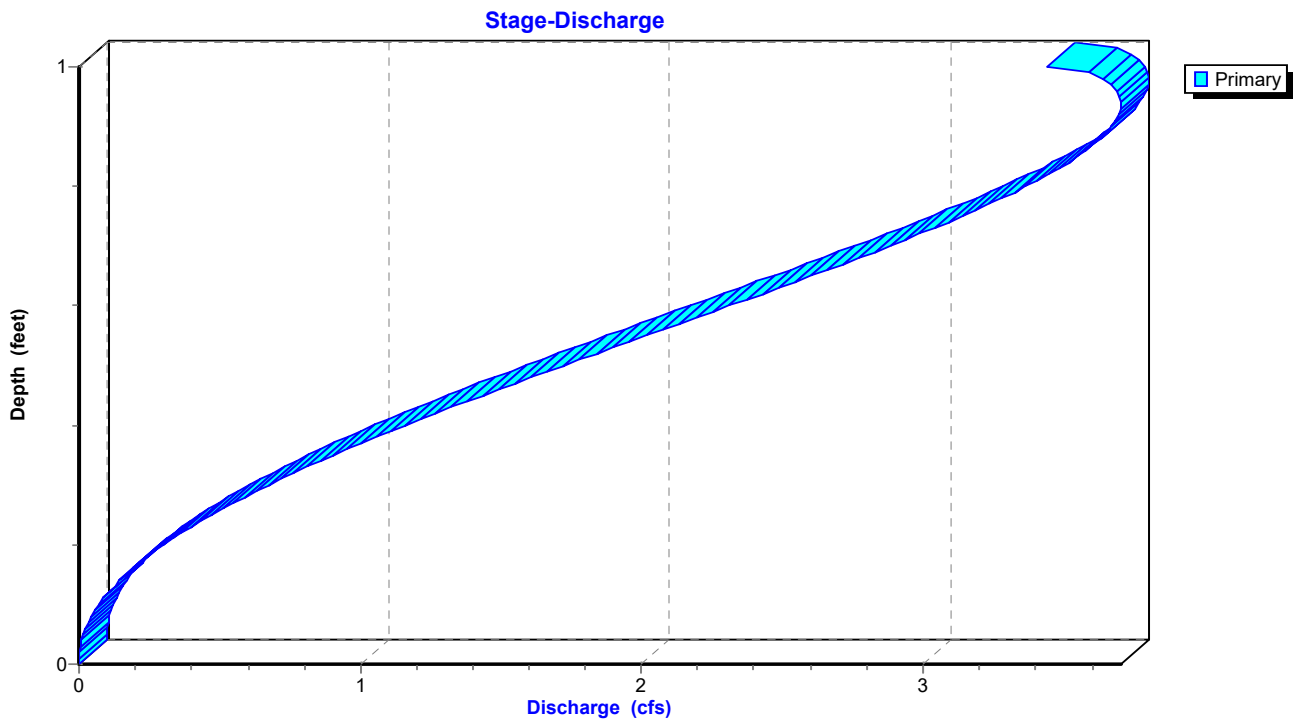
12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 22.6' Slope= 0.0080 '/'  
Inlet Invert= 309.83', Outlet Invert= 309.65'



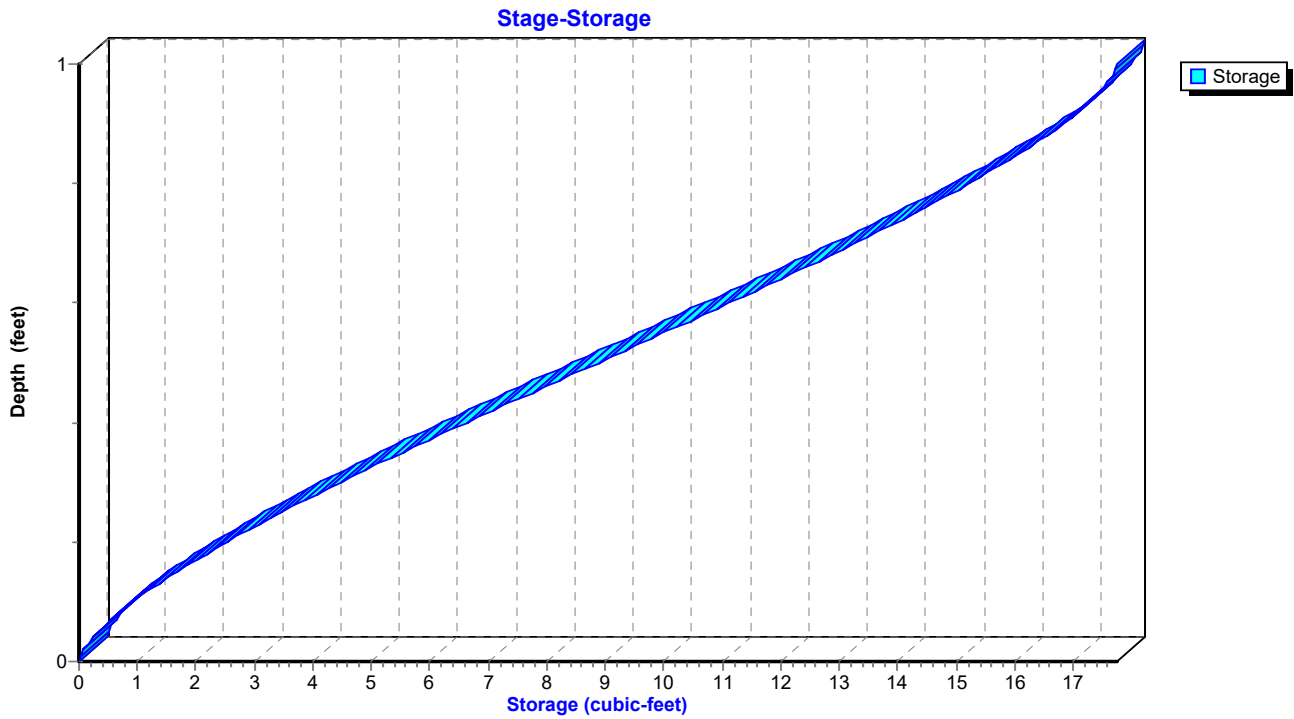
### Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



**Hydrograph for Reach 6R: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 2.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 5.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 7.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 10.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 12.50        | <b>0.03</b>  | <b>0</b>             | <b>309.89</b>    | <b>0.03</b>   |
| 15.00        | <b>0.09</b>  | <b>1</b>             | <b>309.94</b>    | <b>0.09</b>   |
| 17.50        | 0.06         | 1                    | 309.92           | 0.06          |
| 20.00        | 0.04         | 1                    | 309.91           | 0.04          |
| 22.50        | 0.03         | 1                    | 309.90           | 0.03          |
| 25.00        | 0.03         | 0                    | 309.89           | 0.03          |
| 27.50        | 0.03         | 0                    | 309.89           | 0.03          |
| 30.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 32.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 35.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 37.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 40.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 42.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 45.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 47.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 50.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 52.50        | 0.01         | 0                    | 309.88           | 0.01          |
| 55.00        | 0.01         | 0                    | 309.88           | 0.01          |
| 57.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 60.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 62.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 65.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 67.50        | 0.01         | 0                    | 309.86           | 0.01          |
| 70.00        | 0.01         | 0                    | 309.86           | 0.01          |
| 72.50        | 0.00         | 0                    | 309.85           | 0.00          |
| 75.00        | 0.00         | 0                    | 309.85           | 0.00          |
| 77.50        | 0.00         | 0                    | 309.85           | 0.00          |
| 80.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 82.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 85.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 87.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 90.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 92.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 95.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 97.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 100.00       | 0.00         | 0                    | 309.83           | 0.00          |

**Stage-Discharge for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 309.83              | 0.00                 | 0.00               | 310.36              | 4.49                 | 1.90               |
| 309.84              | 0.39                 | 0.00               | 310.37              | 4.53                 | 1.96               |
| 309.85              | 0.62                 | 0.00               | 310.38              | 4.56                 | 2.02               |
| 309.86              | 0.81                 | 0.01               | 310.39              | 4.59                 | 2.08               |
| 309.87              | 0.97                 | 0.01               | 310.40              | 4.62                 | 2.14               |
| 309.88              | 1.13                 | 0.02               | 310.41              | 4.65                 | 2.20               |
| 309.89              | 1.27                 | 0.02               | 310.42              | 4.68                 | 2.26               |
| 309.90              | 1.40                 | 0.03               | 310.43              | 4.70                 | 2.31               |
| 309.91              | 1.53                 | 0.04               | 310.44              | 4.73                 | 2.37               |
| 309.92              | 1.65                 | 0.06               | 310.45              | 4.75                 | 2.43               |
| 309.93              | 1.76                 | 0.07               | 310.46              | 4.78                 | 2.49               |
| 309.94              | 1.87                 | 0.09               | 310.47              | 4.80                 | 2.55               |
| 309.95              | 1.97                 | 0.11               | 310.48              | 4.82                 | 2.61               |
| 309.96              | 2.07                 | 0.12               | 310.49              | 4.84                 | 2.66               |
| 309.97              | 2.17                 | 0.15               | 310.50              | 4.86                 | 2.72               |
| 309.98              | 2.27                 | 0.17               | 310.51              | 4.88                 | 2.77               |
| 309.99              | 2.36                 | 0.19               | 310.52              | 4.90                 | 2.83               |
| 310.00              | 2.45                 | 0.22               | 310.53              | 4.91                 | 2.88               |
| 310.01              | 2.53                 | 0.24               | 310.54              | 4.93                 | 2.94               |
| 310.02              | 2.62                 | 0.27               | 310.55              | 4.94                 | 2.99               |
| 310.03              | 2.70                 | 0.30               | 310.56              | 4.95                 | 3.04               |
| 310.04              | 2.78                 | 0.33               | 310.57              | 4.96                 | 3.09               |
| 310.05              | 2.85                 | 0.37               | 310.58              | 4.97                 | 3.14               |
| 310.06              | 2.93                 | 0.40               | 310.59              | 4.98                 | 3.19               |
| 310.07              | 3.00                 | 0.44               | 310.60              | 4.99                 | 3.24               |
| 310.08              | 3.07                 | 0.47               | 310.61              | 4.99                 | 3.28               |
| 310.09              | 3.14                 | 0.51               | 310.62              | 5.00                 | 3.32               |
| 310.10              | 3.21                 | 0.55               | 310.63              | 5.00                 | 3.37               |
| 310.11              | 3.28                 | 0.59               | 310.64              | <b>5.00</b>          | 3.41               |
| 310.12              | 3.34                 | 0.63               | 310.65              | 5.00                 | 3.45               |
| 310.13              | 3.40                 | 0.67               | 310.66              | 5.00                 | 3.48               |
| 310.14              | 3.47                 | 0.72               | 310.67              | 4.99                 | 3.52               |
| 310.15              | 3.53                 | 0.76               | 310.68              | 4.99                 | 3.55               |
| 310.16              | 3.58                 | 0.81               | 310.69              | 4.98                 | 3.58               |
| 310.17              | 3.64                 | 0.86               | 310.70              | 4.97                 | 3.61               |
| 310.18              | 3.70                 | 0.91               | 310.71              | 4.96                 | 3.63               |
| 310.19              | 3.75                 | 0.95               | 310.72              | 4.95                 | 3.65               |
| 310.20              | 3.80                 | 1.01               | 310.73              | 4.93                 | 3.67               |
| 310.21              | 3.86                 | 1.06               | 310.74              | 4.91                 | 3.69               |
| 310.22              | 3.91                 | 1.11               | 310.75              | 4.89                 | 3.70               |
| 310.23              | 3.96                 | 1.16               | 310.76              | 4.87                 | 3.70               |
| 310.24              | 4.00                 | 1.21               | 310.77              | 4.84                 | <b>3.71</b>        |
| 310.25              | 4.05                 | 1.27               | 310.78              | 4.80                 | 3.70               |
| 310.26              | 4.10                 | 1.32               | 310.79              | 4.76                 | 3.69               |
| 310.27              | 4.14                 | 1.38               | 310.80              | 4.72                 | 3.67               |
| 310.28              | 4.19                 | 1.43               | 310.81              | 4.66                 | 3.64               |
| 310.29              | 4.23                 | 1.49               | 310.82              | 4.58                 | 3.59               |
| 310.30              | 4.27                 | 1.55               | 310.83              | 4.39                 | 3.44               |
| 310.31              | 4.31                 | 1.61               |                     |                      |                    |
| 310.32              | 4.35                 | 1.66               |                     |                      |                    |
| 310.33              | 4.39                 | 1.72               |                     |                      |                    |
| 310.34              | 4.42                 | 1.78               |                     |                      |                    |
| 310.35              | 4.46                 | 1.84               |                     |                      |                    |



**Stage-Area-Storage for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 309.83              | 0.0                 | 0                       | 310.36              | 0.4                 | 10                      |
| 309.84              | 0.0                 | 0                       | 310.37              | 0.4                 | 10                      |
| 309.85              | 0.0                 | 0                       | 310.38              | 0.4                 | 10                      |
| 309.86              | 0.0                 | 0                       | 310.39              | 0.5                 | 10                      |
| 309.87              | 0.0                 | 0                       | 310.40              | 0.5                 | 10                      |
| 309.88              | 0.0                 | 0                       | 310.41              | 0.5                 | 11                      |
| 309.89              | 0.0                 | 0                       | 310.42              | 0.5                 | 11                      |
| 309.90              | 0.0                 | 1                       | 310.43              | 0.5                 | 11                      |
| 309.91              | 0.0                 | 1                       | 310.44              | 0.5                 | 11                      |
| 309.92              | 0.0                 | 1                       | 310.45              | 0.5                 | 12                      |
| 309.93              | 0.0                 | 1                       | 310.46              | 0.5                 | 12                      |
| 309.94              | 0.0                 | 1                       | 310.47              | 0.5                 | 12                      |
| 309.95              | 0.1                 | 1                       | 310.48              | 0.5                 | 12                      |
| 309.96              | 0.1                 | 1                       | 310.49              | 0.5                 | 12                      |
| 309.97              | 0.1                 | 2                       | 310.50              | 0.6                 | 13                      |
| 309.98              | 0.1                 | 2                       | 310.51              | 0.6                 | 13                      |
| 309.99              | 0.1                 | 2                       | 310.52              | 0.6                 | 13                      |
| 310.00              | 0.1                 | 2                       | 310.53              | 0.6                 | 13                      |
| 310.01              | 0.1                 | 2                       | 310.54              | 0.6                 | 13                      |
| 310.02              | 0.1                 | 2                       | 310.55              | 0.6                 | 14                      |
| 310.03              | 0.1                 | 3                       | 310.56              | 0.6                 | 14                      |
| 310.04              | 0.1                 | 3                       | 310.57              | 0.6                 | 14                      |
| 310.05              | 0.1                 | 3                       | 310.58              | 0.6                 | 14                      |
| 310.06              | 0.1                 | 3                       | 310.59              | 0.6                 | 14                      |
| 310.07              | 0.1                 | 3                       | 310.60              | 0.6                 | 15                      |
| 310.08              | 0.2                 | 3                       | 310.61              | 0.7                 | 15                      |
| 310.09              | 0.2                 | 4                       | 310.62              | 0.7                 | 15                      |
| 310.10              | 0.2                 | 4                       | 310.63              | 0.7                 | 15                      |
| 310.11              | 0.2                 | 4                       | 310.64              | 0.7                 | 15                      |
| 310.12              | 0.2                 | 4                       | 310.65              | 0.7                 | 16                      |
| 310.13              | 0.2                 | 4                       | 310.66              | 0.7                 | 16                      |
| 310.14              | 0.2                 | 5                       | 310.67              | 0.7                 | 16                      |
| 310.15              | 0.2                 | 5                       | 310.68              | 0.7                 | 16                      |
| 310.16              | 0.2                 | 5                       | 310.69              | 0.7                 | 16                      |
| 310.17              | 0.2                 | 5                       | 310.70              | 0.7                 | 16                      |
| 310.18              | 0.2                 | 6                       | 310.71              | 0.7                 | 17                      |
| 310.19              | 0.3                 | 6                       | 310.72              | 0.7                 | 17                      |
| 310.20              | 0.3                 | 6                       | 310.73              | 0.7                 | 17                      |
| 310.21              | 0.3                 | 6                       | 310.74              | 0.8                 | 17                      |
| 310.22              | 0.3                 | 6                       | 310.75              | 0.8                 | 17                      |
| 310.23              | 0.3                 | 7                       | 310.76              | 0.8                 | 17                      |
| 310.24              | 0.3                 | 7                       | 310.77              | 0.8                 | 17                      |
| 310.25              | 0.3                 | 7                       | 310.78              | 0.8                 | 17                      |
| 310.26              | 0.3                 | 7                       | 310.79              | 0.8                 | 18                      |
| 310.27              | 0.3                 | 8                       | 310.80              | 0.8                 | 18                      |
| 310.28              | 0.3                 | 8                       | 310.81              | 0.8                 | 18                      |
| 310.29              | 0.4                 | 8                       | 310.82              | 0.8                 | 18                      |
| 310.30              | 0.4                 | 8                       | 310.83              | <b>0.8</b>          | <b>18</b>               |
| 310.31              | 0.4                 | 8                       |                     |                     |                         |
| 310.32              | 0.4                 | 9                       |                     |                     |                         |
| 310.33              | 0.4                 | 9                       |                     |                     |                         |
| 310.34              | 0.4                 | 9                       |                     |                     |                         |
| 310.35              | 0.4                 | 9                       |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.182 ac, 9.18% Impervious, Inflow Depth = 0.03" for 1-yr event  
 Inflow = 0.01 cfs @ 17.46 hrs, Volume= 0.008 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 315.57' @ 24.65 hrs Surf.Area= 0.129 ac Storage= 0.201 af (0.008 af above start)

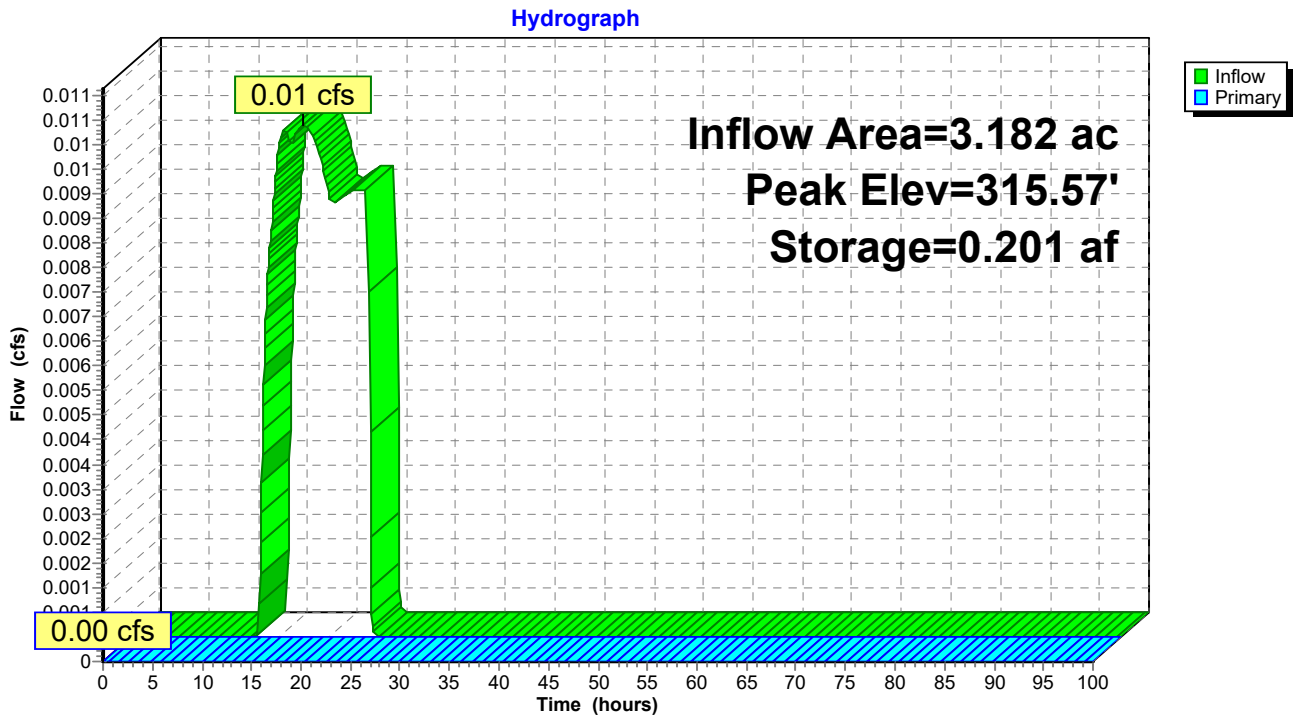
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |
|------------------|-------------------|---------------|--|-----------------------|------------------|
| #1               | 313.83'           | 0.443 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |
| 313.83           | 0.088             | 271.6         | 0.000  | 0.000                 | 0.088            |
| 314.00           | 0.107             | 290.3         | 0.017  | 0.017                 | 0.107            |
| 315.50           | 0.128             | 309.9         | 0.176  | 0.193                 | 0.131            |
| 316.00           | 0.139             | 319.8         | 0.067  | 0.259                 | 0.143            |
| 316.50           | 0.154             | 348.8         | 0.073  | 0.333                 | 0.179            |
| 317.00           | 0.295             | 446.8         | 0.110  | 0.443                 | 0.321            |

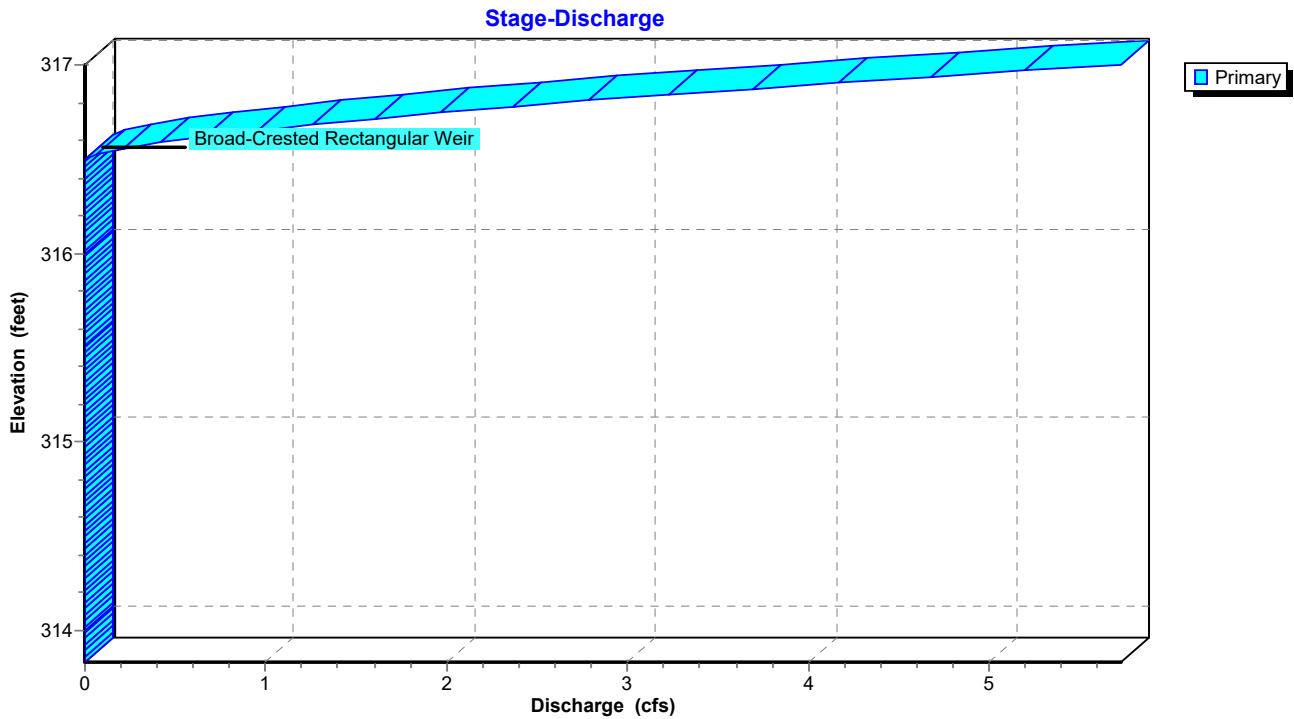
| Device | Routing | Invert  | Outlet Devices  |      |      |      |      |      |      |      |      |
|--------|---------|---------|---|------|------|------|------|------|------|------|------|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |      |      |      |      |      |      |      |      |
|        |         |         | Head (feet)   | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 |
|        |         |         | Coef. (English)   | 2.68 | 2.70 | 2.70 | 2.64 | 2.63 | 2.64 | 2.64 | 2.63 |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=315.50' TW=316.00' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

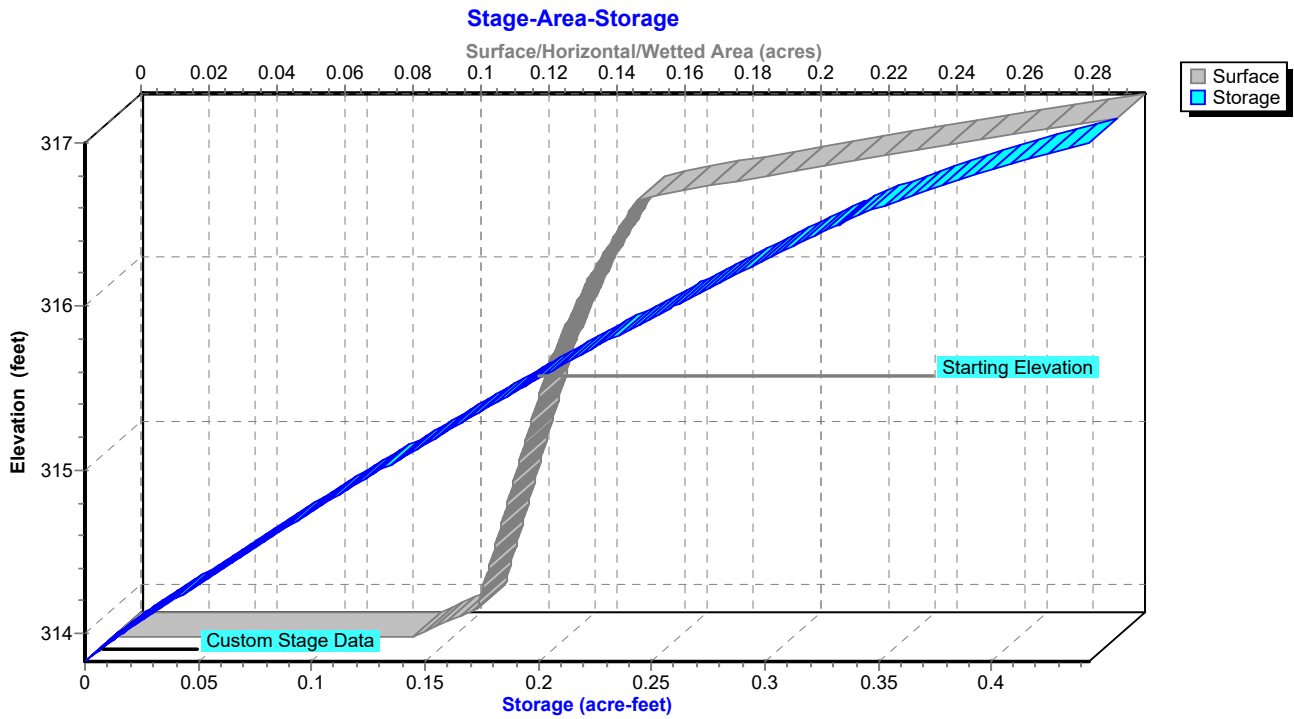
**Pond 1ST: Existing Sediment Trap**



**Pond 1ST: Existing Sediment Trap**



### Pond 1ST: Existing Sediment Trap



**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.193               | 315.50           | <b>0.00</b>   |
| 2.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 5.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 7.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 10.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 12.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 15.00        | <b>0.01</b>  | 0.194               | 315.51           | 0.00          |
| 17.50        | <b>0.01</b>  | 0.196               | 315.53           | 0.00          |
| 20.00        | 0.01         | 0.198               | 315.54           | 0.00          |
| 22.50        | 0.01         | <b>0.200</b>        | <b>315.56</b>    | 0.00          |
| 25.00        | 0.00         | <b>0.201</b>        | <b>315.57</b>    | 0.00          |
| 27.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 30.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 32.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 35.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 37.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 40.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 42.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 45.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 47.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 50.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 52.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 55.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 57.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 60.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 62.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 65.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 67.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 70.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 72.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 75.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 77.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 80.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 82.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 85.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 87.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 90.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 92.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 95.00        | 0.00         | 0.201               | 315.57           | 0.00          |
| 97.50        | 0.00         | 0.201               | 315.57           | 0.00          |
| 100.00       | 0.00         | 0.201               | 315.57           | 0.00          |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

[63] Warning: Exceeded Reach 6R INLET depth by 0.34' @ 99.95 hrs

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth > 0.36" for 1-yr event  
 Inflow = 0.76 cfs @ 12.00 hrs, Volume= 0.160 af  
 Outflow = 0.01 cfs @ 56.93 hrs, Volume= 0.014 af, Atten= 98%, Lag= 2,695.7 min  
 Primary = 0.01 cfs @ 56.93 hrs, Volume= 0.014 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.18' @ 56.93 hrs Surf.Area= 0.091 ac Storage= 0.158 af (0.146 af above start)

Plug-Flow detention time= 3,946.4 min calculated for 0.003 af (2% of inflow)  
 Center-of-Mass det. time= 2,262.2 min ( 3,921.2 - 1,659.1 )

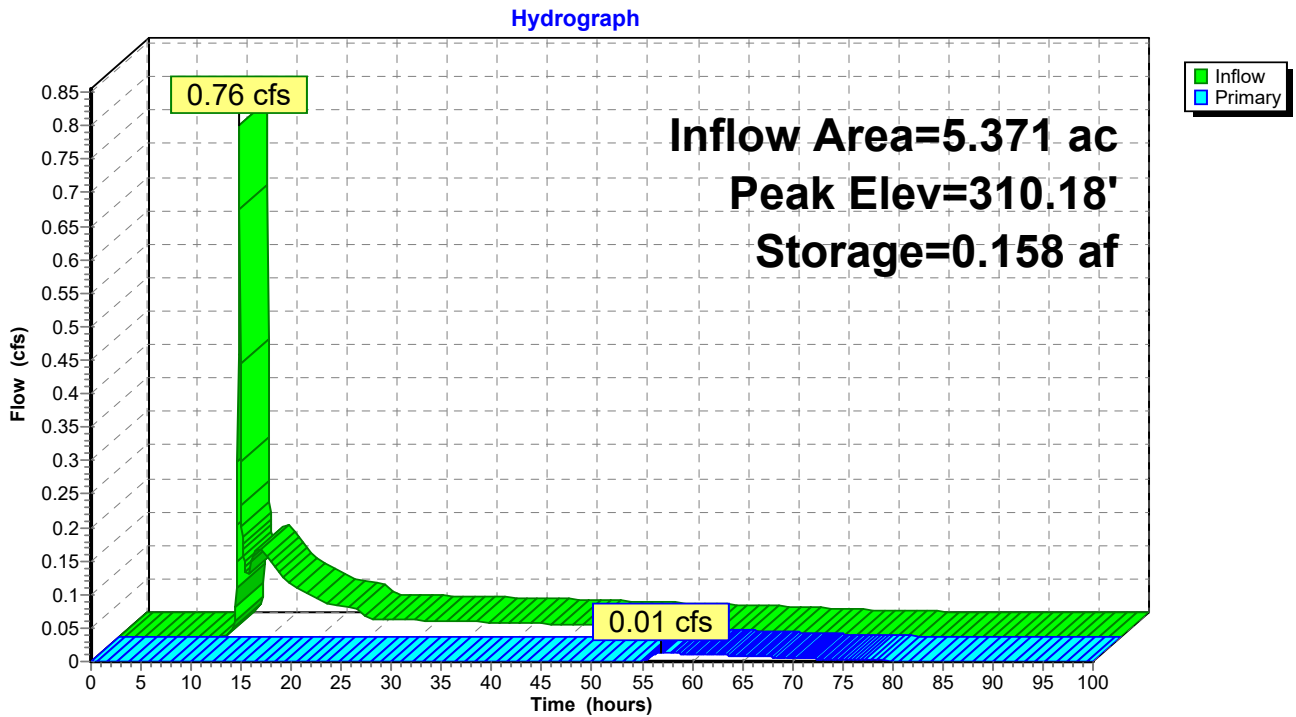
| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |  |
|------------------|-------------------|---------------|--|-----------------------|------------------|--|
| #1               | 307.00'           | 0.248 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |  |
| 307.00           | 0.019             | 188.4         | 0.000  | 0.000                 | 0.019            |  |
| 307.50           | 0.026             | 206.4         | 0.011  | 0.011                 | 0.032            |  |
| 308.00           | 0.036             | 232.2         | 0.015  | 0.027                 | 0.053            |  |
| 309.00           | 0.057             | 269.3         | 0.046  | 0.073                 | 0.087            |  |
| 310.00           | 0.083             | 316.3         | 0.070  | 0.142                 | 0.138            |  |
| 311.00           | 0.131             | 434.9         | 0.106  | 0.248                 | 0.301            |  |

| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64    |  |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74                         |  |  |  |  |  |  |  |  |  |  |

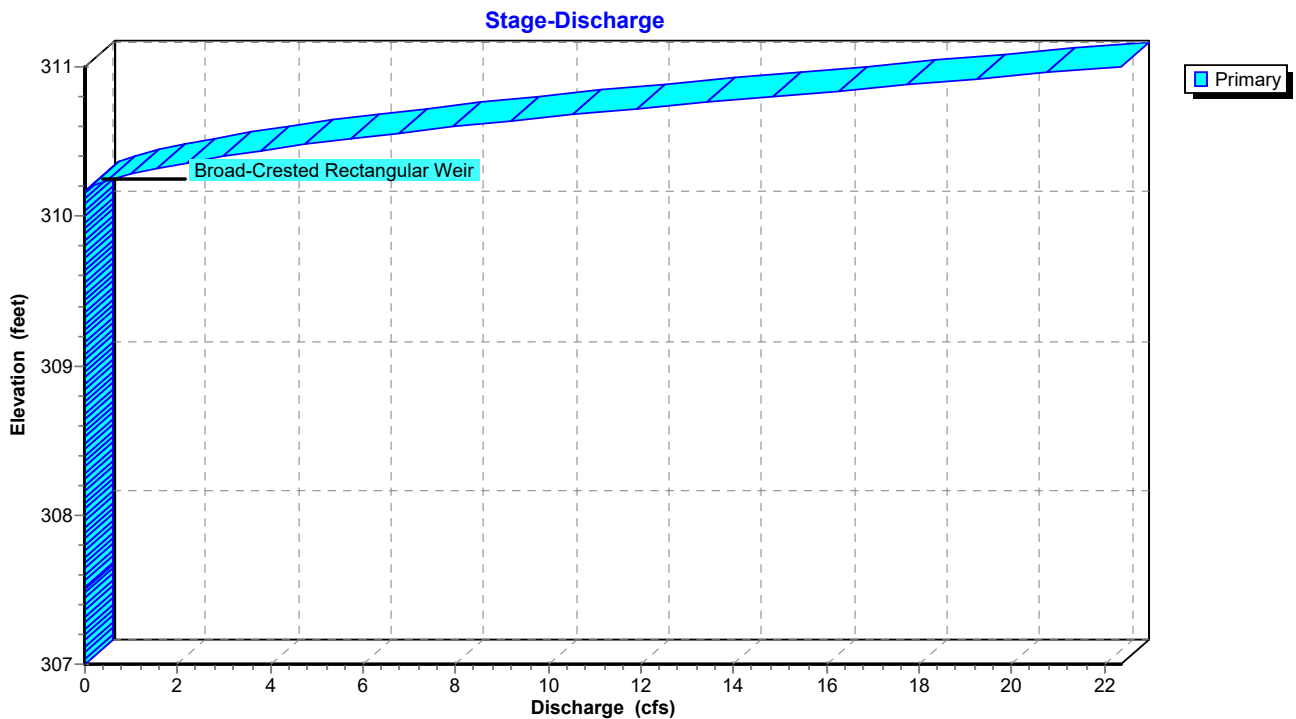
**Primary OutFlow** Max=0.01 cfs @ 56.93 hrs HW=310.18' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.19 fps)



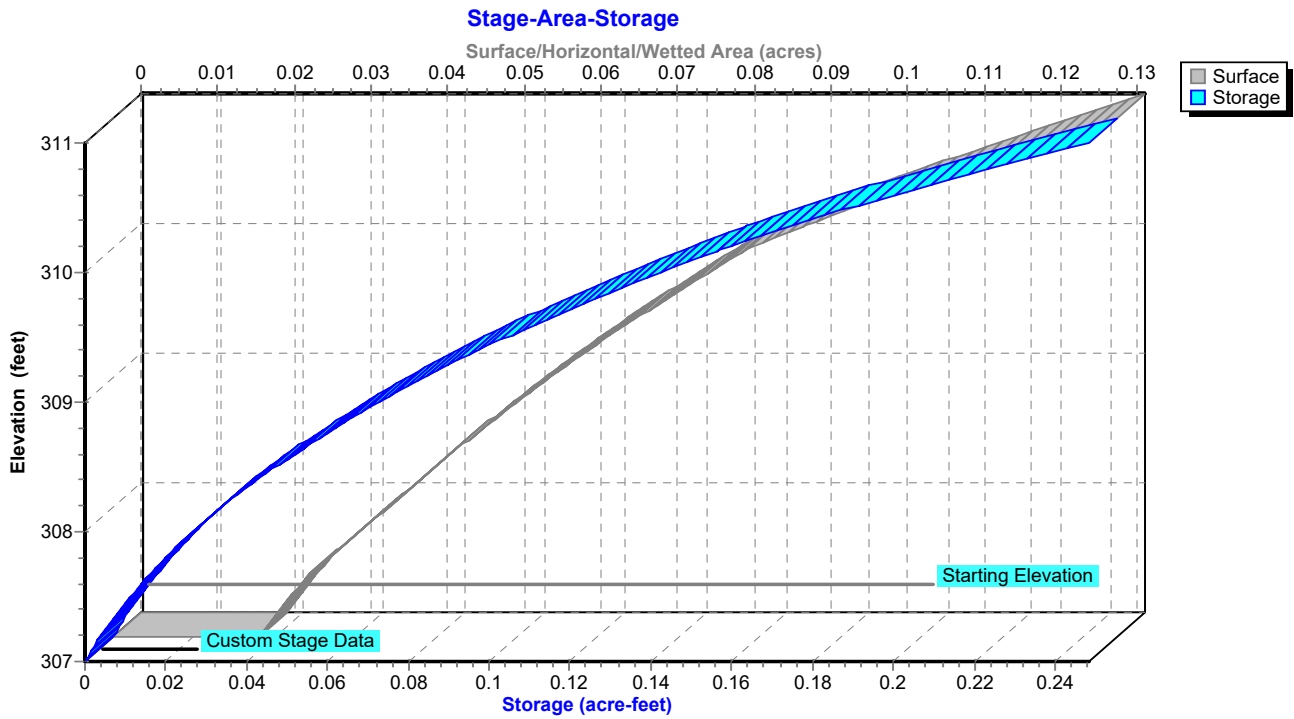
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 2.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 5.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 7.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.011               | 307.50           | 0.00          |
| 12.50        | <b>0.11</b>  | 0.032               | 308.13           | 0.00          |
| 15.00        | 0.11         | 0.056               | 308.68           | 0.00          |
| 17.50        | 0.07         | 0.075               | 309.03           | 0.00          |
| 20.00        | 0.05         | 0.088               | 309.25           | 0.00          |
| 22.50        | 0.05         | 0.098               | 309.41           | 0.00          |
| 25.00        | 0.03         | 0.106               | 309.53           | 0.00          |
| 27.50        | 0.03         | 0.112               | 309.60           | 0.00          |
| 30.00        | 0.02         | 0.117               | 309.67           | 0.00          |
| 32.50        | 0.02         | 0.122               | 309.74           | 0.00          |
| 35.00        | 0.02         | 0.127               | 309.80           | 0.00          |
| 37.50        | 0.02         | 0.131               | 309.86           | 0.00          |
| 40.00        | 0.02         | 0.136               | 309.92           | 0.00          |
| 42.50        | 0.02         | 0.140               | 309.97           | 0.00          |
| 45.00        | 0.02         | 0.144               | 310.02           | 0.00          |
| 47.50        | 0.02         | 0.147               | 310.06           | 0.00          |
| 50.00        | 0.02         | 0.151               | 310.10           | 0.00          |
| 52.50        | 0.01         | 0.154               | 310.14           | 0.00          |
| 55.00        | 0.01         | <b>0.157</b>        | <b>310.17</b>    | <b>0.00</b>   |
| 57.50        | 0.01         | <b>0.158</b>        | <b>310.18</b>    | <b>0.01</b>   |
| 60.00        | 0.01         | 0.158               | 310.18           | 0.01          |
| 62.50        | 0.01         | 0.158               | 310.18           | 0.01          |
| 65.00        | 0.01         | 0.157               | 310.17           | 0.01          |
| 67.50        | 0.01         | 0.157               | 310.17           | 0.01          |
| 70.00        | 0.01         | 0.157               | 310.17           | 0.01          |
| 72.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 75.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 77.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 80.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 82.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 85.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 87.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 90.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 92.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 95.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 97.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 100.00       | 0.00         | 0.157               | 310.17           | 0.00          |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

**Summary for Pond 3P: Proposed Stormwater Pond**

[61] Hint: Exceeded Reach 3R outlet invert by 0.02' @ 14.05 hrs

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 0.93" for 1-yr event  
 Inflow = 2.04 cfs @ 12.02 hrs, Volume= 0.122 af  
 Outflow = 0.10 cfs @ 14.03 hrs, Volume= 0.122 af, Atten= 95%, Lag= 120.6 min  
 Primary = 0.10 cfs @ 14.03 hrs, Volume= 0.122 af  
 Routed to Reach 6R : 12" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 309.83' Surf.Area= 1,843 sf Storage= 1,307 cf  
 Peak Elev= 311.02' @ 14.03 hrs Surf.Area= 3,385 sf Storage= 4,468 cf (3,161 cf above start)

Plug-Flow detention time= 1,495.3 min calculated for 0.092 af (75% of inflow)  
 Center-of-Mass det. time= 1,059.6 min ( 1,912.7 - 853.2 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 311.25' | 8,217 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 308.00' | 3,905 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 307.25' | 1,412 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 13,534 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 311.25           | 3,844             | 283.0         | 0                      | 0                      | 3,844            |
| 312.00           | 4,629             | 305.0         | 3,173                  | 3,173                  | 4,897            |
| 312.95           | 6,020             | 367.0         | 5,044                  | 8,217                  | 8,228            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 308.00           | 58                | 51.0          | 0                      | 0                      | 58               |
| 309.00           | 305               | 90.0          | 165                    | 165                    | 501              |
| 310.00           | 1,751             | 173.0         | 929                    | 1,094                  | 2,243            |
| 311.00           | 2,543             | 203.0         | 2,135                  | 3,229                  | 3,160            |
| 311.25           | 2,867             | 219.0         | 676                    | 3,905                  | 3,700            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 307.25           | 22                | 18.0          | 0                      | 0                      | 22               |
| 308.00           | 103               | 36.0          | 43                     | 43                     | 102              |
| 309.00           | 241               | 56.0          | 167                    | 210                    | 255              |
| 310.00           | 465               | 78.0          | 347                    | 557                    | 499              |
| 311.00           | 814               | 105.0         | 631                    | 1,189                  | 903              |
| 311.25           | 976               | 119.0         | 223                    | 1,412                  | 1,154            |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 311.68' | <b>15.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65<br>2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |
| #2     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #3     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #4     | Primary   | 309.83' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.10 cfs @ 14.03 hrs HW=311.02' TW=309.95' (Dynamic Tailwater)

↳ **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.05 fps)

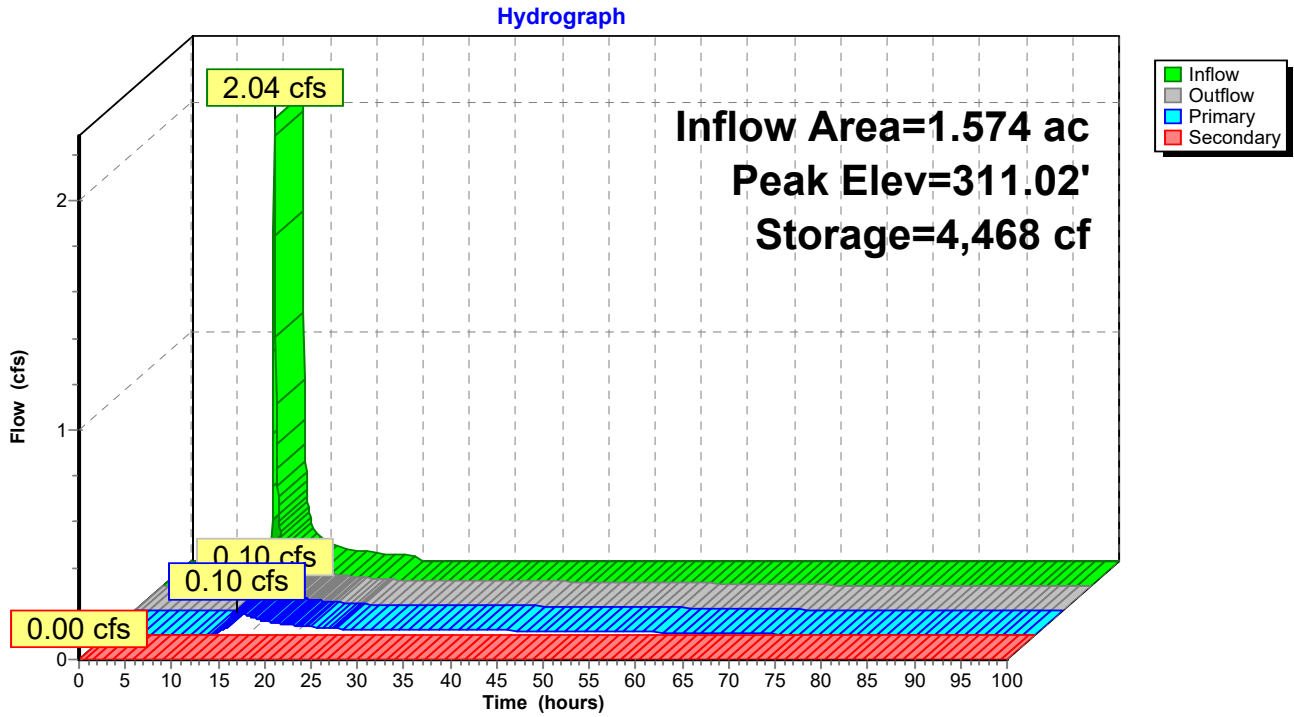
↳ **3=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.05 fps)

↳ **4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 4.98 fps)

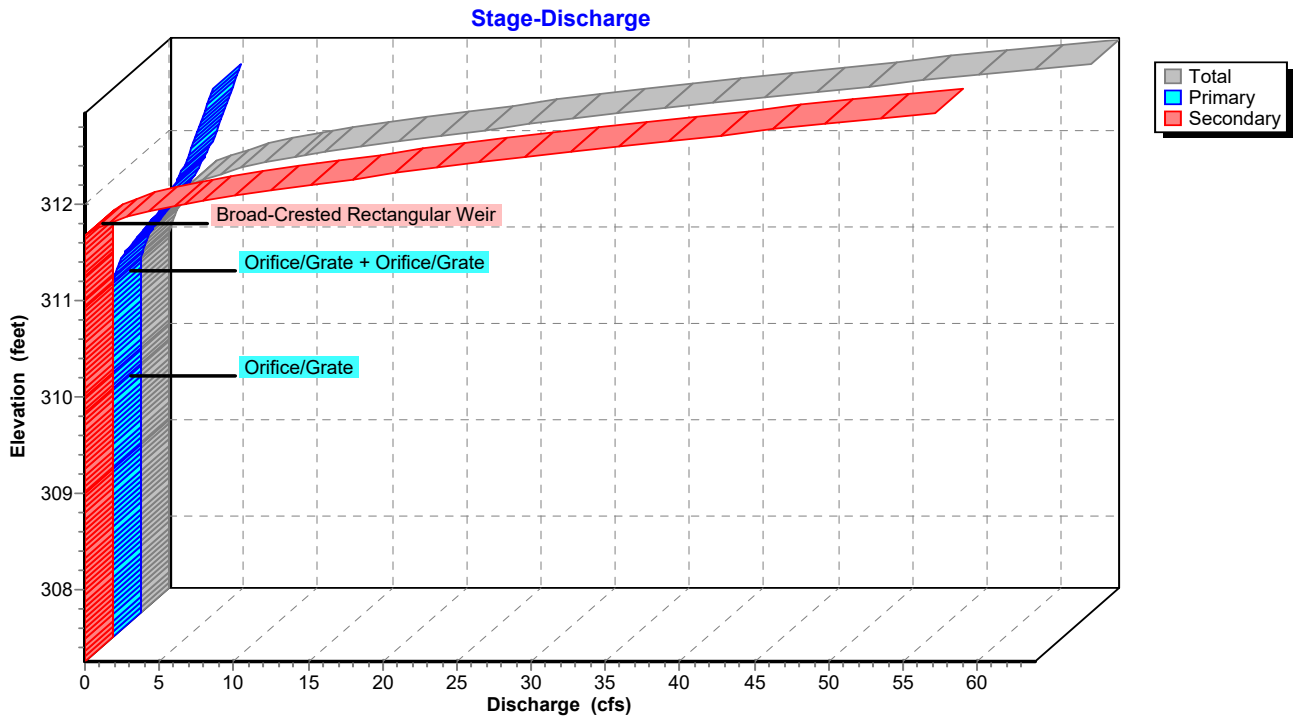
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=309.83' TW=307.50' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

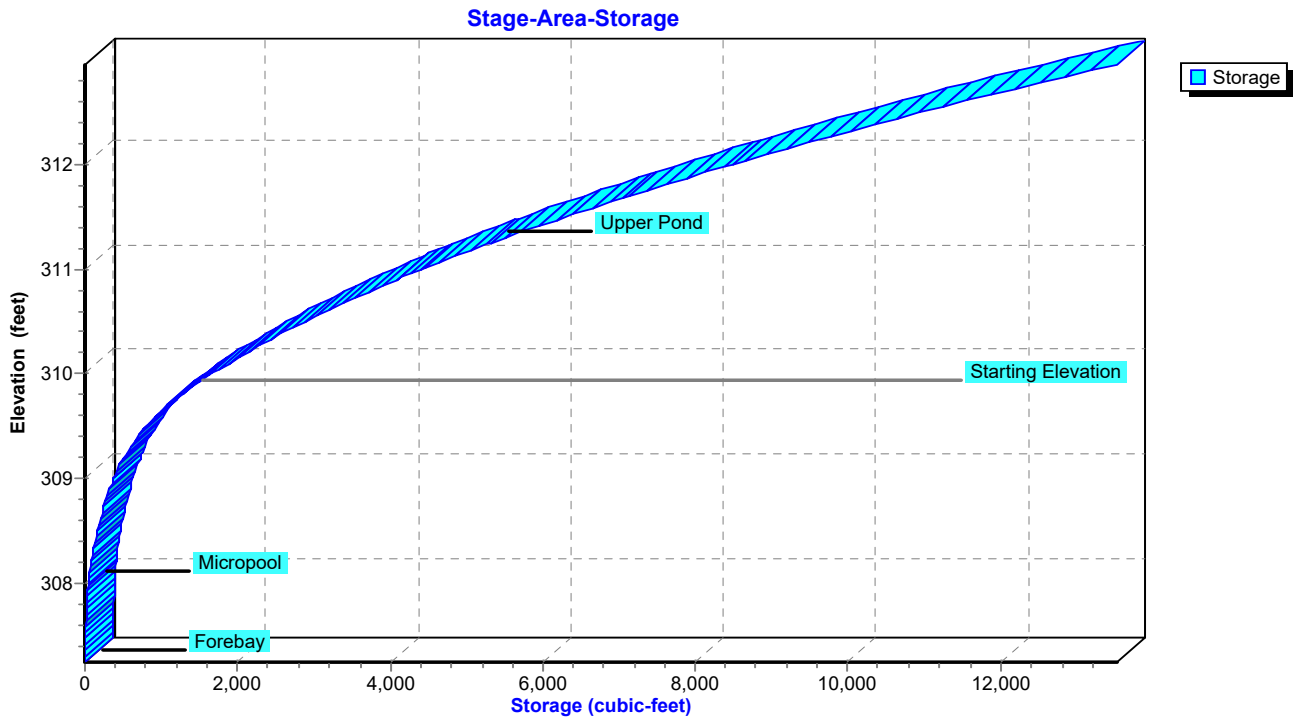
**Pond 3P: Proposed Stormwater Pond**



### Pond 3P: Proposed Stormwater Pond



### Pond 3P: Proposed Stormwater Pond





**Hydrograph for Pond 3P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.01</b>  | 1,321                | 309.84           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>0.32</b>  | <b>3,943</b>         | <b>310.85</b>    | <b>0.03</b>   | <b>0.03</b>   | 0.00            |
| 15.00        | 0.08         | <b>4,441</b>         | <b>311.01</b>    | <b>0.09</b>   | <b>0.09</b>   | 0.00            |
| 17.50        | 0.05         | 4,355                | 310.98           | 0.06          | 0.06          | 0.00            |
| 20.00        | 0.04         | 4,297                | 310.96           | 0.04          | 0.04          | 0.00            |
| 22.50        | 0.03         | 4,253                | 310.95           | 0.03          | 0.03          | 0.00            |
| 25.00        | 0.00         | 4,170                | 310.93           | 0.03          | 0.03          | 0.00            |
| 27.50        | 0.00         | 3,942                | 310.85           | 0.03          | 0.03          | 0.00            |
| 30.00        | 0.00         | 3,715                | 310.78           | 0.02          | 0.02          | 0.00            |
| 32.50        | 0.00         | 3,496                | 310.71           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,287                | 310.64           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 3,087                | 310.57           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,896                | 310.50           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,716                | 310.44           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,545                | 310.37           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,385                | 310.31           | 0.02          | 0.02          | 0.00            |
| 50.00        | 0.00         | 2,236                | 310.25           | 0.02          | 0.02          | 0.00            |
| 52.50        | 0.00         | 2,098                | 310.19           | 0.01          | 0.01          | 0.00            |
| 55.00        | 0.00         | 1,971                | 310.14           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,855                | 310.09           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,751                | 310.04           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,659                | 310.00           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,579                | 309.97           | 0.01          | 0.01          | 0.00            |
| 67.50        | 0.00         | 1,513                | 309.94           | 0.01          | 0.01          | 0.00            |
| 70.00        | 0.00         | 1,460                | 309.91           | 0.01          | 0.01          | 0.00            |
| 72.50        | 0.00         | 1,421                | 309.89           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,396                | 309.88           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,378                | 309.87           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,366                | 309.86           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,357                | 309.86           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,351                | 309.85           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,345                | 309.85           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,341                | 309.85           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,338                | 309.85           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,335                | 309.85           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,333                | 309.84           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,331                | 309.84           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 307.25              | 0.00               | 0.00             | 0.00               | 312.55              | 38.45              | 5.83             | 32.62              |
| 307.35              | 0.00               | 0.00             | 0.00               | 312.65              | 44.47              | 6.06             | 38.40              |
| 307.45              | 0.00               | 0.00             | 0.00               | 312.75              | 50.72              | 6.29             | 44.44              |
| 307.55              | 0.00               | 0.00             | 0.00               | 312.85              | 57.22              | 6.51             | 50.71              |
| 307.65              | 0.00               | 0.00             | 0.00               | 312.95              | <b>63.89</b>       | <b>6.72</b>      | <b>57.17</b>       |
| 307.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.95              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.05              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.15              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.25              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.35              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.45              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.55              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.65              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.75              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.85              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 310.95              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 311.05              | 0.16               | 0.16             | 0.00               |                     |                    |                  |                    |
| 311.15              | 0.43               | 0.43             | 0.00               |                     |                    |                  |                    |
| 311.25              | 0.82               | 0.82             | 0.00               |                     |                    |                  |                    |
| 311.35              | 1.30               | 1.30             | 0.00               |                     |                    |                  |                    |
| 311.45              | 1.85               | 1.85             | 0.00               |                     |                    |                  |                    |
| 311.55              | 2.42               | 2.42             | 0.00               |                     |                    |                  |                    |
| 311.65              | 2.98               | 2.98             | 0.00               |                     |                    |                  |                    |
| 311.75              | 4.08               | 3.42             | 0.66               |                     |                    |                  |                    |
| 311.85              | 6.29               | 3.80             | 2.49               |                     |                    |                  |                    |
| 311.95              | 9.24               | 4.15             | 5.09               |                     |                    |                  |                    |
| 312.05              | 12.88              | 4.47             | 8.40               |                     |                    |                  |                    |
| 312.15              | 17.23              | 4.78             | 12.45              |                     |                    |                  |                    |
| 312.25              | 22.30              | 5.06             | 17.24              |                     |                    |                  |                    |
| 312.35              | 27.48              | 5.33             | 22.15              |                     |                    |                  |                    |
| 312.45              | 32.78              | 5.58             | 27.19              |                     |                    |                  |                    |

**Stage-Area-Storage for Pond 3P: Proposed Stormwater Pond**

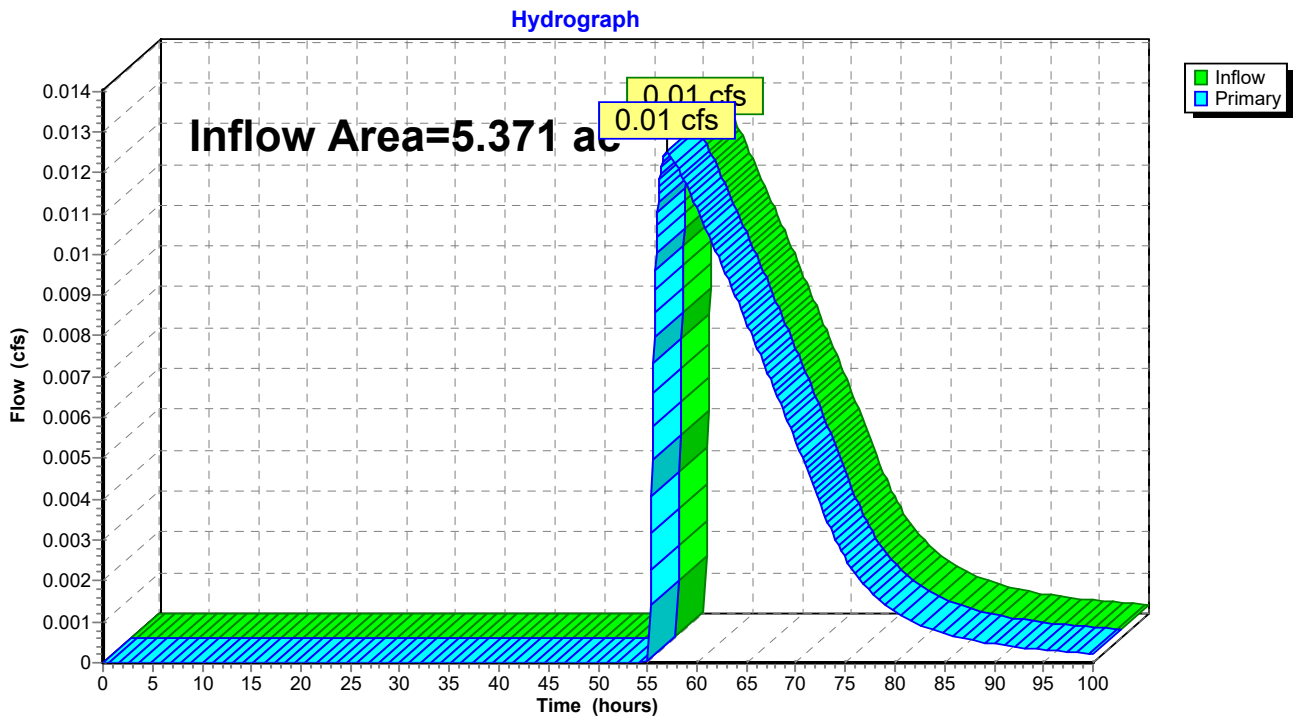
| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
| 307.25              | 0                       | 309.90              | 1,441                   | 312.55              | 11,248                  |
| 307.30              | 1                       | 309.95              | 1,544                   | 312.60              | 11,521                  |
| 307.35              | 3                       | 310.00              | 1,652                   | 312.65              | 11,797                  |
| 307.40              | 4                       | 310.05              | 1,764                   | 312.70              | 12,077                  |
| 307.45              | 6                       | 310.10              | 1,878                   | 312.75              | 12,361                  |
| 307.50              | 8                       | 310.15              | 1,996                   | 312.80              | 12,648                  |
| 307.55              | 10                      | 310.20              | 2,115                   | 312.85              | 12,939                  |
| 307.60              | 13                      | 310.25              | 2,238                   | 312.90              | 13,235                  |
| 307.65              | 15                      | 310.30              | 2,363                   | 312.95              | <b>13,534</b>           |
| 307.70              | 18                      | 310.35              | 2,491                   |                     |                         |
| 307.75              | 22                      | 310.40              | 2,622                   |                     |                         |
| 307.80              | 25                      | 310.45              | 2,756                   |                     |                         |
| 307.85              | 29                      | 310.50              | 2,892                   |                     |                         |
| 307.90              | 34                      | 310.55              | 3,031                   |                     |                         |
| 307.95              | 38                      | 310.60              | 3,173                   |                     |                         |
| 308.00              | 43                      | 310.65              | 3,318                   |                     |                         |
| 308.05              | 52                      | 310.70              | 3,466                   |                     |                         |
| 308.10              | 61                      | 310.75              | 3,617                   |                     |                         |
| 308.15              | 70                      | 310.80              | 3,771                   |                     |                         |
| 308.20              | 81                      | 310.85              | 3,928                   |                     |                         |
| 308.25              | 92                      | 310.90              | 4,088                   |                     |                         |
| 308.30              | 104                     | 310.95              | 4,251                   |                     |                         |
| 308.35              | 117                     | 311.00              | 4,418                   |                     |                         |
| 308.40              | 131                     | 311.05              | 4,588                   |                     |                         |
| 308.45              | 146                     | 311.10              | 4,763                   |                     |                         |
| 308.50              | 161                     | 311.15              | 4,943                   |                     |                         |
| 308.55              | 178                     | 311.20              | 5,127                   |                     |                         |
| 308.60              | 195                     | 311.25              | 5,317                   |                     |                         |
| 308.65              | 214                     | 311.30              | 5,510                   |                     |                         |
| 308.70              | 234                     | 311.35              | 5,706                   |                     |                         |
| 308.75              | 254                     | 311.40              | 5,905                   |                     |                         |
| 308.80              | 276                     | 311.45              | 6,106                   |                     |                         |
| 308.85              | 299                     | 311.50              | 6,309                   |                     |                         |
| 308.90              | 324                     | 311.55              | 6,516                   |                     |                         |
| 308.95              | 349                     | 311.60              | 6,724                   |                     |                         |
| 309.00              | 376                     | 311.65              | 6,936                   |                     |                         |
| 309.05              | 404                     | 311.70              | 7,150                   |                     |                         |
| 309.10              | 436                     | 311.75              | 7,366                   |                     |                         |
| 309.15              | 470                     | 311.80              | 7,586                   |                     |                         |
| 309.20              | 507                     | 311.85              | 7,808                   |                     |                         |
| 309.25              | 548                     | 311.90              | 8,032                   |                     |                         |
| 309.30              | 592                     | 311.95              | 8,260                   |                     |                         |
| 309.35              | 639                     | 312.00              | 8,490                   |                     |                         |
| 309.40              | 691                     | 312.05              | 8,723                   |                     |                         |
| 309.45              | 746                     | 312.10              | 8,960                   |                     |                         |
| 309.50              | 805                     | 312.15              | 9,200                   |                     |                         |
| 309.55              | 868                     | 312.20              | 9,443                   |                     |                         |
| 309.60              | 936                     | 312.25              | 9,690                   |                     |                         |
| 309.65              | 1,008                   | 312.30              | 9,941                   |                     |                         |
| 309.70              | 1,085                   | 312.35              | 10,195                  |                     |                         |
| 309.75              | 1,166                   | 312.40              | 10,453                  |                     |                         |
| 309.80              | 1,253                   | 312.45              | 10,714                  |                     |                         |
| 309.85              | 1,344                   | 312.50              | 10,979                  |                     |                         |

### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth > 0.03" for 1-yr event  
 Inflow = 0.01 cfs @ 56.93 hrs, Volume= 0.014 af  
 Primary = 0.01 cfs @ 56.93 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1



**Hydrograph for Link AP1: Analysis Point 1**

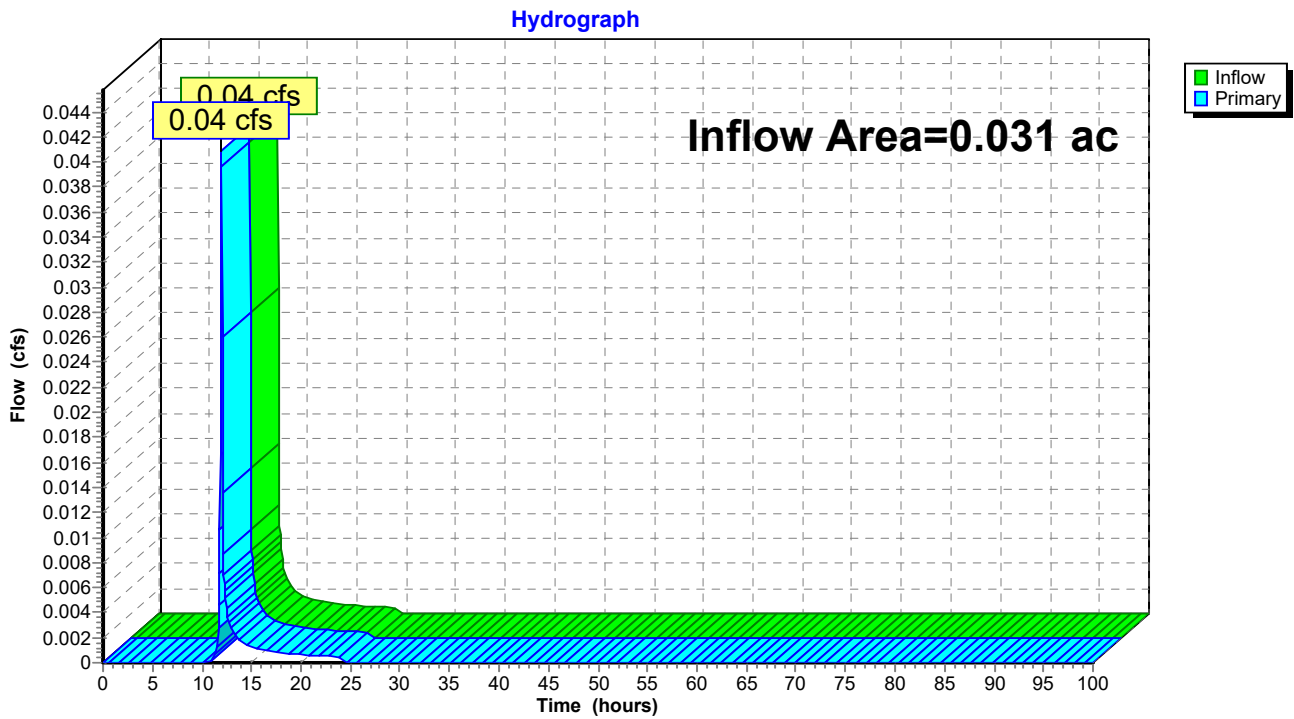
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | <b>0.01</b>  | 0.00             | <b>0.01</b>   |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | <b>0.01</b>  | 0.00             | <b>0.01</b>   |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.01         | 0.00             | 0.01          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.01         | 0.00             | 0.01          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.01         | 0.00             | 0.01          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.01         | 0.00             | 0.01          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.01         | 0.00             | 0.01          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.01         | 0.00             | 0.01          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.031 ac, 3.23% Impervious, Inflow Depth = 0.76" for 1-yr event  
Inflow = 0.04 cfs @ 11.98 hrs, Volume= 0.002 af  
Primary = 0.04 cfs @ 11.98 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.04</b>  | 0.00             | <b>0.04</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

# 1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |  |
|---|--|
| <b>Subcatchment 1S: Subcat 1</b>            | Runoff Area=3.182 ac 9.18% Impervious Runoff Depth=0.39"<br>Flow Length=499' Tc=10.1 min CN=54 Runoff=1.09 cfs 0.102 af                                      |
| <b>Subcatchment 2aS: Subcat 2a</b>          | Runoff Area=0.830 ac 18.55% Impervious Runoff Depth=1.97"<br>Flow Length=81' Tc=6.7 min CN=82 Runoff=2.77 cfs 0.136 af                                       |
| <b>Subcatchment 2bS: Subcat 2a</b>          | Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=1.67"<br>Flow Length=55' Slope=0.0170 '/' Tc=6.0 min CN=78 Runoff=0.55 cfs 0.026 af                       |
| <b>Subcatchment 2cS: Subcat 2c</b>          | Runoff Area=0.506 ac 47.43% Impervious Runoff Depth=2.47"<br>Flow Length=193' Tc=6.0 min CN=88 Runoff=2.09 cfs 0.104 af                                      |
| <b>Subcatchment 2dS: Subcat 2d</b>          | Runoff Area=0.425 ac 28.00% Impervious Runoff Depth=1.97"<br>Flow Length=156' Tc=7.5 min CN=82 Runoff=1.39 cfs 0.070 af                                      |
| <b>Subcatchment 2eS: Subcat 2e</b>          | Runoff Area=0.238 ac 26.47% Impervious Runoff Depth=2.05"<br>Flow Length=120' Tc=7.9 min CN=83 Runoff=0.80 cfs 0.041 af                                      |
| <b>Subcatchment 3S: Subcat 3</b>            | Runoff Area=0.031 ac 3.23% Impervious Runoff Depth=1.89"<br>Flow Length=13' Slope=0.0779 '/' Tc=6.0 min CN=81 Runoff=0.10 cfs 0.005 af                       |
| <b>Reach 1R: Existing Swale</b>             | Avg. Flow Depth=0.13' Max Vel=1.65 fps Inflow=0.55 cfs 0.026 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=0.52 cfs 0.026 af                |
| <b>Reach 2R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.54' Max Vel=1.16 fps Inflow=2.77 cfs 0.136 af<br>n=0.080 L=390.0' S=0.0154 '/' Capacity=8.93 cfs Outflow=2.29 cfs 0.136 af                 |
| <b>Reach 3R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.70' Max Vel=0.94 fps Inflow=2.80 cfs 0.145 af<br>n=0.100 L=104.0' S=0.0116 '/' Capacity=8.50 cfs Outflow=2.70 cfs 0.145 af                 |
| <b>Reach 4R: Proposed 10" Culvert</b>       | Avg. Flow Depth=0.29' Max Vel=4.40 fps Inflow=0.76 cfs 0.041 af<br>10.0" Round Pipe n=0.010 L=33.0' S=0.0100 '/' Capacity=2.85 cfs Outflow=0.76 cfs 0.041 af |
| <b>Reach 5R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.25' Max Vel=1.11 fps Inflow=0.80 cfs 0.041 af<br>n=0.080 L=136.0' S=0.0328 '/' Capacity=6.51 cfs Outflow=0.76 cfs 0.041 af                 |
| <b>Reach 6R: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=0.54' Max Vel=4.52 fps Inflow=1.95 cfs 0.280 af<br>12.0" Round Pipe n=0.012 L=22.6' S=0.0080 '/' Capacity=3.44 cfs Outflow=1.95 cfs 0.280 af |
| <b>Pond 1ST: Existing Sediment Trap</b>     | Peak Elev=316.25' Storage=0.295 af Inflow=1.09 cfs 0.102 af<br>Outflow=0.00 cfs 0.000 af   |
| <b>Pond 2ST: Existing Sediment Trap</b>     | Peak Elev=310.24' Storage=0.164 af Inflow=2.56 cfs 0.376 af<br>Outflow=0.54 cfs 0.230 af   |
| <b>Pond 3P: Proposed Stormwater Pond</b>    | Peak Elev=311.47' Storage=6,183 cf Inflow=4.93 cfs 0.281 af<br>Primary=1.95 cfs 0.280 af Secondary=0.00 cfs 0.000 af Outflow=1.95 cfs 0.280 af               |



**Link AP1: Analysis Point 1**

Inflow=0.54 cfs 0.230 af  
Primary=0.54 cfs 0.230 af

**Link AP2: Analysis Point 2**

Inflow=0.10 cfs 0.005 af  
Primary=0.10 cfs 0.005 af

**Total Runoff Area = 5.402 ac   Runoff Volume = 0.484 af   Average Runoff Depth = 1.07"**  
**83.91% Pervious = 4.533 ac   16.09% Impervious = 0.869 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 1.09 cfs @ 12.06 hrs, Volume= 0.102 af, Depth= 0.39"

Routed to Pond 1ST : Existing Sediment Trap

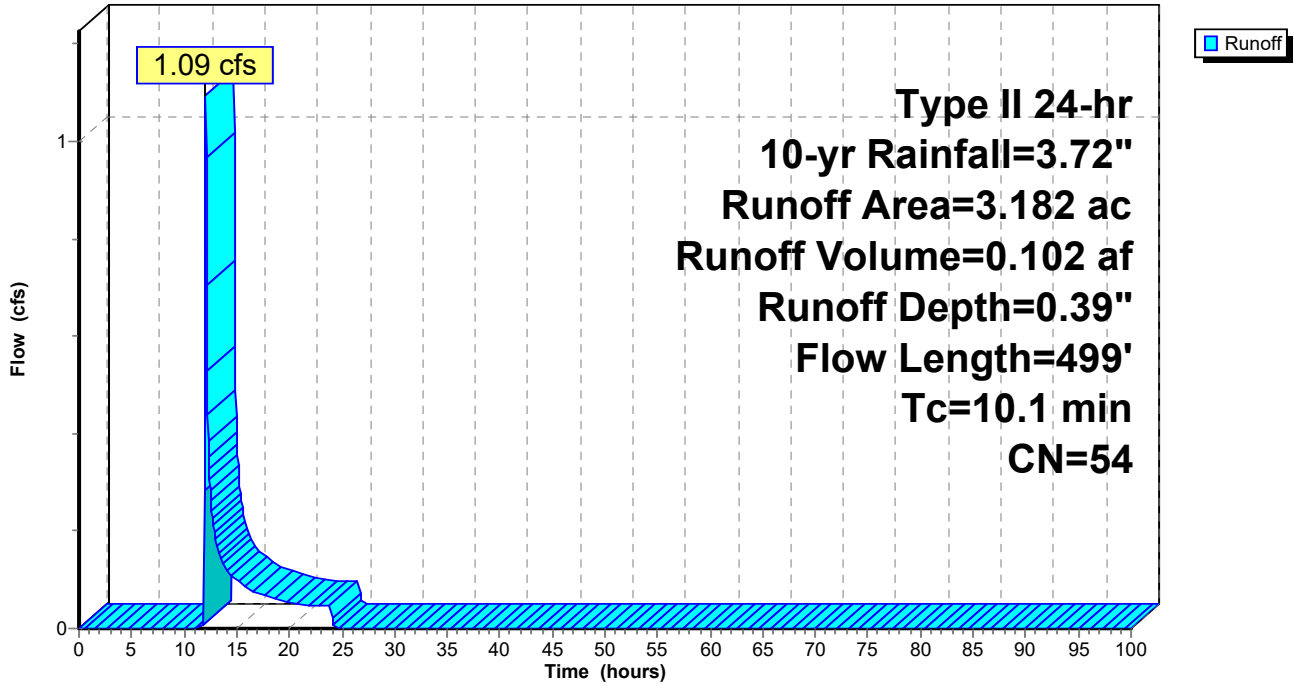
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.022     | 98 | Roofs, HSG A                        |
| 0.005     | 98 | Paved parking, HSG A                |
| 0.127     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.253     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 1.091     | 78 | Meadow, non-grazed, HSG D           |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.182     | 54 | Weighted Average                    |
| 2.890     |    | 90.82% Pervious Area                |
| 0.292     |    | 9.18% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.3      | 69            | 0.0600        | 3.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.1     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



**Hydrograph for Subcatchment 1S: Subcat 1**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.39            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.39            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.39            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.39            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.39            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.39            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.39            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.39            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.39            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.39            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.39            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.39            | 0.00         |
| 12.00        | 2.47             | 0.06            | <b>0.77</b>  | 65.00        | 3.72             | 0.39            | 0.00         |
| 13.00        | 2.87             | 0.14            | <b>0.18</b>  | 66.00        | 3.72             | 0.39            | 0.00         |
| 14.00        | 3.05             | 0.18            | 0.12         | 67.00        | 3.72             | 0.39            | 0.00         |
| 15.00        | 3.18             | 0.22            | 0.10         | 68.00        | 3.72             | 0.39            | 0.00         |
| 16.00        | 3.27             | 0.24            | 0.08         | 69.00        | 3.72             | 0.39            | 0.00         |
| 17.00        | 3.35             | 0.27            | 0.07         | 70.00        | 3.72             | 0.39            | 0.00         |
| 18.00        | 3.43             | 0.29            | 0.07         | 71.00        | 3.72             | 0.39            | 0.00         |
| 19.00        | 3.49             | 0.31            | 0.06         | 72.00        | 3.72             | 0.39            | 0.00         |
| 20.00        | 3.54             | 0.33            | 0.05         | 73.00        | 3.72             | 0.39            | 0.00         |
| 21.00        | 3.59             | 0.34            | 0.05         | 74.00        | 3.72             | 0.39            | 0.00         |
| 22.00        | 3.63             | 0.36            | 0.05         | 75.00        | 3.72             | 0.39            | 0.00         |
| 23.00        | 3.68             | 0.37            | 0.05         | 76.00        | 3.72             | 0.39            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.39</b>     | 0.05         | 77.00        | 3.72             | 0.39            | 0.00         |
| 25.00        | 3.72             | 0.39            | 0.00         | 78.00        | 3.72             | 0.39            | 0.00         |
| 26.00        | 3.72             | 0.39            | 0.00         | 79.00        | 3.72             | 0.39            | 0.00         |
| 27.00        | 3.72             | 0.39            | 0.00         | 80.00        | 3.72             | 0.39            | 0.00         |
| 28.00        | 3.72             | 0.39            | 0.00         | 81.00        | 3.72             | 0.39            | 0.00         |
| 29.00        | 3.72             | 0.39            | 0.00         | 82.00        | 3.72             | 0.39            | 0.00         |
| 30.00        | 3.72             | 0.39            | 0.00         | 83.00        | 3.72             | 0.39            | 0.00         |
| 31.00        | 3.72             | 0.39            | 0.00         | 84.00        | 3.72             | 0.39            | 0.00         |
| 32.00        | 3.72             | 0.39            | 0.00         | 85.00        | 3.72             | 0.39            | 0.00         |
| 33.00        | 3.72             | 0.39            | 0.00         | 86.00        | 3.72             | 0.39            | 0.00         |
| 34.00        | 3.72             | 0.39            | 0.00         | 87.00        | 3.72             | 0.39            | 0.00         |
| 35.00        | 3.72             | 0.39            | 0.00         | 88.00        | 3.72             | 0.39            | 0.00         |
| 36.00        | 3.72             | 0.39            | 0.00         | 89.00        | 3.72             | 0.39            | 0.00         |
| 37.00        | 3.72             | 0.39            | 0.00         | 90.00        | 3.72             | 0.39            | 0.00         |
| 38.00        | 3.72             | 0.39            | 0.00         | 91.00        | 3.72             | 0.39            | 0.00         |
| 39.00        | 3.72             | 0.39            | 0.00         | 92.00        | 3.72             | 0.39            | 0.00         |
| 40.00        | 3.72             | 0.39            | 0.00         | 93.00        | 3.72             | 0.39            | 0.00         |
| 41.00        | 3.72             | 0.39            | 0.00         | 94.00        | 3.72             | 0.39            | 0.00         |
| 42.00        | 3.72             | 0.39            | 0.00         | 95.00        | 3.72             | 0.39            | 0.00         |
| 43.00        | 3.72             | 0.39            | 0.00         | 96.00        | 3.72             | 0.39            | 0.00         |
| 44.00        | 3.72             | 0.39            | 0.00         | 97.00        | 3.72             | 0.39            | 0.00         |
| 45.00        | 3.72             | 0.39            | 0.00         | 98.00        | 3.72             | 0.39            | 0.00         |
| 46.00        | 3.72             | 0.39            | 0.00         | 99.00        | 3.72             | 0.39            | 0.00         |
| 47.00        | 3.72             | 0.39            | 0.00         | 100.00       | 3.72             | 0.39            | 0.00         |
| 48.00        | 3.72             | 0.39            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.39            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.39            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.39            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.39            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 2.77 cfs @ 11.98 hrs, Volume= 0.136 af, Depth= 1.97"  
 Routed to Reach 2R : Proposed RRv Swale

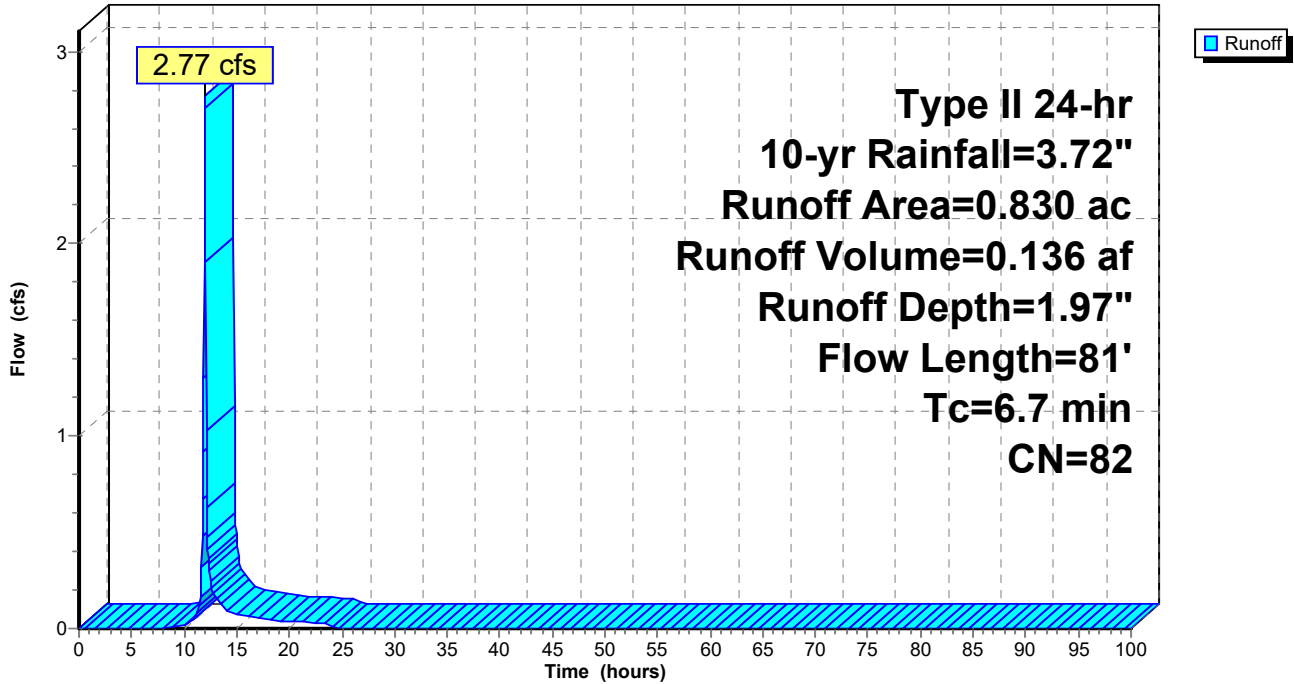
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.480     | 78 | Meadow, non-grazed, HSG D     |
| 0.002     | 71 | Meadow, non-grazed, HSG C     |
| * 0.002   | 98 | Paved parking, HSG D          |
| * 0.152   | 98 | Paved parking, HSG D          |
| 0.194     | 80 | >75% Grass cover, Good, HSG D |
| 0.830     | 82 | Weighted Average              |
| 0.676     |    | 81.45% Pervious Area          |
| 0.154     |    | 18.55% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.2      | 14            | 0.0460        | 1.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59" |
| 1.9      | 20            | 0.0460        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 3.3      | 32            | 0.0310        | 0.16              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 1.3      | 15            | 0.0670        | 0.19              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 6.7      | 81            | Total         |                   |                |   |

Subcatchment 2aS: Subcat 2a

Hydrograph



**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 1.97               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 1.97               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 1.97               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 1.97               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 1.97               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 1.97               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 1.97               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 1.97               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.00            | 61.00           | 3.72                | 1.97               | 0.00            |
| 9.00            | 0.55                | 0.01               | 0.01            | 62.00           | 3.72                | 1.97               | 0.00            |
| 10.00           | 0.67                | 0.02               | 0.02            | 63.00           | 3.72                | 1.97               | 0.00            |
| 11.00           | 0.87                | 0.07               | 0.06            | 64.00           | 3.72                | 1.97               | 0.00            |
| 12.00           | 2.47                | 0.97               | <b>2.71</b>     | 65.00           | 3.72                | 1.97               | 0.00            |
| 13.00           | 2.87                | 1.28               | 0.16            | 66.00           | 3.72                | 1.97               | 0.00            |
| 14.00           | 3.05                | 1.42               | 0.10            | 67.00           | 3.72                | 1.97               | 0.00            |
| 15.00           | 3.18                | 1.52               | 0.08            | 68.00           | 3.72                | 1.97               | 0.00            |
| 16.00           | 3.27                | 1.60               | 0.06            | 69.00           | 3.72                | 1.97               | 0.00            |
| 17.00           | 3.35                | 1.66               | 0.05            | 70.00           | 3.72                | 1.97               | 0.00            |
| 18.00           | 3.43                | 1.72               | 0.05            | 71.00           | 3.72                | 1.97               | 0.00            |
| 19.00           | 3.49                | 1.77               | 0.04            | 72.00           | 3.72                | 1.97               | 0.00            |
| 20.00           | 3.54                | 1.82               | 0.03            | 73.00           | 3.72                | 1.97               | 0.00            |
| 21.00           | 3.59                | 1.86               | 0.03            | 74.00           | 3.72                | 1.97               | 0.00            |
| 22.00           | 3.63                | 1.89               | 0.03            | 75.00           | 3.72                | 1.97               | 0.00            |
| 23.00           | 3.68                | 1.93               | 0.03            | 76.00           | 3.72                | 1.97               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>1.97</b>        | 0.03            | 77.00           | 3.72                | 1.97               | 0.00            |
| 25.00           | 3.72                | 1.97               | 0.00            | 78.00           | 3.72                | 1.97               | 0.00            |
| 26.00           | 3.72                | 1.97               | 0.00            | 79.00           | 3.72                | 1.97               | 0.00            |
| 27.00           | 3.72                | 1.97               | 0.00            | 80.00           | 3.72                | 1.97               | 0.00            |
| 28.00           | 3.72                | 1.97               | 0.00            | 81.00           | 3.72                | 1.97               | 0.00            |
| 29.00           | 3.72                | 1.97               | 0.00            | 82.00           | 3.72                | 1.97               | 0.00            |
| 30.00           | 3.72                | 1.97               | 0.00            | 83.00           | 3.72                | 1.97               | 0.00            |
| 31.00           | 3.72                | 1.97               | 0.00            | 84.00           | 3.72                | 1.97               | 0.00            |
| 32.00           | 3.72                | 1.97               | 0.00            | 85.00           | 3.72                | 1.97               | 0.00            |
| 33.00           | 3.72                | 1.97               | 0.00            | 86.00           | 3.72                | 1.97               | 0.00            |
| 34.00           | 3.72                | 1.97               | 0.00            | 87.00           | 3.72                | 1.97               | 0.00            |
| 35.00           | 3.72                | 1.97               | 0.00            | 88.00           | 3.72                | 1.97               | 0.00            |
| 36.00           | 3.72                | 1.97               | 0.00            | 89.00           | 3.72                | 1.97               | 0.00            |
| 37.00           | 3.72                | 1.97               | 0.00            | 90.00           | 3.72                | 1.97               | 0.00            |
| 38.00           | 3.72                | 1.97               | 0.00            | 91.00           | 3.72                | 1.97               | 0.00            |
| 39.00           | 3.72                | 1.97               | 0.00            | 92.00           | 3.72                | 1.97               | 0.00            |
| 40.00           | 3.72                | 1.97               | 0.00            | 93.00           | 3.72                | 1.97               | 0.00            |
| 41.00           | 3.72                | 1.97               | 0.00            | 94.00           | 3.72                | 1.97               | 0.00            |
| 42.00           | 3.72                | 1.97               | 0.00            | 95.00           | 3.72                | 1.97               | 0.00            |
| 43.00           | 3.72                | 1.97               | 0.00            | 96.00           | 3.72                | 1.97               | 0.00            |
| 44.00           | 3.72                | 1.97               | 0.00            | 97.00           | 3.72                | 1.97               | 0.00            |
| 45.00           | 3.72                | 1.97               | 0.00            | 98.00           | 3.72                | 1.97               | 0.00            |
| 46.00           | 3.72                | 1.97               | 0.00            | 99.00           | 3.72                | 1.97               | 0.00            |
| 47.00           | 3.72                | 1.97               | 0.00            | 100.00          | 3.72                | 1.97               | 0.00            |
| 48.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2bS: Subcat 2a**

Runoff = 0.55 cfs @ 11.97 hrs, Volume= 0.026 af, Depth= 1.67"  
 Routed to Reach 1R : Existing Swale

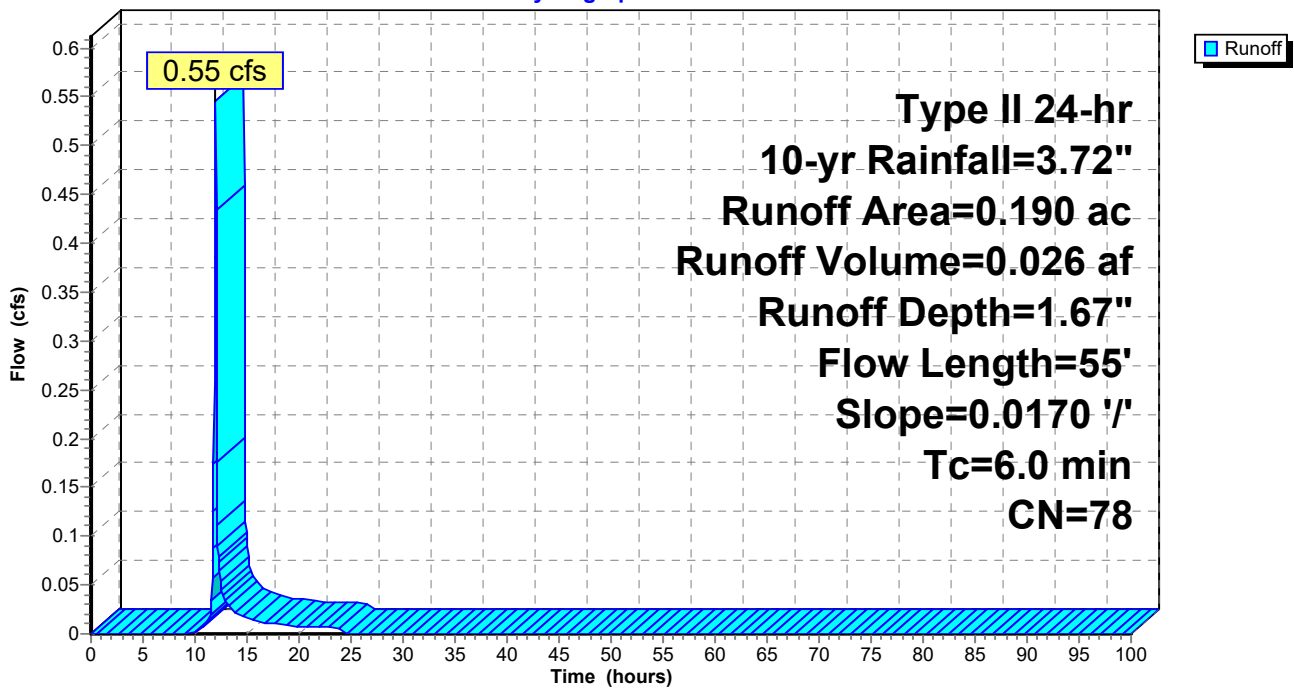
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.188     | 78 | Meadow, non-grazed, HSG D |
| 0.002     | 71 | Meadow, non-grazed, HSG C |
| 0.190     | 78 | Weighted Average          |
| 0.190     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.0      | 55            | 0.0170                                   | 0.91              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.0      | 55            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 2bS: Subcat 2a**

Hydrograph





**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Hydrograph for Subcatchment 2bS: Subcat 2a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 1.67               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 1.67               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 1.67               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 1.67               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 1.67               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 1.67               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 1.67               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 1.67               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.00            | 61.00           | 3.72                | 1.67               | 0.00            |
| 9.00            | 0.55                | 0.00               | 0.00            | 62.00           | 3.72                | 1.67               | 0.00            |
| 10.00           | 0.67                | 0.00               | 0.00            | 63.00           | 3.72                | 1.67               | 0.00            |
| 11.00           | 0.87                | 0.03               | <b>0.01</b>     | 64.00           | 3.72                | 1.67               | 0.00            |
| 12.00           | 2.47                | 0.77               | <b>0.53</b>     | 65.00           | 3.72                | 1.67               | 0.00            |
| 13.00           | 2.87                | 1.04               | 0.03            | 66.00           | 3.72                | 1.67               | 0.00            |
| 14.00           | 3.05                | 1.16               | 0.02            | 67.00           | 3.72                | 1.67               | 0.00            |
| 15.00           | 3.18                | 1.26               | 0.02            | 68.00           | 3.72                | 1.67               | 0.00            |
| 16.00           | 3.27                | 1.33               | 0.01            | 69.00           | 3.72                | 1.67               | 0.00            |
| 17.00           | 3.35                | 1.39               | 0.01            | 70.00           | 3.72                | 1.67               | 0.00            |
| 18.00           | 3.43                | 1.44               | 0.01            | 71.00           | 3.72                | 1.67               | 0.00            |
| 19.00           | 3.49                | 1.49               | 0.01            | 72.00           | 3.72                | 1.67               | 0.00            |
| 20.00           | 3.54                | 1.53               | 0.01            | 73.00           | 3.72                | 1.67               | 0.00            |
| 21.00           | 3.59                | 1.57               | 0.01            | 74.00           | 3.72                | 1.67               | 0.00            |
| 22.00           | 3.63                | 1.60               | 0.01            | 75.00           | 3.72                | 1.67               | 0.00            |
| 23.00           | 3.68                | 1.63               | 0.01            | 76.00           | 3.72                | 1.67               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>1.67</b>        | 0.01            | 77.00           | 3.72                | 1.67               | 0.00            |
| 25.00           | 3.72                | 1.67               | 0.00            | 78.00           | 3.72                | 1.67               | 0.00            |
| 26.00           | 3.72                | 1.67               | 0.00            | 79.00           | 3.72                | 1.67               | 0.00            |
| 27.00           | 3.72                | 1.67               | 0.00            | 80.00           | 3.72                | 1.67               | 0.00            |
| 28.00           | 3.72                | 1.67               | 0.00            | 81.00           | 3.72                | 1.67               | 0.00            |
| 29.00           | 3.72                | 1.67               | 0.00            | 82.00           | 3.72                | 1.67               | 0.00            |
| 30.00           | 3.72                | 1.67               | 0.00            | 83.00           | 3.72                | 1.67               | 0.00            |
| 31.00           | 3.72                | 1.67               | 0.00            | 84.00           | 3.72                | 1.67               | 0.00            |
| 32.00           | 3.72                | 1.67               | 0.00            | 85.00           | 3.72                | 1.67               | 0.00            |
| 33.00           | 3.72                | 1.67               | 0.00            | 86.00           | 3.72                | 1.67               | 0.00            |
| 34.00           | 3.72                | 1.67               | 0.00            | 87.00           | 3.72                | 1.67               | 0.00            |
| 35.00           | 3.72                | 1.67               | 0.00            | 88.00           | 3.72                | 1.67               | 0.00            |
| 36.00           | 3.72                | 1.67               | 0.00            | 89.00           | 3.72                | 1.67               | 0.00            |
| 37.00           | 3.72                | 1.67               | 0.00            | 90.00           | 3.72                | 1.67               | 0.00            |
| 38.00           | 3.72                | 1.67               | 0.00            | 91.00           | 3.72                | 1.67               | 0.00            |
| 39.00           | 3.72                | 1.67               | 0.00            | 92.00           | 3.72                | 1.67               | 0.00            |
| 40.00           | 3.72                | 1.67               | 0.00            | 93.00           | 3.72                | 1.67               | 0.00            |
| 41.00           | 3.72                | 1.67               | 0.00            | 94.00           | 3.72                | 1.67               | 0.00            |
| 42.00           | 3.72                | 1.67               | 0.00            | 95.00           | 3.72                | 1.67               | 0.00            |
| 43.00           | 3.72                | 1.67               | 0.00            | 96.00           | 3.72                | 1.67               | 0.00            |
| 44.00           | 3.72                | 1.67               | 0.00            | 97.00           | 3.72                | 1.67               | 0.00            |
| 45.00           | 3.72                | 1.67               | 0.00            | 98.00           | 3.72                | 1.67               | 0.00            |
| 46.00           | 3.72                | 1.67               | 0.00            | 99.00           | 3.72                | 1.67               | 0.00            |
| 47.00           | 3.72                | 1.67               | 0.00            | 100.00          | 3.72                | 1.67               | 0.00            |
| 48.00           | 3.72                | 1.67               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 1.67               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 1.67               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 1.67               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 1.67               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2cS: Subcat 2c**

Runoff = 2.09 cfs @ 11.97 hrs, Volume= 0.104 af, Depth= 2.47"

Routed to Reach 3R : Proposed RRv Swale

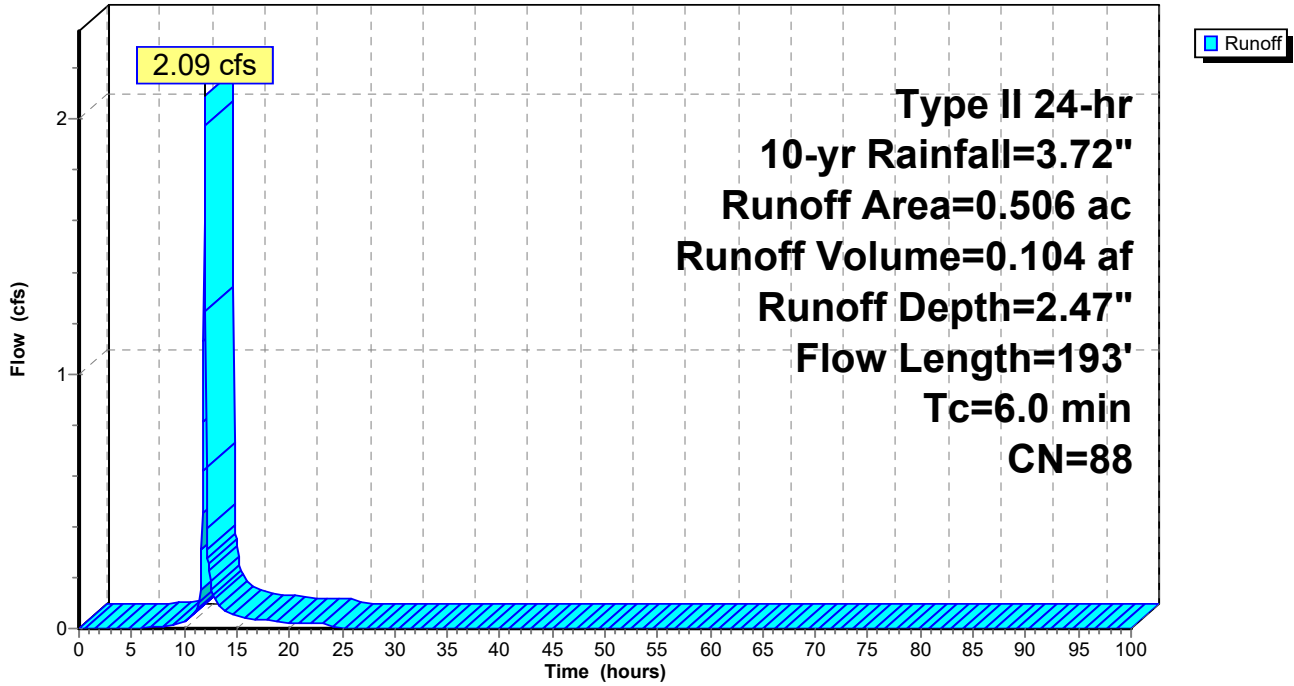
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.143     | 78 | Meadow, non-grazed, HSG D     |
| 0.030     | 71 | Meadow, non-grazed, HSG C     |
| * 0.023   | 89 | Gravel surface, HSG D         |
| * 0.056   | 98 | Paved parking, HSGD           |
| * 0.023   | 98 | Roofs, HSG D                  |
| * 0.113   | 98 | Paved parking, HSG D          |
| 0.070     | 80 | >75% Grass cover, Good, HSG D |
| 0.048     | 98 | Water Surface, HSG D          |
| 0.506     | 88 | Weighted Average              |
| 0.266     |    | 52.57% Pervious Area          |
| 0.240     |    | 47.43% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 0.7      | 45            | 0.0200                                   | 1.05              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.6      | 36            | 0.0200                                   | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 2.9      | 19            | 0.0200                                   | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.1      | 6             | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.0      | 6             | 0.0200                                   | 2.87              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.5      | 43            | 0.0470                                   | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 5.4      | 193           | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

Subcatchment 2cS: Subcat 2c

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Hydrograph for Subcatchment 2cS: Subcat 2c**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 2.47            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 2.47            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 2.47            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 2.47            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 2.47            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 2.47            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 2.47            | 0.00         |
| 7.00         | 0.37             | 0.01            | 0.00         | 60.00        | 3.72             | 2.47            | 0.00         |
| 8.00         | 0.45             | 0.02            | 0.01         | 61.00        | 3.72             | 2.47            | 0.00         |
| 9.00         | 0.55             | 0.05            | 0.02         | 62.00        | 3.72             | 2.47            | 0.00         |
| 10.00        | 0.67             | 0.09            | 0.03         | 63.00        | 3.72             | 2.47            | 0.00         |
| 11.00        | 0.87             | 0.18            | <b>0.07</b>  | 64.00        | 3.72             | 2.47            | 0.00         |
| 12.00        | 2.47             | 1.35            | <b>1.97</b>  | 65.00        | 3.72             | 2.47            | 0.00         |
| 13.00        | 2.87             | 1.70            | 0.11         | 66.00        | 3.72             | 2.47            | 0.00         |
| 14.00        | 3.05             | 1.86            | 0.07         | 67.00        | 3.72             | 2.47            | 0.00         |
| 15.00        | 3.18             | 1.97            | 0.05         | 68.00        | 3.72             | 2.47            | 0.00         |
| 16.00        | 3.27             | 2.06            | 0.04         | 69.00        | 3.72             | 2.47            | 0.00         |
| 17.00        | 3.35             | 2.14            | 0.04         | 70.00        | 3.72             | 2.47            | 0.00         |
| 18.00        | 3.43             | 2.20            | 0.03         | 71.00        | 3.72             | 2.47            | 0.00         |
| 19.00        | 3.49             | 2.26            | 0.03         | 72.00        | 3.72             | 2.47            | 0.00         |
| 20.00        | 3.54             | 2.31            | 0.02         | 73.00        | 3.72             | 2.47            | 0.00         |
| 21.00        | 3.59             | 2.35            | 0.02         | 74.00        | 3.72             | 2.47            | 0.00         |
| 22.00        | 3.63             | 2.39            | 0.02         | 75.00        | 3.72             | 2.47            | 0.00         |
| 23.00        | 3.68             | 2.43            | 0.02         | 76.00        | 3.72             | 2.47            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>2.47</b>     | 0.02         | 77.00        | 3.72             | 2.47            | 0.00         |
| 25.00        | 3.72             | 2.47            | 0.00         | 78.00        | 3.72             | 2.47            | 0.00         |
| 26.00        | 3.72             | 2.47            | 0.00         | 79.00        | 3.72             | 2.47            | 0.00         |
| 27.00        | 3.72             | 2.47            | 0.00         | 80.00        | 3.72             | 2.47            | 0.00         |
| 28.00        | 3.72             | 2.47            | 0.00         | 81.00        | 3.72             | 2.47            | 0.00         |
| 29.00        | 3.72             | 2.47            | 0.00         | 82.00        | 3.72             | 2.47            | 0.00         |
| 30.00        | 3.72             | 2.47            | 0.00         | 83.00        | 3.72             | 2.47            | 0.00         |
| 31.00        | 3.72             | 2.47            | 0.00         | 84.00        | 3.72             | 2.47            | 0.00         |
| 32.00        | 3.72             | 2.47            | 0.00         | 85.00        | 3.72             | 2.47            | 0.00         |
| 33.00        | 3.72             | 2.47            | 0.00         | 86.00        | 3.72             | 2.47            | 0.00         |
| 34.00        | 3.72             | 2.47            | 0.00         | 87.00        | 3.72             | 2.47            | 0.00         |
| 35.00        | 3.72             | 2.47            | 0.00         | 88.00        | 3.72             | 2.47            | 0.00         |
| 36.00        | 3.72             | 2.47            | 0.00         | 89.00        | 3.72             | 2.47            | 0.00         |
| 37.00        | 3.72             | 2.47            | 0.00         | 90.00        | 3.72             | 2.47            | 0.00         |
| 38.00        | 3.72             | 2.47            | 0.00         | 91.00        | 3.72             | 2.47            | 0.00         |
| 39.00        | 3.72             | 2.47            | 0.00         | 92.00        | 3.72             | 2.47            | 0.00         |
| 40.00        | 3.72             | 2.47            | 0.00         | 93.00        | 3.72             | 2.47            | 0.00         |
| 41.00        | 3.72             | 2.47            | 0.00         | 94.00        | 3.72             | 2.47            | 0.00         |
| 42.00        | 3.72             | 2.47            | 0.00         | 95.00        | 3.72             | 2.47            | 0.00         |
| 43.00        | 3.72             | 2.47            | 0.00         | 96.00        | 3.72             | 2.47            | 0.00         |
| 44.00        | 3.72             | 2.47            | 0.00         | 97.00        | 3.72             | 2.47            | 0.00         |
| 45.00        | 3.72             | 2.47            | 0.00         | 98.00        | 3.72             | 2.47            | 0.00         |
| 46.00        | 3.72             | 2.47            | 0.00         | 99.00        | 3.72             | 2.47            | 0.00         |
| 47.00        | 3.72             | 2.47            | 0.00         | 100.00       | 3.72             | 2.47            | 0.00         |
| 48.00        | 3.72             | 2.47            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 2.47            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 2.47            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 2.47            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 2.47            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2dS: Subcat 2d**

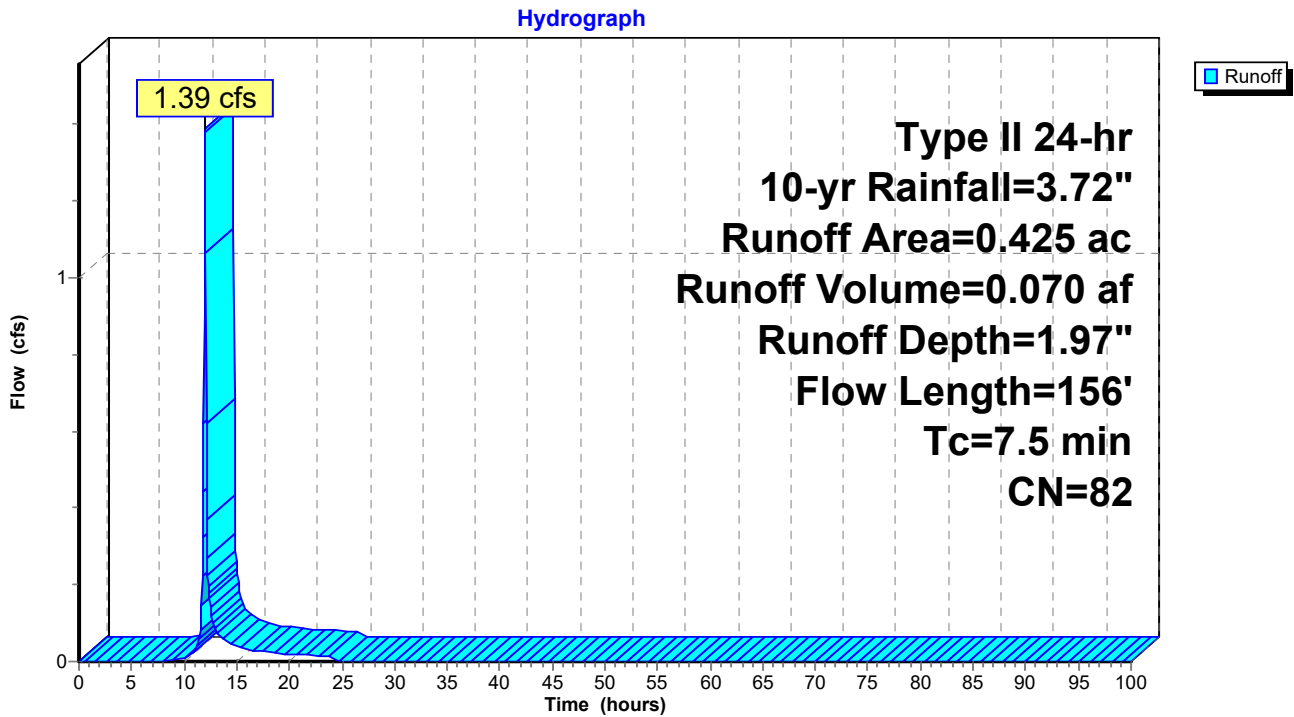
Runoff = 1.39 cfs @ 11.99 hrs, Volume= 0.070 af, Depth= 1.97"  
 Routed to Pond 2ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.089     | 78 | Meadow, non-grazed, HSG D |
| 0.160     | 71 | Meadow, non-grazed, HSG C |
| * 0.013   | 98 | Water Surface, HSG D      |
| * 0.106   | 98 | Water Surface, HSG C      |
| * 0.017   | 89 | Gravel surface, HSG D     |
| * 0.040   | 89 | Gravel surface, HSG C     |
| 0.425     | 82 | Weighted Average          |
| 0.306     |    | 72.00% Pervious Area      |
| 0.119     |    | 28.00% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 7.0      | 91            | 0.0380        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.1      | 8             | 0.0420        | 1.00              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.1      | 14            | 0.0420        | 3.30              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.2      | 29            | 0.0290        | 2.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.5      | 156           | Total         |                   |                |   |

Subcatchment 2dS: Subcat 2d



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"**

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**Hydrograph for Subcatchment 2dS: Subcat 2d**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 1.97               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 1.97               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 1.97               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 1.97               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 1.97               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 1.97               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 1.97               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 1.97               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.00            | 61.00           | 3.72                | 1.97               | 0.00            |
| 9.00            | 0.55                | 0.01               | 0.00            | 62.00           | 3.72                | 1.97               | 0.00            |
| 10.00           | 0.67                | 0.02               | 0.01            | 63.00           | 3.72                | 1.97               | 0.00            |
| 11.00           | 0.87                | 0.07               | 0.03            | 64.00           | 3.72                | 1.97               | 0.00            |
| 12.00           | 2.47                | 0.97               | <b>1.38</b>     | 65.00           | 3.72                | 1.97               | 0.00            |
| 13.00           | 2.87                | 1.28               | 0.08            | 66.00           | 3.72                | 1.97               | 0.00            |
| 14.00           | 3.05                | 1.42               | 0.05            | 67.00           | 3.72                | 1.97               | 0.00            |
| 15.00           | 3.18                | 1.52               | 0.04            | 68.00           | 3.72                | 1.97               | 0.00            |
| 16.00           | 3.27                | 1.60               | 0.03            | 69.00           | 3.72                | 1.97               | 0.00            |
| 17.00           | 3.35                | 1.66               | 0.03            | 70.00           | 3.72                | 1.97               | 0.00            |
| 18.00           | 3.43                | 1.72               | 0.02            | 71.00           | 3.72                | 1.97               | 0.00            |
| 19.00           | 3.49                | 1.77               | 0.02            | 72.00           | 3.72                | 1.97               | 0.00            |
| 20.00           | 3.54                | 1.82               | 0.02            | 73.00           | 3.72                | 1.97               | 0.00            |
| 21.00           | 3.59                | 1.86               | 0.02            | 74.00           | 3.72                | 1.97               | 0.00            |
| 22.00           | 3.63                | 1.89               | 0.02            | 75.00           | 3.72                | 1.97               | 0.00            |
| 23.00           | 3.68                | 1.93               | 0.02            | 76.00           | 3.72                | 1.97               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>1.97</b>        | 0.01            | 77.00           | 3.72                | 1.97               | 0.00            |
| 25.00           | 3.72                | 1.97               | 0.00            | 78.00           | 3.72                | 1.97               | 0.00            |
| 26.00           | 3.72                | 1.97               | 0.00            | 79.00           | 3.72                | 1.97               | 0.00            |
| 27.00           | 3.72                | 1.97               | 0.00            | 80.00           | 3.72                | 1.97               | 0.00            |
| 28.00           | 3.72                | 1.97               | 0.00            | 81.00           | 3.72                | 1.97               | 0.00            |
| 29.00           | 3.72                | 1.97               | 0.00            | 82.00           | 3.72                | 1.97               | 0.00            |
| 30.00           | 3.72                | 1.97               | 0.00            | 83.00           | 3.72                | 1.97               | 0.00            |
| 31.00           | 3.72                | 1.97               | 0.00            | 84.00           | 3.72                | 1.97               | 0.00            |
| 32.00           | 3.72                | 1.97               | 0.00            | 85.00           | 3.72                | 1.97               | 0.00            |
| 33.00           | 3.72                | 1.97               | 0.00            | 86.00           | 3.72                | 1.97               | 0.00            |
| 34.00           | 3.72                | 1.97               | 0.00            | 87.00           | 3.72                | 1.97               | 0.00            |
| 35.00           | 3.72                | 1.97               | 0.00            | 88.00           | 3.72                | 1.97               | 0.00            |
| 36.00           | 3.72                | 1.97               | 0.00            | 89.00           | 3.72                | 1.97               | 0.00            |
| 37.00           | 3.72                | 1.97               | 0.00            | 90.00           | 3.72                | 1.97               | 0.00            |
| 38.00           | 3.72                | 1.97               | 0.00            | 91.00           | 3.72                | 1.97               | 0.00            |
| 39.00           | 3.72                | 1.97               | 0.00            | 92.00           | 3.72                | 1.97               | 0.00            |
| 40.00           | 3.72                | 1.97               | 0.00            | 93.00           | 3.72                | 1.97               | 0.00            |
| 41.00           | 3.72                | 1.97               | 0.00            | 94.00           | 3.72                | 1.97               | 0.00            |
| 42.00           | 3.72                | 1.97               | 0.00            | 95.00           | 3.72                | 1.97               | 0.00            |
| 43.00           | 3.72                | 1.97               | 0.00            | 96.00           | 3.72                | 1.97               | 0.00            |
| 44.00           | 3.72                | 1.97               | 0.00            | 97.00           | 3.72                | 1.97               | 0.00            |
| 45.00           | 3.72                | 1.97               | 0.00            | 98.00           | 3.72                | 1.97               | 0.00            |
| 46.00           | 3.72                | 1.97               | 0.00            | 99.00           | 3.72                | 1.97               | 0.00            |
| 47.00           | 3.72                | 1.97               | 0.00            | 100.00          | 3.72                | 1.97               | 0.00            |
| 48.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 1.97               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2eS: Subcat 2e**

Runoff = 0.80 cfs @ 11.99 hrs, Volume= 0.041 af, Depth= 2.05"  
 Routed to Reach 5R : Proposed RRv Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

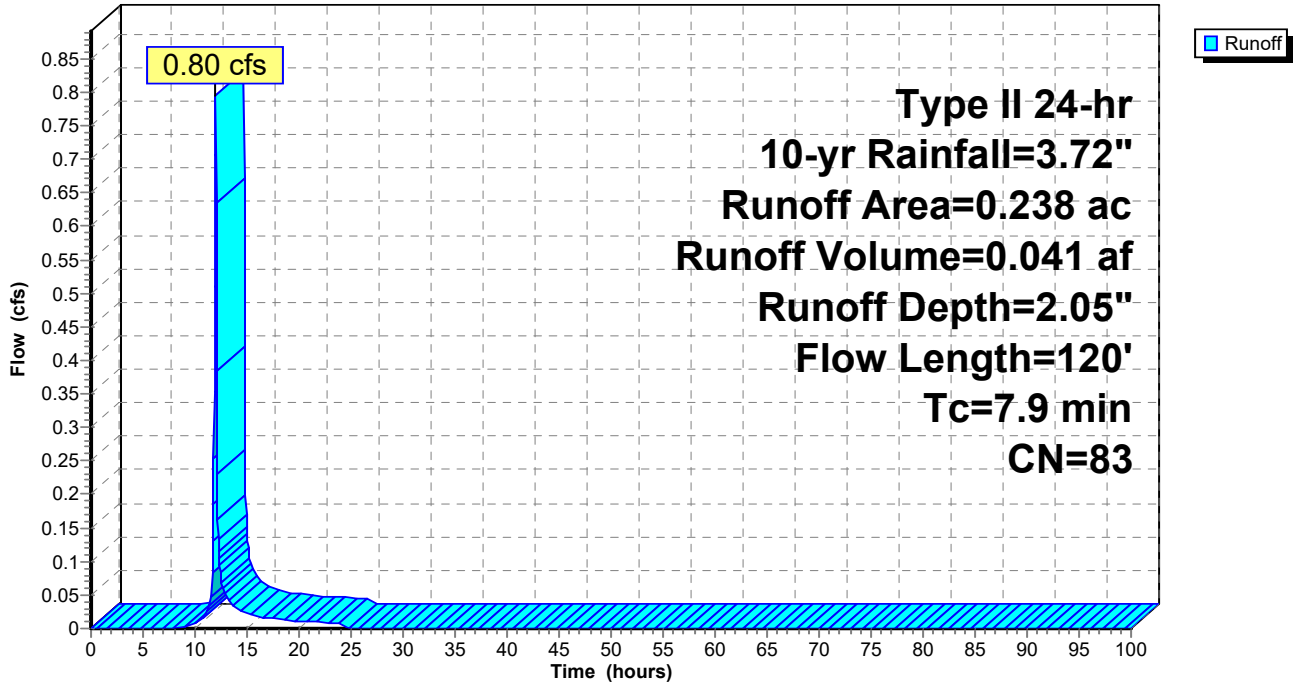
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.175     | 78 | Meadow, non-grazed, HSG D |
| * 0.063   | 98 | Paved parking, HSG D      |
| 0.238     | 83 | Weighted Average          |
| 0.175     |    | 73.53% Pervious Area      |
| 0.063     |    | 26.47% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 2.3      | 17            | 0.0286        | 0.12              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.9      | 11            | 0.0201        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.4      | 25            | 0.0200        | 0.94              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.9      | 52            | 0.0192        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 15            | 0.0194        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 7.9      | 120           | Total         |                   |                |   |



Subcatchment 2eS: Subcat 2e

Hydrograph



**Hydrograph for Subcatchment 2eS: Subcat 2e**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 2.05            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 2.05            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 2.05            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 2.05            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 2.05            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 2.05            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 2.05            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 2.05            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 2.05            | 0.00         |
| 9.00         | 0.55             | 0.01            | 0.00         | 62.00        | 3.72             | 2.05            | 0.00         |
| 10.00        | 0.67             | 0.03            | 0.01         | 63.00        | 3.72             | 2.05            | 0.00         |
| 11.00        | 0.87             | 0.09            | 0.02         | 64.00        | 3.72             | 2.05            | 0.00         |
| 12.00        | 2.47             | 1.03            | <b>0.79</b>  | 65.00        | 3.72             | 2.05            | 0.00         |
| 13.00        | 2.87             | 1.34            | 0.05         | 66.00        | 3.72             | 2.05            | 0.00         |
| 14.00        | 3.05             | 1.49            | 0.03         | 67.00        | 3.72             | 2.05            | 0.00         |
| 15.00        | 3.18             | 1.59            | 0.02         | 68.00        | 3.72             | 2.05            | 0.00         |
| 16.00        | 3.27             | 1.67            | 0.02         | 69.00        | 3.72             | 2.05            | 0.00         |
| 17.00        | 3.35             | 1.74            | 0.02         | 70.00        | 3.72             | 2.05            | 0.00         |
| 18.00        | 3.43             | 1.80            | 0.01         | 71.00        | 3.72             | 2.05            | 0.00         |
| 19.00        | 3.49             | 1.85            | 0.01         | 72.00        | 3.72             | 2.05            | 0.00         |
| 20.00        | 3.54             | 1.89            | 0.01         | 73.00        | 3.72             | 2.05            | 0.00         |
| 21.00        | 3.59             | 1.93            | 0.01         | 74.00        | 3.72             | 2.05            | 0.00         |
| 22.00        | 3.63             | 1.97            | 0.01         | 75.00        | 3.72             | 2.05            | 0.00         |
| 23.00        | 3.68             | 2.01            | 0.01         | 76.00        | 3.72             | 2.05            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>2.05</b>     | 0.01         | 77.00        | 3.72             | 2.05            | 0.00         |
| 25.00        | 3.72             | 2.05            | 0.00         | 78.00        | 3.72             | 2.05            | 0.00         |
| 26.00        | 3.72             | 2.05            | 0.00         | 79.00        | 3.72             | 2.05            | 0.00         |
| 27.00        | 3.72             | 2.05            | 0.00         | 80.00        | 3.72             | 2.05            | 0.00         |
| 28.00        | 3.72             | 2.05            | 0.00         | 81.00        | 3.72             | 2.05            | 0.00         |
| 29.00        | 3.72             | 2.05            | 0.00         | 82.00        | 3.72             | 2.05            | 0.00         |
| 30.00        | 3.72             | 2.05            | 0.00         | 83.00        | 3.72             | 2.05            | 0.00         |
| 31.00        | 3.72             | 2.05            | 0.00         | 84.00        | 3.72             | 2.05            | 0.00         |
| 32.00        | 3.72             | 2.05            | 0.00         | 85.00        | 3.72             | 2.05            | 0.00         |
| 33.00        | 3.72             | 2.05            | 0.00         | 86.00        | 3.72             | 2.05            | 0.00         |
| 34.00        | 3.72             | 2.05            | 0.00         | 87.00        | 3.72             | 2.05            | 0.00         |
| 35.00        | 3.72             | 2.05            | 0.00         | 88.00        | 3.72             | 2.05            | 0.00         |
| 36.00        | 3.72             | 2.05            | 0.00         | 89.00        | 3.72             | 2.05            | 0.00         |
| 37.00        | 3.72             | 2.05            | 0.00         | 90.00        | 3.72             | 2.05            | 0.00         |
| 38.00        | 3.72             | 2.05            | 0.00         | 91.00        | 3.72             | 2.05            | 0.00         |
| 39.00        | 3.72             | 2.05            | 0.00         | 92.00        | 3.72             | 2.05            | 0.00         |
| 40.00        | 3.72             | 2.05            | 0.00         | 93.00        | 3.72             | 2.05            | 0.00         |
| 41.00        | 3.72             | 2.05            | 0.00         | 94.00        | 3.72             | 2.05            | 0.00         |
| 42.00        | 3.72             | 2.05            | 0.00         | 95.00        | 3.72             | 2.05            | 0.00         |
| 43.00        | 3.72             | 2.05            | 0.00         | 96.00        | 3.72             | 2.05            | 0.00         |
| 44.00        | 3.72             | 2.05            | 0.00         | 97.00        | 3.72             | 2.05            | 0.00         |
| 45.00        | 3.72             | 2.05            | 0.00         | 98.00        | 3.72             | 2.05            | 0.00         |
| 46.00        | 3.72             | 2.05            | 0.00         | 99.00        | 3.72             | 2.05            | 0.00         |
| 47.00        | 3.72             | 2.05            | 0.00         | 100.00       | 3.72             | 2.05            | 0.00         |
| 48.00        | 3.72             | 2.05            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 2.05            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 2.05            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 2.05            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 2.05            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.10 cfs @ 11.97 hrs, Volume= 0.005 af, Depth= 1.89"  
 Routed to Link AP2 : Analysis Point 2

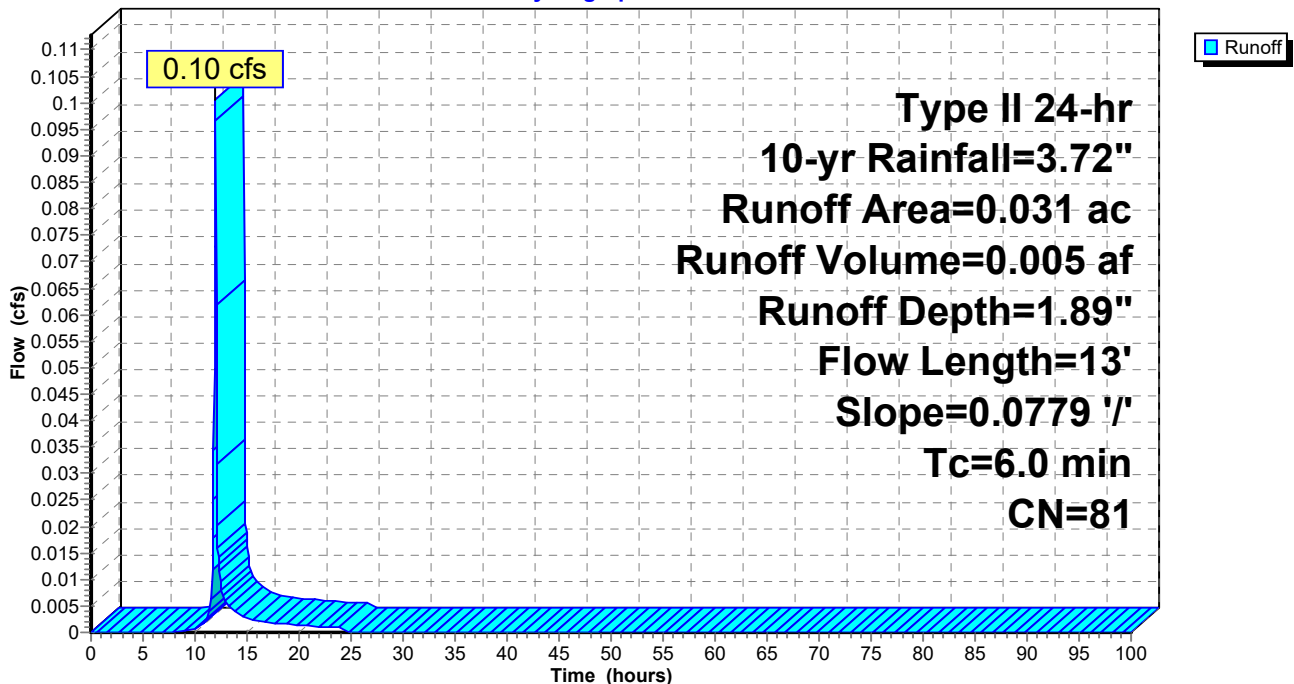
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.001     | 98 | Paved roads w/curbs & sewers, HSG D |
| 0.030     | 80 | >75% Grass cover, Good, HSG D       |
| 0.031     | 81 | Weighted Average                    |
| 0.030     |    | 96.77% Pervious Area                |
| 0.001     |    | 3.23% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.2      | 13            | 0.0779                                   | 0.18              |                | Sheet Flow, Hydro Flow<br>Grass: Short n= 0.150 P2= 2.59" |
| 1.2      | 13            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Hydrograph for Subcatchment 3S: Subcat 3**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 1.89               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 1.89               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 1.89               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 1.89               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 1.89               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 1.89               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 1.89               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 1.89               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.00            | 61.00           | 3.72                | 1.89               | 0.00            |
| 9.00            | 0.55                | 0.00               | 0.00            | 62.00           | 3.72                | 1.89               | 0.00            |
| 10.00           | 0.67                | 0.02               | 0.00            | 63.00           | 3.72                | 1.89               | 0.00            |
| 11.00           | 0.87                | 0.06               | <b>0.00</b>     | 64.00           | 3.72                | 1.89               | 0.00            |
| 12.00           | 2.47                | 0.92               | <b>0.10</b>     | 65.00           | 3.72                | 1.89               | 0.00            |
| 13.00           | 2.87                | 1.22               | 0.01            | 66.00           | 3.72                | 1.89               | 0.00            |
| 14.00           | 3.05                | 1.35               | 0.00            | 67.00           | 3.72                | 1.89               | 0.00            |
| 15.00           | 3.18                | 1.45               | 0.00            | 68.00           | 3.72                | 1.89               | 0.00            |
| 16.00           | 3.27                | 1.53               | 0.00            | 69.00           | 3.72                | 1.89               | 0.00            |
| 17.00           | 3.35                | 1.59               | 0.00            | 70.00           | 3.72                | 1.89               | 0.00            |
| 18.00           | 3.43                | 1.65               | 0.00            | 71.00           | 3.72                | 1.89               | 0.00            |
| 19.00           | 3.49                | 1.70               | 0.00            | 72.00           | 3.72                | 1.89               | 0.00            |
| 20.00           | 3.54                | 1.74               | 0.00            | 73.00           | 3.72                | 1.89               | 0.00            |
| 21.00           | 3.59                | 1.78               | 0.00            | 74.00           | 3.72                | 1.89               | 0.00            |
| 22.00           | 3.63                | 1.82               | 0.00            | 75.00           | 3.72                | 1.89               | 0.00            |
| 23.00           | 3.68                | 1.85               | 0.00            | 76.00           | 3.72                | 1.89               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>1.89</b>        | 0.00            | 77.00           | 3.72                | 1.89               | 0.00            |
| 25.00           | 3.72                | 1.89               | 0.00            | 78.00           | 3.72                | 1.89               | 0.00            |
| 26.00           | 3.72                | 1.89               | 0.00            | 79.00           | 3.72                | 1.89               | 0.00            |
| 27.00           | 3.72                | 1.89               | 0.00            | 80.00           | 3.72                | 1.89               | 0.00            |
| 28.00           | 3.72                | 1.89               | 0.00            | 81.00           | 3.72                | 1.89               | 0.00            |
| 29.00           | 3.72                | 1.89               | 0.00            | 82.00           | 3.72                | 1.89               | 0.00            |
| 30.00           | 3.72                | 1.89               | 0.00            | 83.00           | 3.72                | 1.89               | 0.00            |
| 31.00           | 3.72                | 1.89               | 0.00            | 84.00           | 3.72                | 1.89               | 0.00            |
| 32.00           | 3.72                | 1.89               | 0.00            | 85.00           | 3.72                | 1.89               | 0.00            |
| 33.00           | 3.72                | 1.89               | 0.00            | 86.00           | 3.72                | 1.89               | 0.00            |
| 34.00           | 3.72                | 1.89               | 0.00            | 87.00           | 3.72                | 1.89               | 0.00            |
| 35.00           | 3.72                | 1.89               | 0.00            | 88.00           | 3.72                | 1.89               | 0.00            |
| 36.00           | 3.72                | 1.89               | 0.00            | 89.00           | 3.72                | 1.89               | 0.00            |
| 37.00           | 3.72                | 1.89               | 0.00            | 90.00           | 3.72                | 1.89               | 0.00            |
| 38.00           | 3.72                | 1.89               | 0.00            | 91.00           | 3.72                | 1.89               | 0.00            |
| 39.00           | 3.72                | 1.89               | 0.00            | 92.00           | 3.72                | 1.89               | 0.00            |
| 40.00           | 3.72                | 1.89               | 0.00            | 93.00           | 3.72                | 1.89               | 0.00            |
| 41.00           | 3.72                | 1.89               | 0.00            | 94.00           | 3.72                | 1.89               | 0.00            |
| 42.00           | 3.72                | 1.89               | 0.00            | 95.00           | 3.72                | 1.89               | 0.00            |
| 43.00           | 3.72                | 1.89               | 0.00            | 96.00           | 3.72                | 1.89               | 0.00            |
| 44.00           | 3.72                | 1.89               | 0.00            | 97.00           | 3.72                | 1.89               | 0.00            |
| 45.00           | 3.72                | 1.89               | 0.00            | 98.00           | 3.72                | 1.89               | 0.00            |
| 46.00           | 3.72                | 1.89               | 0.00            | 99.00           | 3.72                | 1.89               | 0.00            |
| 47.00           | 3.72                | 1.89               | 0.00            | 100.00          | 3.72                | 1.89               | 0.00            |
| 48.00           | 3.72                | 1.89               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 1.89               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 1.89               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 1.89               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 1.89               | 0.00            |                 |                     |                    |                 |

**Summary for Reach 1R: Existing Swale**

Inflow Area = 3.372 ac, 8.66% Impervious, Inflow Depth = 0.09" for 10-yr event  
 Inflow = 0.55 cfs @ 11.97 hrs, Volume= 0.026 af  
 Outflow = 0.52 cfs @ 12.00 hrs, Volume= 0.026 af, Atten= 4%, Lag= 1.5 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.65 fps, Min. Travel Time= 2.5 min  
 Avg. Velocity = 0.43 fps, Avg. Travel Time= 9.4 min

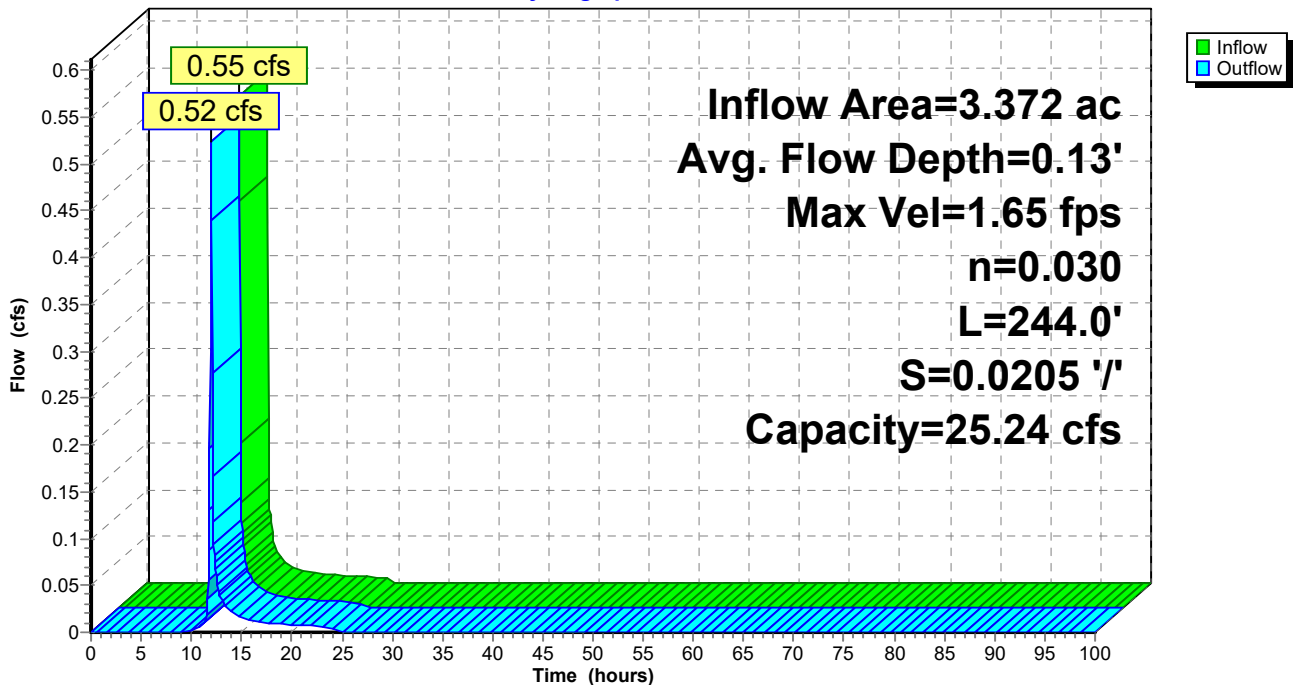
Peak Storage= 77 cf @ 12.00 hrs  
 Average Depth at Peak Storage= 0.13' , Surface Width= 2.79'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 ' / ' Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 ' / '  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

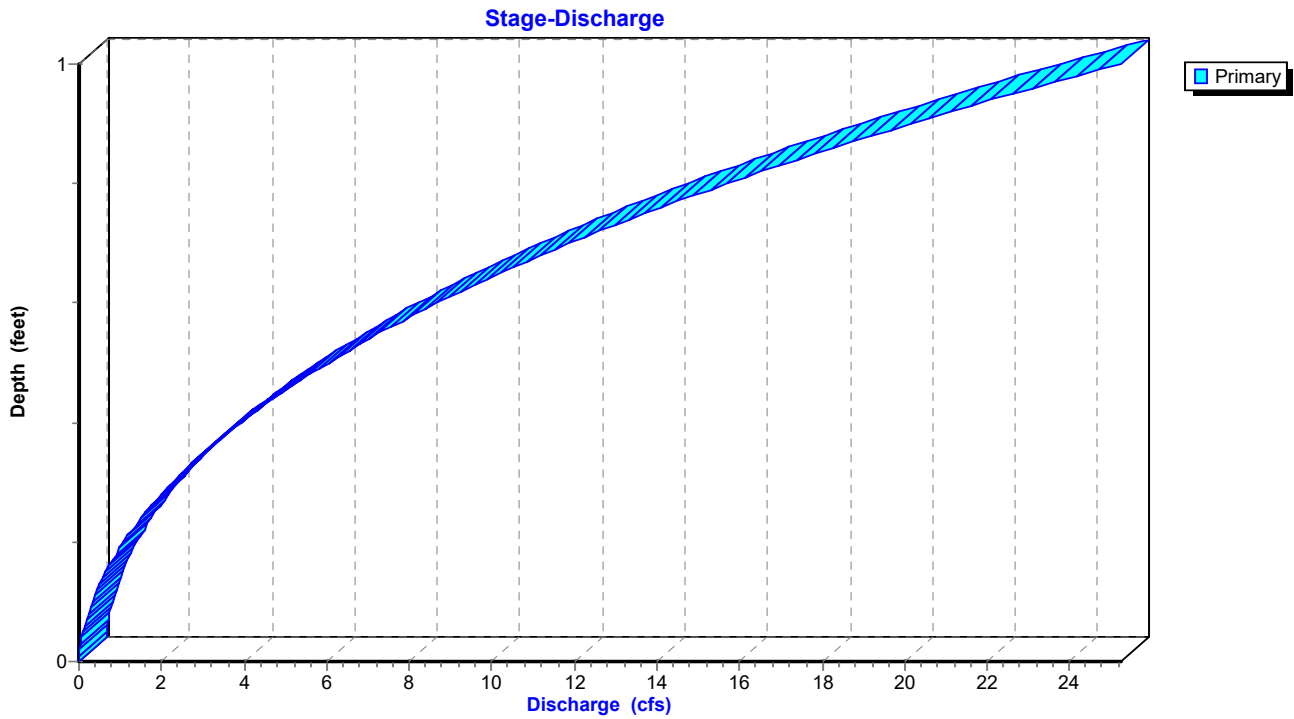


**Reach 1R: Existing Swale**

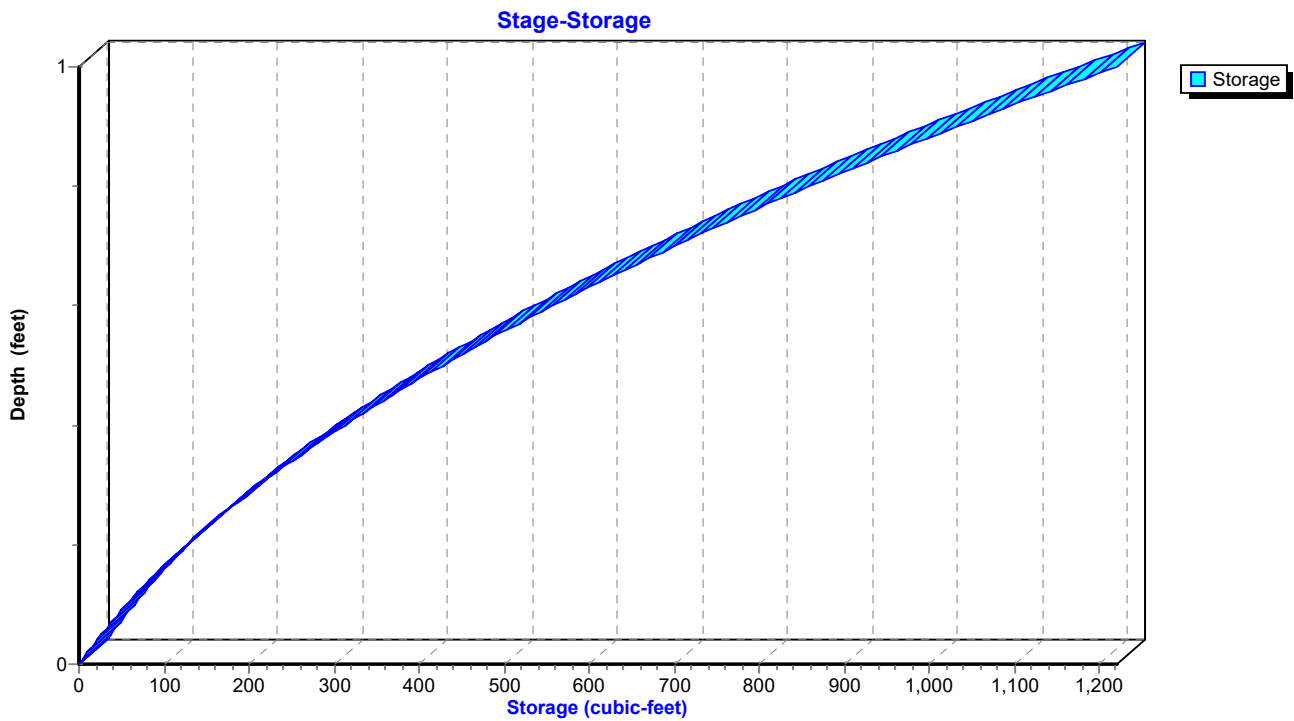
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>1</b>             | <b>316.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.05</b>  | <b>19</b>            | <b>316.04</b>    | <b>0.06</b>   |
| 15.00        | 0.02         | 8                    | 316.02           | 0.02          |
| 17.50        | 0.01         | 6                    | 316.01           | 0.01          |
| 20.00        | 0.01         | 5                    | 316.01           | 0.01          |
| 22.50        | 0.01         | 5                    | 316.01           | 0.01          |
| 25.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |



**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Reach 2R: Proposed RRv Swale**

Inflow Area = 0.830 ac, 18.55% Impervious, Inflow Depth = 1.97" for 10-yr event  
 Inflow = 2.77 cfs @ 11.98 hrs, Volume= 0.136 af  
 Outflow = 2.29 cfs @ 12.03 hrs, Volume= 0.136 af, Atten= 17%, Lag= 3.0 min  
 Routed to Pond 3P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.16 fps, Min. Travel Time= 5.6 min  
 Avg. Velocity= 0.29 fps, Avg. Travel Time= 22.3 min

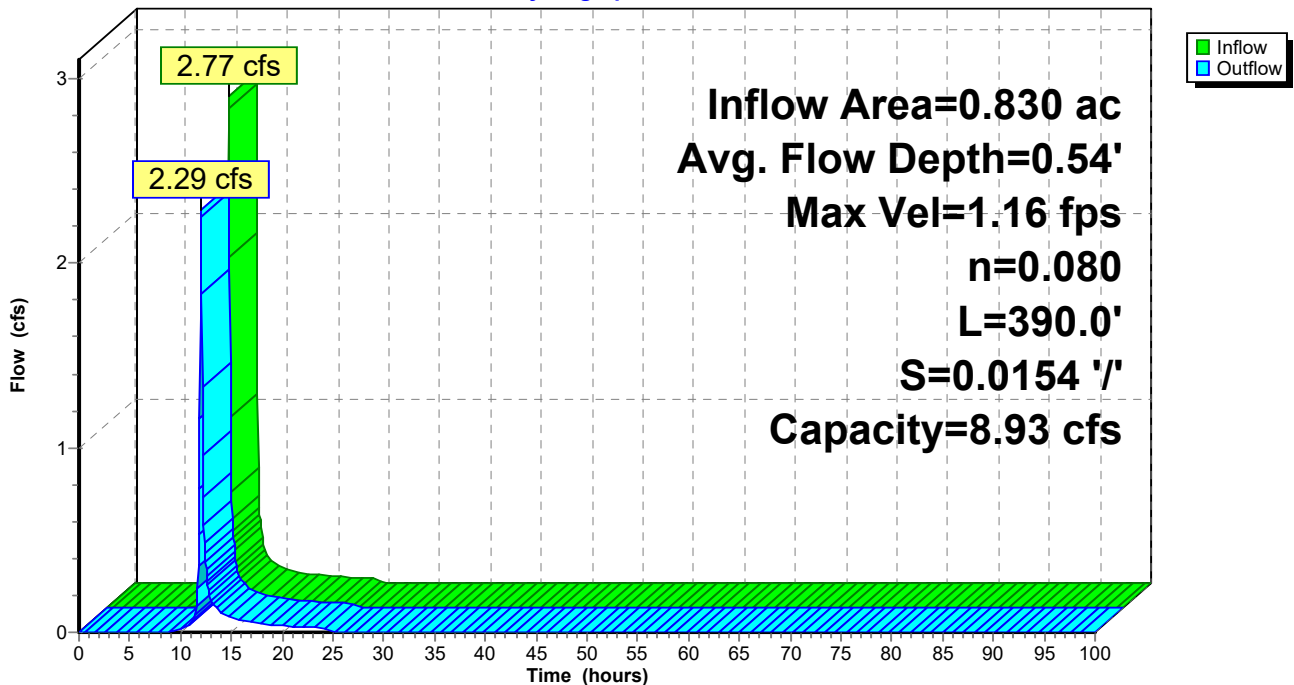
Peak Storage= 764 cf @ 12.03 hrs  
 Average Depth at Peak Storage= 0.54' , Surface Width= 5.25'  
 Bank-Full Depth= 1.04' Flow Area= 5.3 sf, Capacity= 8.93 cfs

2.00' x 1.04' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 8.24'  
 Length= 390.0' Slope= 0.0154 '/  
 Inlet Invert= 318.00', Outlet Invert= 312.00'

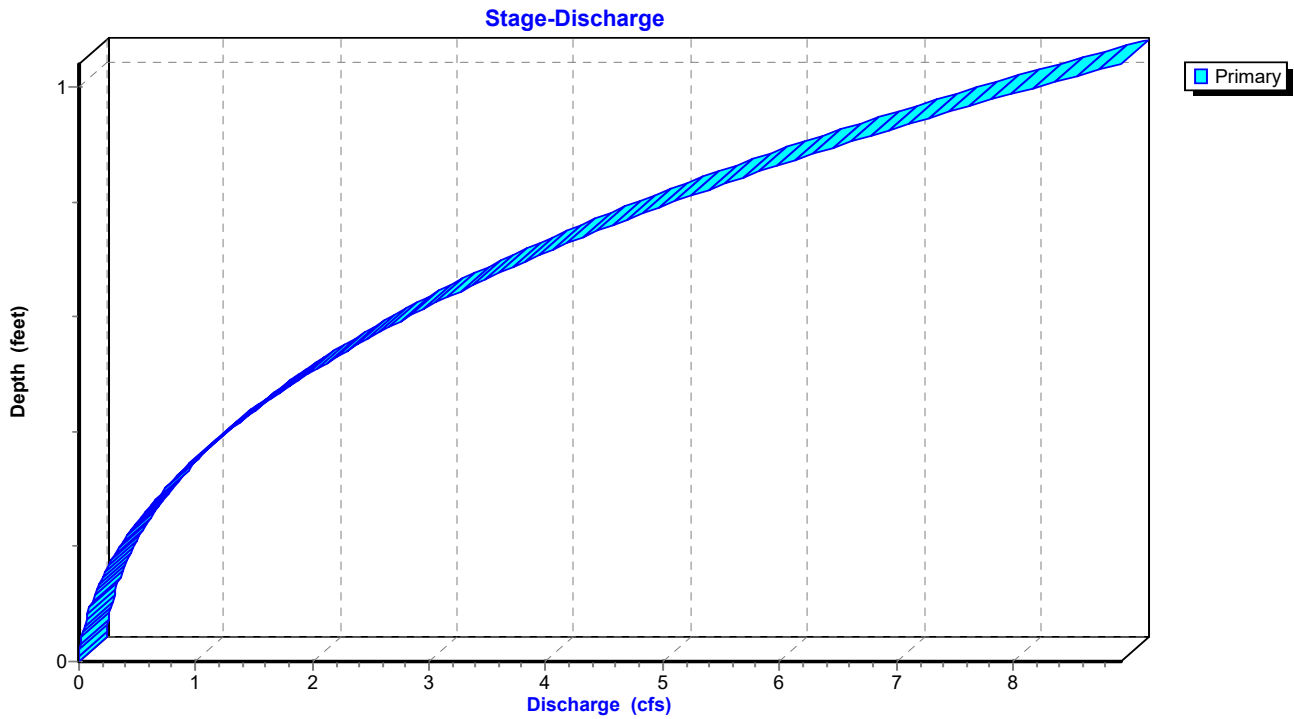


**Reach 2R: Proposed RRv Swale**

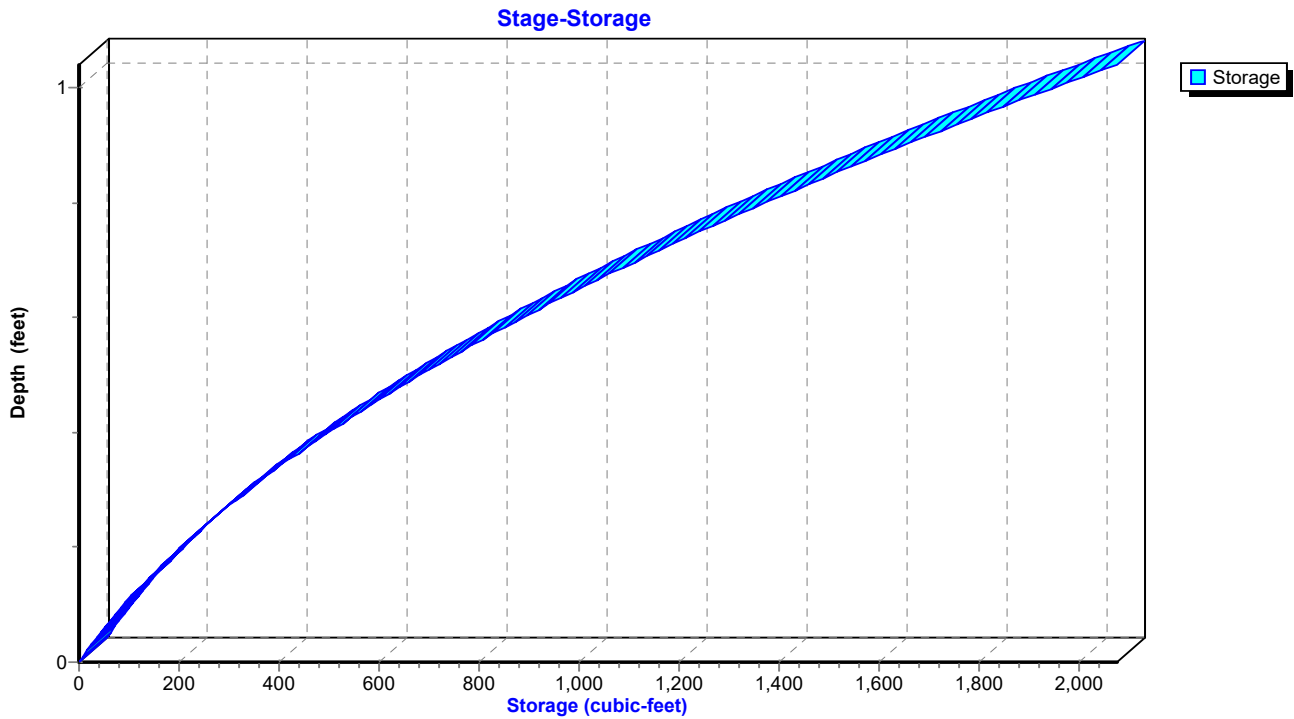
Hydrograph



### Reach 2R: Proposed RRv Swale



### Reach 2R: Proposed RRv Swale



**Hydrograph for Reach 2R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 10.00        | <b>0.02</b>  | <b>26</b>            | <b>318.03</b>    | <b>0.02</b>   |
| 12.50        | <b>0.26</b>  | <b>197</b>           | <b>318.20</b>    | <b>0.34</b>   |
| 15.00        | 0.08         | 75                   | 318.09           | 0.08          |
| 17.50        | 0.05         | 56                   | 318.07           | 0.05          |
| 20.00        | 0.03         | 45                   | 318.05           | 0.04          |
| 22.50        | 0.03         | 41                   | 318.05           | 0.03          |
| 25.00        | 0.00         | 9                    | 318.01           | 0.00          |
| 27.50        | 0.00         | 1                    | 318.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 318.00           | 0.00          |

**Stage-Discharge for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 318.00              | 0.00                 | 0.00               | 318.53              | 1.16                 | 2.20               |
| 318.01              | 0.10                 | 0.00               | 318.54              | 1.17                 | 2.28               |
| 318.02              | 0.17                 | 0.01               | 318.55              | 1.18                 | 2.37               |
| 318.03              | 0.22                 | 0.01               | 318.56              | 1.19                 | 2.46               |
| 318.04              | 0.26                 | 0.02               | 318.57              | 1.20                 | 2.54               |
| 318.05              | 0.30                 | 0.03               | 318.58              | 1.21                 | 2.63               |
| 318.06              | 0.33                 | 0.04               | 318.59              | 1.23                 | 2.73               |
| 318.07              | 0.37                 | 0.06               | 318.60              | 1.24                 | 2.82               |
| 318.08              | 0.40                 | 0.07               | 318.61              | 1.25                 | 2.92               |
| 318.09              | 0.43                 | 0.09               | 318.62              | 1.26                 | 3.01               |
| 318.10              | 0.45                 | 0.10               | 318.63              | 1.27                 | 3.11               |
| 318.11              | 0.48                 | 0.12               | 318.64              | 1.28                 | 3.22               |
| 318.12              | 0.50                 | 0.14               | 318.65              | 1.29                 | 3.32               |
| 318.13              | 0.53                 | 0.16               | 318.66              | 1.30                 | 3.42               |
| 318.14              | 0.55                 | 0.19               | 318.67              | 1.31                 | 3.53               |
| 318.15              | 0.57                 | 0.21               | 318.68              | 1.32                 | 3.64               |
| 318.16              | 0.60                 | 0.24               | 318.69              | 1.34                 | 3.75               |
| 318.17              | 0.62                 | 0.26               | 318.70              | 1.35                 | 3.86               |
| 318.18              | 0.64                 | 0.29               | 318.71              | 1.36                 | 3.98               |
| 318.19              | 0.66                 | 0.32               | 318.72              | 1.37                 | 4.09               |
| 318.20              | 0.68                 | 0.35               | 318.73              | 1.38                 | 4.21               |
| 318.21              | 0.70                 | 0.38               | 318.74              | 1.39                 | 4.33               |
| 318.22              | 0.71                 | 0.42               | 318.75              | 1.40                 | 4.46               |
| 318.23              | 0.73                 | 0.45               | 318.76              | 1.41                 | 4.58               |
| 318.24              | 0.75                 | 0.49               | 318.77              | 1.42                 | 4.71               |
| 318.25              | 0.77                 | 0.53               | 318.78              | 1.43                 | 4.84               |
| 318.26              | 0.78                 | 0.57               | 318.79              | 1.44                 | 4.97               |
| 318.27              | 0.80                 | 0.61               | 318.80              | 1.45                 | 5.10               |
| 318.28              | 0.82                 | 0.65               | 318.81              | 1.46                 | 5.23               |
| 318.29              | 0.83                 | 0.69               | 318.82              | 1.47                 | 5.37               |
| 318.30              | 0.85                 | 0.74               | 318.83              | 1.48                 | 5.51               |
| 318.31              | 0.86                 | 0.78               | 318.84              | 1.49                 | 5.65               |
| 318.32              | 0.88                 | 0.83               | 318.85              | 1.50                 | 5.79               |
| 318.33              | 0.89                 | 0.88               | 318.86              | 1.51                 | 5.94               |
| 318.34              | 0.91                 | 0.93               | 318.87              | 1.52                 | 6.09               |
| 318.35              | 0.92                 | 0.98               | 318.88              | 1.53                 | 6.24               |
| 318.36              | 0.94                 | 1.04               | 318.89              | 1.54                 | 6.39               |
| 318.37              | 0.95                 | 1.09               | 318.90              | 1.55                 | 6.54               |
| 318.38              | 0.96                 | 1.15               | 318.91              | 1.56                 | 6.70               |
| 318.39              | 0.98                 | 1.21               | 318.92              | 1.57                 | 6.86               |
| 318.40              | 0.99                 | 1.27               | 318.93              | 1.57                 | 7.02               |
| 318.41              | 1.01                 | 1.33               | 318.94              | 1.58                 | 7.18               |
| 318.42              | 1.02                 | 1.40               | 318.95              | 1.59                 | 7.34               |
| 318.43              | 1.03                 | 1.46               | 318.96              | 1.60                 | 7.51               |
| 318.44              | 1.04                 | 1.53               | 318.97              | 1.61                 | 7.68               |
| 318.45              | 1.06                 | 1.59               | 318.98              | 1.62                 | 7.85               |
| 318.46              | 1.07                 | 1.66               | 318.99              | 1.63                 | 8.02               |
| 318.47              | 1.08                 | 1.74               | 319.00              | 1.64                 | 8.20               |
| 318.48              | 1.10                 | 1.81               | 319.01              | 1.65                 | 8.38               |
| 318.49              | 1.11                 | 1.88               | 319.02              | 1.66                 | 8.56               |
| 318.50              | 1.12                 | 1.96               | 319.03              | 1.67                 | 8.74               |
| 318.51              | 1.13                 | 2.04               | 319.04              | <b>1.68</b>          | <b>8.93</b>        |
| 318.52              | 1.14                 | 2.12               |                     |                      |                    |

**Stage-Area-Storage for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 318.00              | 0.0                 | 0                       | 318.53              | 1.9                 | 742                     |
| 318.01              | 0.0                 | 8                       | 318.54              | 2.0                 | 762                     |
| 318.02              | 0.0                 | 16                      | 318.55              | 2.0                 | 783                     |
| 318.03              | 0.1                 | 24                      | 318.56              | 2.1                 | 804                     |
| 318.04              | 0.1                 | 33                      | 318.57              | 2.1                 | 825                     |
| 318.05              | 0.1                 | 42                      | 318.58              | 2.2                 | 846                     |
| 318.06              | 0.1                 | 51                      | 318.59              | 2.2                 | 868                     |
| 318.07              | 0.2                 | 60                      | 318.60              | 2.3                 | 889                     |
| 318.08              | 0.2                 | 70                      | 318.61              | 2.3                 | 911                     |
| 318.09              | 0.2                 | 80                      | 318.62              | 2.4                 | 933                     |
| 318.10              | 0.2                 | 90                      | 318.63              | 2.5                 | 956                     |
| 318.11              | 0.3                 | 100                     | 318.64              | 2.5                 | 978                     |
| 318.12              | 0.3                 | 110                     | 318.65              | 2.6                 | 1,001                   |
| 318.13              | 0.3                 | 121                     | 318.66              | 2.6                 | 1,024                   |
| 318.14              | 0.3                 | 132                     | 318.67              | 2.7                 | 1,048                   |
| 318.15              | 0.4                 | 143                     | 318.68              | 2.7                 | 1,071                   |
| 318.16              | 0.4                 | 155                     | 318.69              | 2.8                 | 1,095                   |
| 318.17              | 0.4                 | 166                     | 318.70              | 2.9                 | 1,119                   |
| 318.18              | 0.5                 | 178                     | 318.71              | 2.9                 | 1,144                   |
| 318.19              | 0.5                 | 190                     | 318.72              | 3.0                 | 1,168                   |
| 318.20              | 0.5                 | 203                     | 318.73              | 3.1                 | 1,193                   |
| 318.21              | 0.6                 | 215                     | 318.74              | 3.1                 | 1,218                   |
| 318.22              | 0.6                 | 228                     | 318.75              | 3.2                 | 1,243                   |
| 318.23              | 0.6                 | 241                     | 318.76              | 3.3                 | 1,269                   |
| 318.24              | 0.7                 | 255                     | 318.77              | 3.3                 | 1,294                   |
| 318.25              | 0.7                 | 268                     | 318.78              | 3.4                 | 1,320                   |
| 318.26              | 0.7                 | 282                     | 318.79              | 3.5                 | 1,346                   |
| 318.27              | 0.8                 | 296                     | 318.80              | 3.5                 | 1,373                   |
| 318.28              | 0.8                 | 310                     | 318.81              | 3.6                 | 1,399                   |
| 318.29              | 0.8                 | 325                     | 318.82              | 3.7                 | 1,426                   |
| 318.30              | 0.9                 | 339                     | 318.83              | 3.7                 | 1,453                   |
| 318.31              | 0.9                 | 354                     | 318.84              | 3.8                 | 1,481                   |
| 318.32              | 0.9                 | 369                     | 318.85              | 3.9                 | 1,508                   |
| 318.33              | 1.0                 | 385                     | 318.86              | 3.9                 | 1,536                   |
| 318.34              | 1.0                 | 400                     | 318.87              | 4.0                 | 1,564                   |
| 318.35              | 1.1                 | 416                     | 318.88              | 4.1                 | 1,592                   |
| 318.36              | 1.1                 | 432                     | 318.89              | 4.2                 | 1,621                   |
| 318.37              | 1.2                 | 449                     | 318.90              | 4.2                 | 1,650                   |
| 318.38              | 1.2                 | 465                     | 318.91              | 4.3                 | 1,679                   |
| 318.39              | 1.2                 | 482                     | 318.92              | 4.4                 | 1,708                   |
| 318.40              | 1.3                 | 499                     | 318.93              | 4.5                 | 1,737                   |
| 318.41              | 1.3                 | 517                     | 318.94              | 4.5                 | 1,767                   |
| 318.42              | 1.4                 | 534                     | 318.95              | 4.6                 | 1,797                   |
| 318.43              | 1.4                 | 552                     | 318.96              | 4.7                 | 1,827                   |
| 318.44              | 1.5                 | 570                     | 318.97              | 4.8                 | 1,857                   |
| 318.45              | 1.5                 | 588                     | 318.98              | 4.8                 | 1,888                   |
| 318.46              | 1.6                 | 606                     | 318.99              | 4.9                 | 1,919                   |
| 318.47              | 1.6                 | 625                     | 319.00              | 5.0                 | 1,950                   |
| 318.48              | 1.7                 | 644                     | 319.01              | 5.1                 | 1,981                   |
| 318.49              | 1.7                 | 663                     | 319.02              | 5.2                 | 2,013                   |
| 318.50              | 1.8                 | 683                     | 319.03              | 5.2                 | 2,045                   |
| 318.51              | 1.8                 | 702                     | 319.04              | <b>5.3</b>          | <b>2,077</b>            |
| 318.52              | 1.9                 | 722                     |                     |                     |                         |

### Summary for Reach 3R: Proposed RRv Swale

[63] Warning: Exceeded Reach 4R INLET depth by 0.08' @ 12.00 hrs

Inflow Area = 0.744 ac, 40.73% Impervious, Inflow Depth = 2.33" for 10-yr event  
Inflow = 2.80 cfs @ 11.98 hrs, Volume= 0.145 af  
Outflow = 2.70 cfs @ 12.00 hrs, Volume= 0.145 af, Atten= 3%, Lag= 1.2 min  
Routed to Pond 3P : Proposed Stormwater Pond

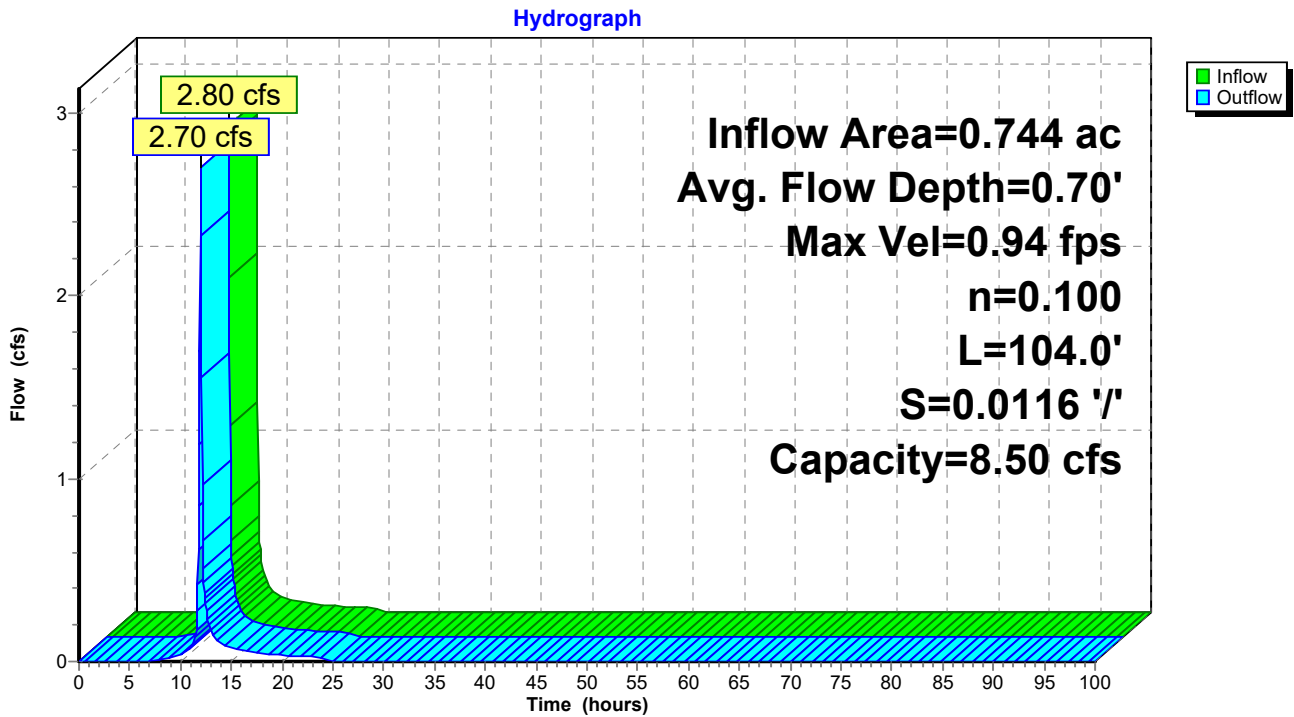
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.94 fps, Min. Travel Time= 1.8 min  
Avg. Velocity = 0.25 fps, Avg. Travel Time= 7.0 min

Peak Storage= 300 cf @ 12.00 hrs  
Average Depth at Peak Storage= 0.70' , Surface Width= 6.21'  
Bank-Full Depth= 1.20' Flow Area= 6.7 sf, Capacity= 8.50 cfs

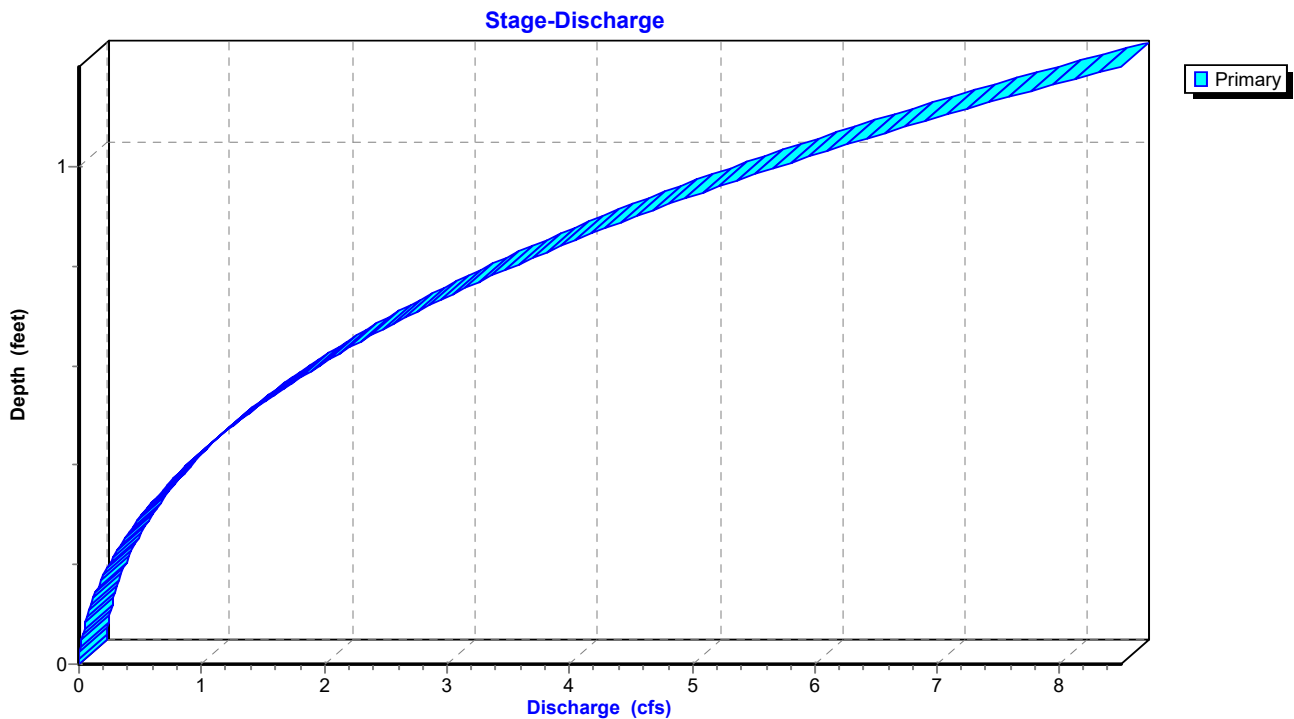
2.00' x 1.20' deep channel, n= 0.100 Earth, dense brush, high stage  
Side Slope Z-value= 3.0 '/' Top Width= 9.20'  
Length= 104.0' Slope= 0.0116 '/'  
Inlet Invert= 312.21', Outlet Invert= 311.00'



**Reach 3R: Proposed RRv Swale**

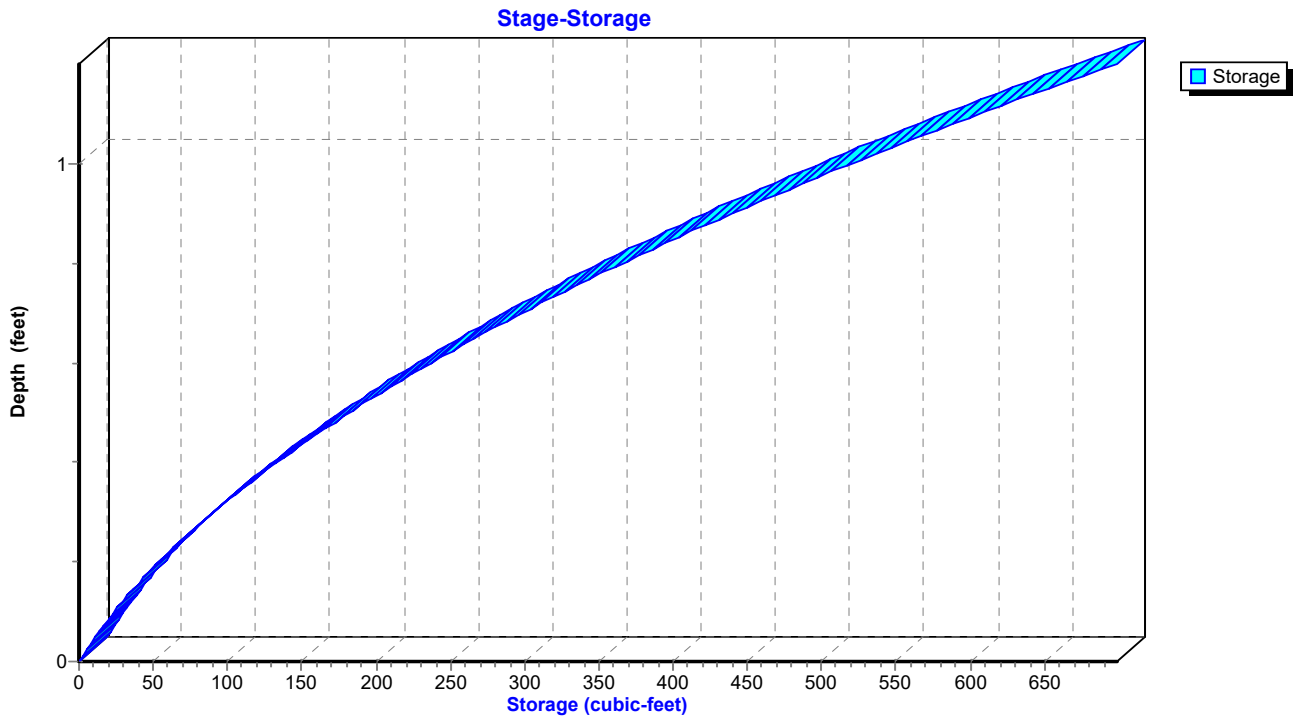


**Reach 3R: Proposed RRv Swale**





### Reach 3R: Proposed RRv Swale



**Hydrograph for Reach 3R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 7.50         | 0.01         | 5                    | 312.23           | 0.01          |
| 10.00        | <b>0.03</b>  | <b>14</b>            | <b>312.27</b>    | <b>0.03</b>   |
| 12.50        | <b>0.27</b>  | <b>60</b>            | <b>312.43</b>    | <b>0.29</b>   |
| 15.00        | 0.08         | 25                   | 312.31           | 0.08          |
| 17.50        | 0.05         | 18                   | 312.29           | 0.05          |
| 20.00        | 0.03         | 14                   | 312.27           | 0.03          |
| 22.50        | 0.03         | 13                   | 312.27           | 0.03          |
| 25.00        | 0.00         | 1                    | 312.22           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.21           | 0.00          |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Stage-Discharge for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.21              | 0.00                 | 0.00               | 312.74              | 0.80                 | 1.53               | 313.27              | 1.18                 | 6.47               |
| 312.22              | 0.07                 | 0.00               | 312.75              | 0.81                 | 1.59               | 313.28              | 1.19                 | 6.61               |
| 312.23              | 0.11                 | 0.00               | 312.76              | 0.82                 | 1.65               | 313.29              | 1.19                 | 6.74               |
| 312.24              | 0.15                 | 0.01               | 312.77              | 0.83                 | 1.71               | 313.30              | 1.20                 | 6.88               |
| 312.25              | 0.18                 | 0.02               | 312.78              | 0.84                 | 1.77               | 313.31              | 1.20                 | 7.02               |
| 312.26              | 0.21                 | 0.02               | 312.79              | 0.84                 | 1.83               | 313.32              | 1.21                 | 7.16               |
| 312.27              | 0.23                 | 0.03               | 312.80              | 0.85                 | 1.90               | 313.33              | 1.22                 | 7.30               |
| 312.28              | 0.25                 | 0.04               | 312.81              | 0.86                 | 1.96               | 313.34              | 1.22                 | 7.44               |
| 312.29              | 0.28                 | 0.05               | 312.82              | 0.87                 | 2.03               | 313.35              | 1.23                 | 7.59               |
| 312.30              | 0.30                 | 0.06               | 312.83              | 0.88                 | 2.10               | 313.36              | 1.23                 | 7.74               |
| 312.31              | 0.32                 | 0.07               | 312.84              | 0.88                 | 2.17               | 313.37              | 1.24                 | 7.89               |
| 312.32              | 0.33                 | 0.09               | 312.85              | 0.89                 | 2.24               | 313.38              | 1.25                 | 8.04               |
| 312.33              | 0.35                 | 0.10               | 312.86              | 0.90                 | 2.31               | 313.39              | 1.25                 | 8.19               |
| 312.34              | 0.37                 | 0.11               | 312.87              | 0.91                 | 2.38               | 313.40              | 1.26                 | 8.34               |
| 312.35              | 0.38                 | 0.13               | 312.88              | 0.91                 | 2.46               | 313.41              | <b>1.26</b>          | <b>8.50</b>        |
| 312.36              | 0.40                 | 0.15               | 312.89              | 0.92                 | 2.53               |                     |                      |                    |
| 312.37              | 0.41                 | 0.16               | 312.90              | 0.93                 | 2.61               |                     |                      |                    |
| 312.38              | 0.43                 | 0.18               | 312.91              | 0.94                 | 2.69               |                     |                      |                    |
| 312.39              | 0.44                 | 0.20               | 312.92              | 0.94                 | 2.77               |                     |                      |                    |
| 312.40              | 0.46                 | 0.22               | 312.93              | 0.95                 | 2.85               |                     |                      |                    |
| 312.41              | 0.47                 | 0.25               | 312.94              | 0.96                 | 2.93               |                     |                      |                    |
| 312.42              | 0.48                 | 0.27               | 312.95              | 0.97                 | 3.02               |                     |                      |                    |
| 312.43              | 0.50                 | 0.29               | 312.96              | 0.97                 | 3.10               |                     |                      |                    |
| 312.44              | 0.51                 | 0.32               | 312.97              | 0.98                 | 3.19               |                     |                      |                    |
| 312.45              | 0.52                 | 0.34               | 312.98              | 0.99                 | 3.28               |                     |                      |                    |
| 312.46              | 0.53                 | 0.37               | 312.99              | 0.99                 | 3.36               |                     |                      |                    |
| 312.47              | 0.55                 | 0.39               | 313.00              | 1.00                 | 3.46               |                     |                      |                    |
| 312.48              | 0.56                 | 0.42               | 313.01              | 1.01                 | 3.55               |                     |                      |                    |
| 312.49              | 0.57                 | 0.45               | 313.02              | 1.01                 | 3.64               |                     |                      |                    |
| 312.50              | 0.58                 | 0.48               | 313.03              | 1.02                 | 3.74               |                     |                      |                    |
| 312.51              | 0.59                 | 0.51               | 313.04              | 1.03                 | 3.83               |                     |                      |                    |
| 312.52              | 0.60                 | 0.55               | 313.05              | 1.04                 | 3.93               |                     |                      |                    |
| 312.53              | 0.61                 | 0.58               | 313.06              | 1.04                 | 4.03               |                     |                      |                    |
| 312.54              | 0.62                 | 0.61               | 313.07              | 1.05                 | 4.13               |                     |                      |                    |
| 312.55              | 0.63                 | 0.65               | 313.08              | 1.06                 | 4.23               |                     |                      |                    |
| 312.56              | 0.64                 | 0.69               | 313.09              | 1.06                 | 4.34               |                     |                      |                    |
| 312.57              | 0.65                 | 0.72               | 313.10              | 1.07                 | 4.44               |                     |                      |                    |
| 312.58              | 0.66                 | 0.76               | 313.11              | 1.08                 | 4.55               |                     |                      |                    |
| 312.59              | 0.67                 | 0.80               | 313.12              | 1.08                 | 4.66               |                     |                      |                    |
| 312.60              | 0.68                 | 0.84               | 313.13              | 1.09                 | 4.77               |                     |                      |                    |
| 312.61              | 0.69                 | 0.88               | 313.14              | 1.10                 | 4.88               |                     |                      |                    |
| 312.62              | 0.70                 | 0.93               | 313.15              | 1.10                 | 4.99               |                     |                      |                    |
| 312.63              | 0.71                 | 0.97               | 313.16              | 1.11                 | 5.11               |                     |                      |                    |
| 312.64              | 0.72                 | 1.02               | 313.17              | 1.12                 | 5.22               |                     |                      |                    |
| 312.65              | 0.73                 | 1.06               | 313.18              | 1.12                 | 5.34               |                     |                      |                    |
| 312.66              | 0.74                 | 1.11               | 313.19              | 1.13                 | 5.46               |                     |                      |                    |
| 312.67              | 0.74                 | 1.16               | 313.20              | 1.13                 | 5.58               |                     |                      |                    |
| 312.68              | 0.75                 | 1.21               | 313.21              | 1.14                 | 5.71               |                     |                      |                    |
| 312.69              | 0.76                 | 1.26               | 313.22              | 1.15                 | 5.83               |                     |                      |                    |
| 312.70              | 0.77                 | 1.31               | 313.23              | 1.15                 | 5.95               |                     |                      |                    |
| 312.71              | 0.78                 | 1.36               | 313.24              | 1.16                 | 6.08               |                     |                      |                    |
| 312.72              | 0.79                 | 1.42               | 313.25              | 1.17                 | 6.21               |                     |                      |                    |
| 312.73              | 0.80                 | 1.47               | 313.26              | 1.17                 | 6.34               |                     |                      |                    |

**Stage-Area-Storage for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.21              | 0.0                 | 0                       | 313.27              | 5.5                 | 571                     |
| 312.23              | 0.0                 | 4                       | 313.29              | 5.7                 | 589                     |
| 312.25              | 0.1                 | 9                       | 313.31              | 5.8                 | 606                     |
| 312.27              | 0.1                 | 14                      | 313.33              | 6.0                 | 624                     |
| 312.29              | 0.2                 | 19                      | 313.35              | 6.2                 | 643                     |
| 312.31              | 0.2                 | 24                      | 313.37              | 6.4                 | 661                     |
| 312.33              | 0.3                 | 29                      | 313.39              | 6.5                 | 680                     |
| 312.35              | 0.3                 | 35                      | 313.41              | <b>6.7</b>          | <b>699</b>              |
| 312.37              | 0.4                 | 41                      |                     |                     |                         |
| 312.39              | 0.5                 | 48                      |                     |                     |                         |
| 312.41              | 0.5                 | 54                      |                     |                     |                         |
| 312.43              | 0.6                 | 61                      |                     |                     |                         |
| 312.45              | 0.7                 | 68                      |                     |                     |                         |
| 312.47              | 0.7                 | 75                      |                     |                     |                         |
| 312.49              | 0.8                 | 83                      |                     |                     |                         |
| 312.51              | 0.9                 | 90                      |                     |                     |                         |
| 312.53              | 0.9                 | 99                      |                     |                     |                         |
| 312.55              | 1.0                 | 107                     |                     |                     |                         |
| 312.57              | 1.1                 | 115                     |                     |                     |                         |
| 312.59              | 1.2                 | 124                     |                     |                     |                         |
| 312.61              | 1.3                 | 133                     |                     |                     |                         |
| 312.63              | 1.4                 | 142                     |                     |                     |                         |
| 312.65              | 1.5                 | 152                     |                     |                     |                         |
| 312.67              | 1.6                 | 162                     |                     |                     |                         |
| 312.69              | 1.7                 | 172                     |                     |                     |                         |
| 312.71              | 1.8                 | 182                     |                     |                     |                         |
| 312.73              | 1.9                 | 193                     |                     |                     |                         |
| 312.75              | 2.0                 | 203                     |                     |                     |                         |
| 312.77              | 2.1                 | 214                     |                     |                     |                         |
| 312.79              | 2.2                 | 226                     |                     |                     |                         |
| 312.81              | 2.3                 | 237                     |                     |                     |                         |
| 312.83              | 2.4                 | 249                     |                     |                     |                         |
| 312.85              | 2.5                 | 261                     |                     |                     |                         |
| 312.87              | 2.6                 | 273                     |                     |                     |                         |
| 312.89              | 2.7                 | 286                     |                     |                     |                         |
| 312.91              | 2.9                 | 298                     |                     |                     |                         |
| 312.93              | 3.0                 | 312                     |                     |                     |                         |
| 312.95              | 3.1                 | 325                     |                     |                     |                         |
| 312.97              | 3.3                 | 338                     |                     |                     |                         |
| 312.99              | 3.4                 | 352                     |                     |                     |                         |
| 313.01              | 3.5                 | 366                     |                     |                     |                         |
| 313.03              | 3.7                 | 380                     |                     |                     |                         |
| 313.05              | 3.8                 | 395                     |                     |                     |                         |
| 313.07              | 3.9                 | 410                     |                     |                     |                         |
| 313.09              | 4.1                 | 425                     |                     |                     |                         |
| 313.11              | 4.2                 | 440                     |                     |                     |                         |
| 313.13              | 4.4                 | 455                     |                     |                     |                         |
| 313.15              | 4.5                 | 471                     |                     |                     |                         |
| 313.17              | 4.7                 | 487                     |                     |                     |                         |
| 313.19              | 4.8                 | 503                     |                     |                     |                         |
| 313.21              | 5.0                 | 520                     |                     |                     |                         |
| 313.23              | 5.2                 | 537                     |                     |                     |                         |
| 313.25              | 5.3                 | 554                     |                     |                     |                         |

### Summary for Reach 4R: Proposed 10" Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

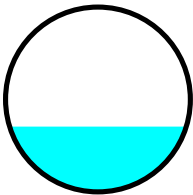
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.05' @ 12.05 hrs

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 2.05" for 10-yr event  
Inflow = 0.76 cfs @ 12.02 hrs, Volume= 0.041 af  
Outflow = 0.76 cfs @ 12.02 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.1 min  
Routed to Reach 3R : Proposed RRv Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 4.40 fps, Min. Travel Time= 0.1 min  
Avg. Velocity= 1.35 fps, Avg. Travel Time= 0.4 min

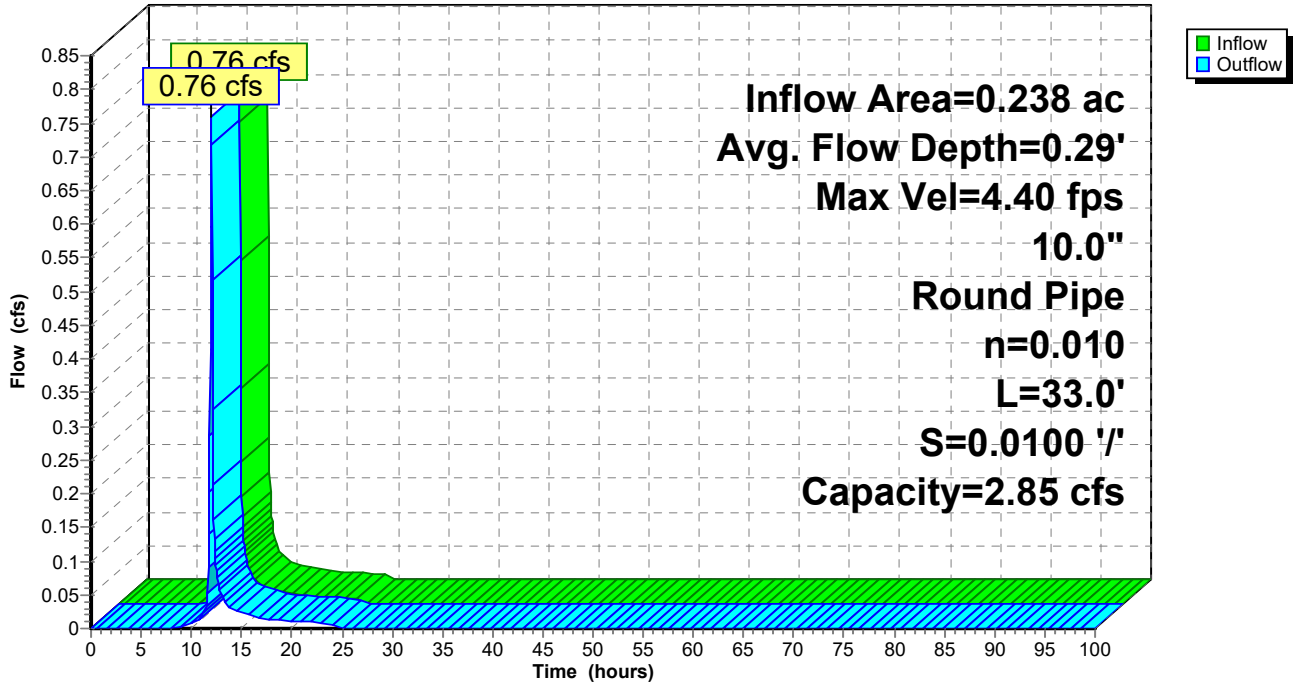
Peak Storage= 6 cf @ 12.02 hrs  
Average Depth at Peak Storage= 0.29' , Surface Width= 0.80'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.85 cfs

10.0" Round Pipe  
n= 0.010 PVC, smooth interior  
Length= 33.0' Slope= 0.0100 '/'  
Inlet Invert= 312.54', Outlet Invert= 312.21'



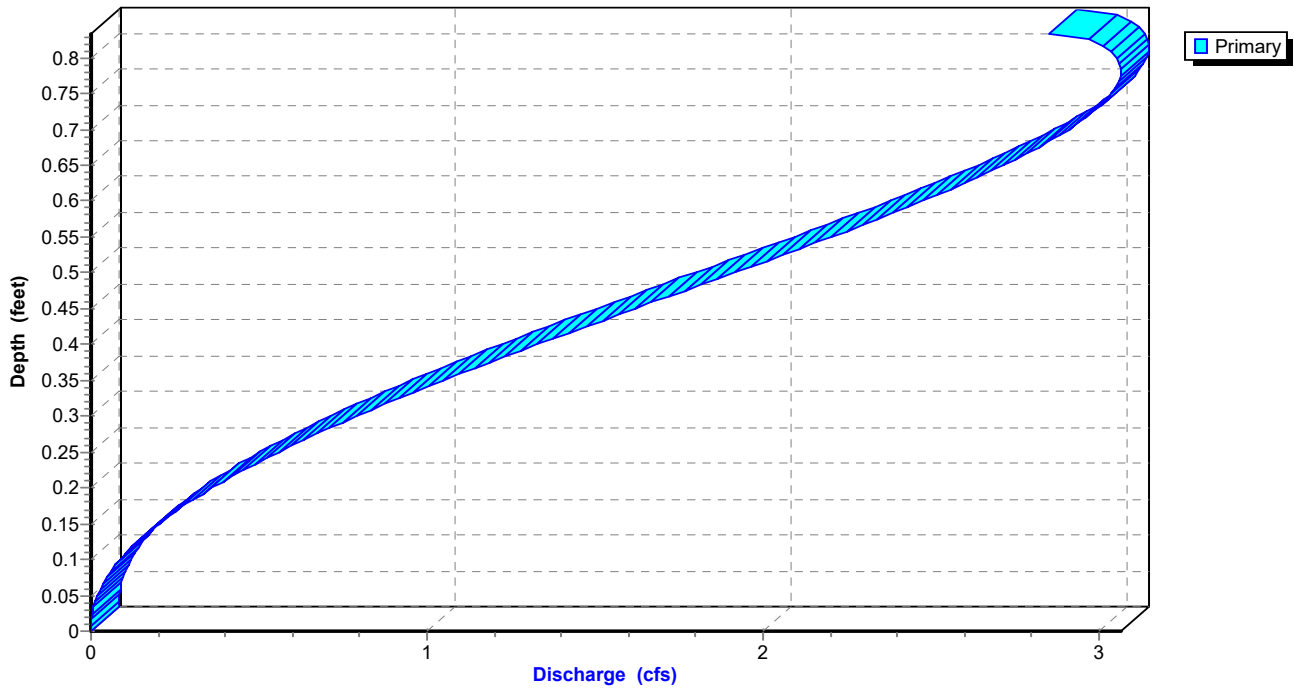
Reach 4R: Proposed 10" Culvert

Hydrograph

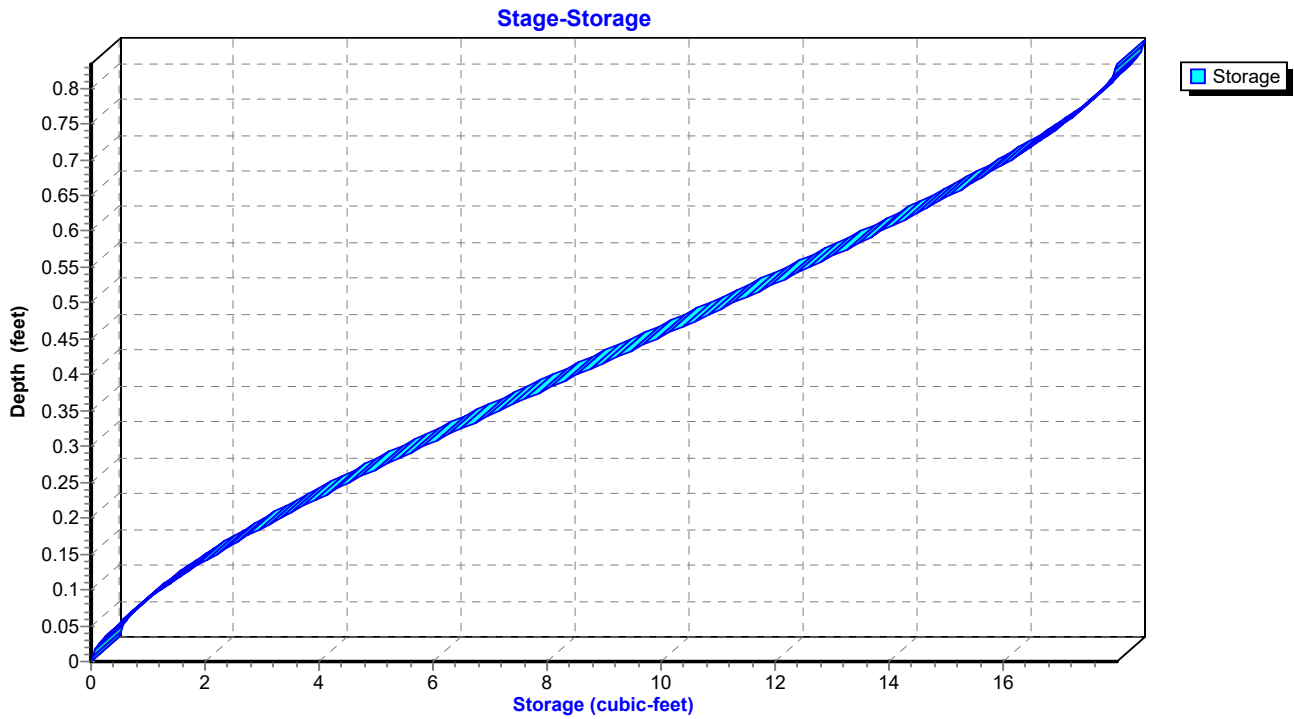


Reach 4R: Proposed 10" Culvert

Stage-Discharge



### Reach 4R: Proposed 10" Culvert



**Hydrograph for Reach 4R: Proposed 10" Culvert**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 7.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>0</b>             | <b>312.57</b>    | <b>0.01</b>   |
| 12.50        | <b>0.09</b>  | <b>1</b>             | <b>312.64</b>    | <b>0.09</b>   |
| 15.00        | 0.02         | 0                    | 312.59           | 0.02          |
| 17.50        | 0.01         | 0                    | 312.58           | 0.01          |
| 20.00        | 0.01         | 0                    | 312.58           | 0.01          |
| 22.50        | 0.01         | 0                    | 312.57           | 0.01          |
| 25.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.54           | 0.00          |



**Stage-Discharge for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.54              | 0.00                 | 0.00               | 313.07              | 5.70                 | 2.09               |
| 312.55              | 0.52                 | 0.00               | 313.08              | 5.74                 | 2.14               |
| 312.56              | 0.83                 | 0.00               | 313.09              | 5.76                 | 2.20               |
| 312.57              | 1.08                 | 0.01               | 313.10              | 5.79                 | 2.26               |
| 312.58              | 1.31                 | 0.01               | 313.11              | 5.82                 | 2.31               |
| 312.59              | 1.51                 | 0.02               | 313.12              | 5.84                 | 2.37               |
| 312.60              | 1.70                 | 0.03               | 313.13              | 5.86                 | 2.42               |
| 312.61              | 1.87                 | 0.04               | 313.14              | 5.88                 | 2.47               |
| 312.62              | 2.04                 | 0.05               | 313.15              | 5.90                 | 2.52               |
| 312.63              | 2.20                 | 0.07               | 313.16              | 5.91                 | 2.57               |
| 312.64              | 2.35                 | 0.09               | 313.17              | 5.93                 | 2.62               |
| 312.65              | 2.49                 | 0.11               | 313.18              | 5.94                 | 2.67               |
| 312.66              | 2.63                 | 0.13               | 313.19              | 5.94                 | 2.71               |
| 312.67              | 2.76                 | 0.15               | 313.20              | 5.95                 | 2.76               |
| 312.68              | 2.89                 | 0.17               | 313.21              | 5.95                 | 2.80               |
| 312.69              | 3.02                 | 0.20               | 313.22              | <b>5.95</b>          | 2.84               |
| 312.70              | 3.13                 | 0.23               | 313.23              | 5.95                 | 2.87               |
| 312.71              | 3.25                 | 0.26               | 313.24              | 5.95                 | 2.91               |
| 312.72              | 3.36                 | 0.29               | 313.25              | 5.94                 | 2.94               |
| 312.73              | 3.47                 | 0.32               | 313.26              | 5.93                 | 2.97               |
| 312.74              | 3.57                 | 0.36               | 313.27              | 5.91                 | 2.99               |
| 312.75              | 3.68                 | 0.40               | 313.28              | 5.89                 | 3.02               |
| 312.76              | 3.77                 | 0.43               | 313.29              | 5.87                 | 3.04               |
| 312.77              | 3.87                 | 0.47               | 313.30              | 5.84                 | 3.05               |
| 312.78              | 3.96                 | 0.52               | 313.31              | 5.81                 | 3.06               |
| 312.79              | 4.05                 | 0.56               | 313.32              | 5.77                 | <b>3.06</b>        |
| 312.80              | 4.14                 | 0.60               | 313.33              | 5.73                 | 3.06               |
| 312.81              | 4.23                 | 0.65               | 313.34              | 5.67                 | 3.05               |
| 312.82              | 4.31                 | 0.69               | 313.35              | 5.60                 | 3.03               |
| 312.83              | 4.39                 | 0.74               | 313.36              | 5.51                 | 2.99               |
| 312.84              | 4.47                 | 0.79               | 313.37              | 5.31                 | 2.90               |
| 312.85              | 4.54                 | 0.84               |                     |                      |                    |
| 312.86              | 4.62                 | 0.89               |                     |                      |                    |
| 312.87              | 4.69                 | 0.94               |                     |                      |                    |
| 312.88              | 4.76                 | 1.00               |                     |                      |                    |
| 312.89              | 4.82                 | 1.05               |                     |                      |                    |
| 312.90              | 4.89                 | 1.10               |                     |                      |                    |
| 312.91              | 4.95                 | 1.16               |                     |                      |                    |
| 312.92              | 5.01                 | 1.21               |                     |                      |                    |
| 312.93              | 5.07                 | 1.27               |                     |                      |                    |
| 312.94              | 5.13                 | 1.33               |                     |                      |                    |
| 312.95              | 5.19                 | 1.39               |                     |                      |                    |
| 312.96              | 5.24                 | 1.44               |                     |                      |                    |
| 312.97              | 5.29                 | 1.50               |                     |                      |                    |
| 312.98              | 5.34                 | 1.56               |                     |                      |                    |
| 312.99              | 5.39                 | 1.62               |                     |                      |                    |
| 313.00              | 5.43                 | 1.68               |                     |                      |                    |
| 313.01              | 5.48                 | 1.74               |                     |                      |                    |
| 313.02              | 5.52                 | 1.80               |                     |                      |                    |
| 313.03              | 5.56                 | 1.85               |                     |                      |                    |
| 313.04              | 5.60                 | 1.91               |                     |                      |                    |
| 313.05              | 5.64                 | 1.97               |                     |                      |                    |
| 313.06              | 5.67                 | 2.03               |                     |                      |                    |

**Stage-Area-Storage for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.54              | 0.0                 | 0                       | 313.07              | 0.4                 | 12                      |
| 312.55              | 0.0                 | 0                       | 313.08              | 0.4                 | 12                      |
| 312.56              | 0.0                 | 0                       | 313.09              | 0.4                 | 13                      |
| 312.57              | 0.0                 | 0                       | 313.10              | 0.4                 | 13                      |
| 312.58              | 0.0                 | 0                       | 313.11              | 0.4                 | 13                      |
| 312.59              | 0.0                 | 0                       | 313.12              | 0.4                 | 13                      |
| 312.60              | 0.0                 | 1                       | 313.13              | 0.4                 | 14                      |
| 312.61              | 0.0                 | 1                       | 313.14              | 0.4                 | 14                      |
| 312.62              | 0.0                 | 1                       | 313.15              | 0.4                 | 14                      |
| 312.63              | 0.0                 | 1                       | 313.16              | 0.4                 | 14                      |
| 312.64              | 0.0                 | 1                       | 313.17              | 0.4                 | 15                      |
| 312.65              | 0.0                 | 1                       | 313.18              | 0.4                 | 15                      |
| 312.66              | 0.0                 | 2                       | 313.19              | 0.5                 | 15                      |
| 312.67              | 0.1                 | 2                       | 313.20              | 0.5                 | 15                      |
| 312.68              | 0.1                 | 2                       | 313.21              | 0.5                 | 16                      |
| 312.69              | 0.1                 | 2                       | 313.22              | 0.5                 | 16                      |
| 312.70              | 0.1                 | 2                       | 313.23              | 0.5                 | 16                      |
| 312.71              | 0.1                 | 3                       | 313.24              | 0.5                 | 16                      |
| 312.72              | 0.1                 | 3                       | 313.25              | 0.5                 | 16                      |
| 312.73              | 0.1                 | 3                       | 313.26              | 0.5                 | 17                      |
| 312.74              | 0.1                 | 3                       | 313.27              | 0.5                 | 17                      |
| 312.75              | 0.1                 | 4                       | 313.28              | 0.5                 | 17                      |
| 312.76              | 0.1                 | 4                       | 313.29              | 0.5                 | 17                      |
| 312.77              | 0.1                 | 4                       | 313.30              | 0.5                 | 17                      |
| 312.78              | 0.1                 | 4                       | 313.31              | 0.5                 | 17                      |
| 312.79              | 0.1                 | 5                       | 313.32              | 0.5                 | 18                      |
| 312.80              | 0.1                 | 5                       | 313.33              | 0.5                 | 18                      |
| 312.81              | 0.2                 | 5                       | 313.34              | 0.5                 | 18                      |
| 312.82              | 0.2                 | 5                       | 313.35              | 0.5                 | 18                      |
| 312.83              | 0.2                 | 6                       | 313.36              | 0.5                 | 18                      |
| 312.84              | 0.2                 | 6                       | 313.37              | <b>0.5</b>          | <b>18</b>               |
| 312.85              | 0.2                 | 6                       |                     |                     |                         |
| 312.86              | 0.2                 | 6                       |                     |                     |                         |
| 312.87              | 0.2                 | 7                       |                     |                     |                         |
| 312.88              | 0.2                 | 7                       |                     |                     |                         |
| 312.89              | 0.2                 | 7                       |                     |                     |                         |
| 312.90              | 0.2                 | 7                       |                     |                     |                         |
| 312.91              | 0.2                 | 8                       |                     |                     |                         |
| 312.92              | 0.2                 | 8                       |                     |                     |                         |
| 312.93              | 0.3                 | 8                       |                     |                     |                         |
| 312.94              | 0.3                 | 9                       |                     |                     |                         |
| 312.95              | 0.3                 | 9                       |                     |                     |                         |
| 312.96              | 0.3                 | 9                       |                     |                     |                         |
| 312.97              | 0.3                 | 9                       |                     |                     |                         |
| 312.98              | 0.3                 | 10                      |                     |                     |                         |
| 312.99              | 0.3                 | 10                      |                     |                     |                         |
| 313.00              | 0.3                 | 10                      |                     |                     |                         |
| 313.01              | 0.3                 | 10                      |                     |                     |                         |
| 313.02              | 0.3                 | 11                      |                     |                     |                         |
| 313.03              | 0.3                 | 11                      |                     |                     |                         |
| 313.04              | 0.3                 | 11                      |                     |                     |                         |
| 313.05              | 0.3                 | 12                      |                     |                     |                         |
| 313.06              | 0.4                 | 12                      |                     |                     |                         |

**Summary for Reach 5R: Proposed RRv Swale**

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 2.05" for 10-yr event  
 Inflow = 0.80 cfs @ 11.99 hrs, Volume= 0.041 af  
 Outflow = 0.76 cfs @ 12.02 hrs, Volume= 0.041 af, Atten= 5%, Lag= 1.3 min  
 Routed to Reach 4R : Proposed 10" Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.11 fps, Min. Travel Time= 2.0 min  
 Avg. Velocity = 0.28 fps, Avg. Travel Time= 8.1 min

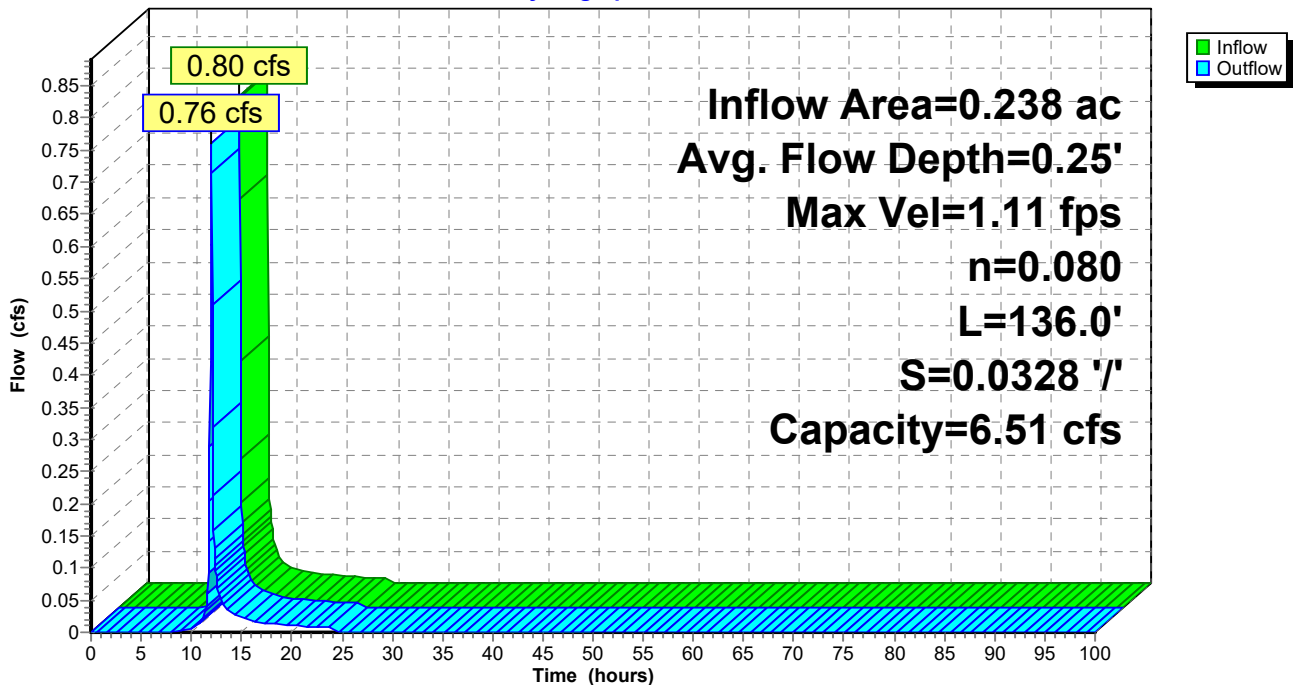
Peak Storage= 93 cf @ 12.02 hrs  
 Average Depth at Peak Storage= 0.25' , Surface Width= 3.49'  
 Bank-Full Depth= 0.75' Flow Area= 3.2 sf, Capacity= 6.51 cfs

2.00' x 0.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/' Top Width= 6.50'  
 Length= 136.0' Slope= 0.0328 '/'  
 Inlet Invert= 317.00', Outlet Invert= 312.54'

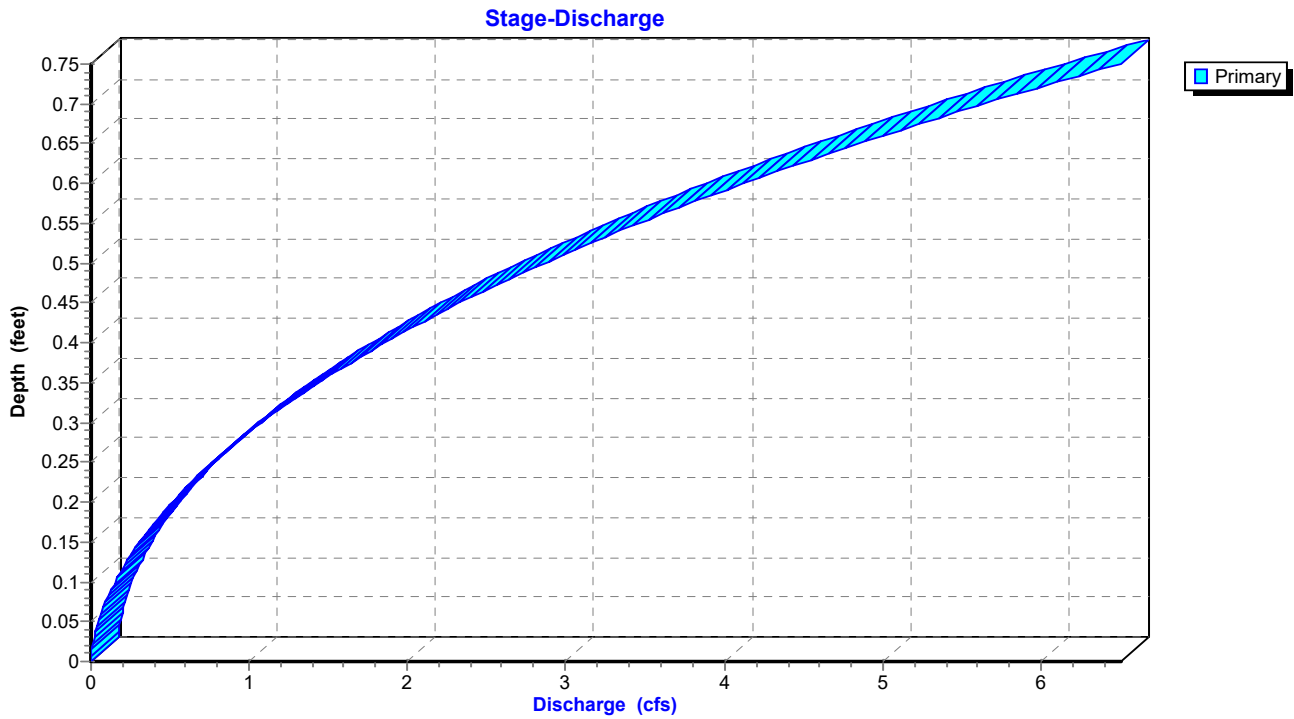


**Reach 5R: Proposed RRv Swale**

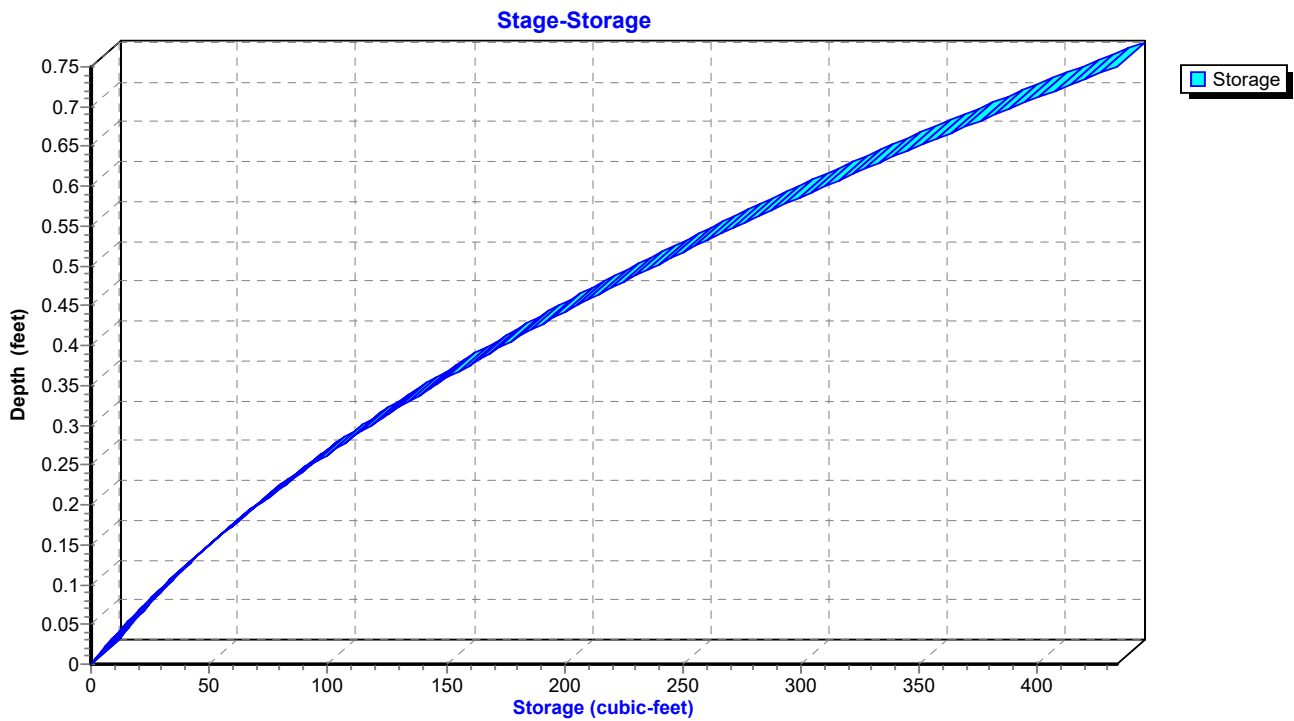
Hydrograph



**Reach 5R: Proposed RRv Swale**



**Reach 5R: Proposed RRv Swale**



**Hydrograph for Reach 5R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>4</b>             | <b>317.01</b>    | <b>0.01</b>   |
| 12.50        | <b>0.08</b>  | <b>22</b>            | <b>317.07</b>    | <b>0.09</b>   |
| 15.00        | 0.02         | 9                    | 317.03           | 0.02          |
| 17.50        | 0.01         | 7                    | 317.02           | 0.01          |
| 20.00        | 0.01         | 6                    | 317.02           | 0.01          |
| 22.50        | 0.01         | 5                    | 317.02           | 0.01          |
| 25.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 317.00           | 0.00          |

**Stage-Discharge for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 317.00              | 0.00                 | 0.00               | 317.53              | 1.69                 | 3.21               |
| 317.01              | 0.15                 | 0.00               | 317.54              | 1.71                 | 3.33               |
| 317.02              | 0.24                 | 0.01               | 317.55              | 1.72                 | 3.46               |
| 317.03              | 0.31                 | 0.02               | 317.56              | 1.74                 | 3.58               |
| 317.04              | 0.38                 | 0.03               | 317.57              | 1.76                 | 3.71               |
| 317.05              | 0.43                 | 0.05               | 317.58              | 1.77                 | 3.85               |
| 317.06              | 0.49                 | 0.06               | 317.59              | 1.79                 | 3.98               |
| 317.07              | 0.53                 | 0.08               | 317.60              | 1.81                 | 4.12               |
| 317.08              | 0.58                 | 0.10               | 317.61              | 1.82                 | 4.26               |
| 317.09              | 0.62                 | 0.13               | 317.62              | 1.84                 | 4.40               |
| 317.10              | 0.66                 | 0.15               | 317.63              | 1.85                 | 4.55               |
| 317.11              | 0.70                 | 0.18               | 317.64              | 1.87                 | 4.69               |
| 317.12              | 0.74                 | 0.21               | 317.65              | 1.89                 | 4.84               |
| 317.13              | 0.77                 | 0.24               | 317.66              | 1.90                 | 5.00               |
| 317.14              | 0.81                 | 0.27               | 317.67              | 1.92                 | 5.15               |
| 317.15              | 0.84                 | 0.31               | 317.68              | 1.93                 | 5.31               |
| 317.16              | 0.87                 | 0.35               | 317.69              | 1.95                 | 5.48               |
| 317.17              | 0.90                 | 0.38               | 317.70              | 1.97                 | 5.64               |
| 317.18              | 0.93                 | 0.43               | 317.71              | 1.98                 | 5.81               |
| 317.19              | 0.96                 | 0.47               | 317.72              | 2.00                 | 5.98               |
| 317.20              | 0.99                 | 0.51               | 317.73              | 2.01                 | 6.15               |
| 317.21              | 1.02                 | 0.56               | 317.74              | 2.03                 | 6.33               |
| 317.22              | 1.04                 | 0.61               | 317.75              | <b>2.04</b>          | <b>6.51</b>        |
| 317.23              | 1.07                 | 0.66               |                     |                      |                    |
| 317.24              | 1.09                 | 0.71               |                     |                      |                    |
| 317.25              | 1.12                 | 0.77               |                     |                      |                    |
| 317.26              | 1.14                 | 0.83               |                     |                      |                    |
| 317.27              | 1.17                 | 0.89               |                     |                      |                    |
| 317.28              | 1.19                 | 0.95               |                     |                      |                    |
| 317.29              | 1.21                 | 1.01               |                     |                      |                    |
| 317.30              | 1.24                 | 1.08               |                     |                      |                    |
| 317.31              | 1.26                 | 1.14               |                     |                      |                    |
| 317.32              | 1.28                 | 1.21               |                     |                      |                    |
| 317.33              | 1.30                 | 1.29               |                     |                      |                    |
| 317.34              | 1.33                 | 1.36               |                     |                      |                    |
| 317.35              | 1.35                 | 1.44               |                     |                      |                    |
| 317.36              | 1.37                 | 1.52               |                     |                      |                    |
| 317.37              | 1.39                 | 1.60               |                     |                      |                    |
| 317.38              | 1.41                 | 1.68               |                     |                      |                    |
| 317.39              | 1.43                 | 1.77               |                     |                      |                    |
| 317.40              | 1.45                 | 1.85               |                     |                      |                    |
| 317.41              | 1.47                 | 1.94               |                     |                      |                    |
| 317.42              | 1.49                 | 2.04               |                     |                      |                    |
| 317.43              | 1.51                 | 2.13               |                     |                      |                    |
| 317.44              | 1.53                 | 2.23               |                     |                      |                    |
| 317.45              | 1.54                 | 2.33               |                     |                      |                    |
| 317.46              | 1.56                 | 2.43               |                     |                      |                    |
| 317.47              | 1.58                 | 2.53               |                     |                      |                    |
| 317.48              | 1.60                 | 2.64               |                     |                      |                    |
| 317.49              | 1.62                 | 2.75               |                     |                      |                    |
| 317.50              | 1.64                 | 2.86               |                     |                      |                    |
| 317.51              | 1.65                 | 2.98               |                     |                      |                    |
| 317.52              | 1.67                 | 3.09               |                     |                      |                    |

**Stage-Area-Storage for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 317.00              | 0.0                 | 0                       | 317.53              | 1.9                 | 259                     |
| 317.01              | 0.0                 | 3                       | 317.54              | 2.0                 | 266                     |
| 317.02              | 0.0                 | 6                       | 317.55              | 2.0                 | 273                     |
| 317.03              | 0.1                 | 9                       | 317.56              | 2.1                 | 280                     |
| 317.04              | 0.1                 | 12                      | 317.57              | 2.1                 | 288                     |
| 317.05              | 0.1                 | 15                      | 317.58              | 2.2                 | 295                     |
| 317.06              | 0.1                 | 18                      | 317.59              | 2.2                 | 303                     |
| 317.07              | 0.2                 | 21                      | 317.60              | 2.3                 | 310                     |
| 317.08              | 0.2                 | 24                      | 317.61              | 2.3                 | 318                     |
| 317.09              | 0.2                 | 28                      | 317.62              | 2.4                 | 325                     |
| 317.10              | 0.2                 | 31                      | 317.63              | 2.5                 | 333                     |
| 317.11              | 0.3                 | 35                      | 317.64              | 2.5                 | 341                     |
| 317.12              | 0.3                 | 39                      | 317.65              | 2.6                 | 349                     |
| 317.13              | 0.3                 | 42                      | 317.66              | 2.6                 | 357                     |
| 317.14              | 0.3                 | 46                      | 317.67              | 2.7                 | 365                     |
| 317.15              | 0.4                 | 50                      | 317.68              | 2.7                 | 374                     |
| 317.16              | 0.4                 | 54                      | 317.69              | 2.8                 | 382                     |
| 317.17              | 0.4                 | 58                      | 317.70              | 2.9                 | 390                     |
| 317.18              | 0.5                 | 62                      | 317.71              | 2.9                 | 399                     |
| 317.19              | 0.5                 | 66                      | 317.72              | 3.0                 | 407                     |
| 317.20              | 0.5                 | 71                      | 317.73              | 3.1                 | 416                     |
| 317.21              | 0.6                 | 75                      | 317.74              | 3.1                 | 425                     |
| 317.22              | 0.6                 | 80                      | 317.75              | <b>3.2</b>          | <b>434</b>              |
| 317.23              | 0.6                 | 84                      |                     |                     |                         |
| 317.24              | 0.7                 | 89                      |                     |                     |                         |
| 317.25              | 0.7                 | 94                      |                     |                     |                         |
| 317.26              | 0.7                 | 98                      |                     |                     |                         |
| 317.27              | 0.8                 | 103                     |                     |                     |                         |
| 317.28              | 0.8                 | 108                     |                     |                     |                         |
| 317.29              | 0.8                 | 113                     |                     |                     |                         |
| 317.30              | 0.9                 | 118                     |                     |                     |                         |
| 317.31              | 0.9                 | 124                     |                     |                     |                         |
| 317.32              | 0.9                 | 129                     |                     |                     |                         |
| 317.33              | 1.0                 | 134                     |                     |                     |                         |
| 317.34              | 1.0                 | 140                     |                     |                     |                         |
| 317.35              | 1.1                 | 145                     |                     |                     |                         |
| 317.36              | 1.1                 | 151                     |                     |                     |                         |
| 317.37              | 1.2                 | 157                     |                     |                     |                         |
| 317.38              | 1.2                 | 162                     |                     |                     |                         |
| 317.39              | 1.2                 | 168                     |                     |                     |                         |
| 317.40              | 1.3                 | 174                     |                     |                     |                         |
| 317.41              | 1.3                 | 180                     |                     |                     |                         |
| 317.42              | 1.4                 | 186                     |                     |                     |                         |
| 317.43              | 1.4                 | 192                     |                     |                     |                         |
| 317.44              | 1.5                 | 199                     |                     |                     |                         |
| 317.45              | 1.5                 | 205                     |                     |                     |                         |
| 317.46              | 1.6                 | 211                     |                     |                     |                         |
| 317.47              | 1.6                 | 218                     |                     |                     |                         |
| 317.48              | 1.7                 | 225                     |                     |                     |                         |
| 317.49              | 1.7                 | 231                     |                     |                     |                         |
| 317.50              | 1.8                 | 238                     |                     |                     |                         |
| 317.51              | 1.8                 | 245                     |                     |                     |                         |
| 317.52              | 1.9                 | 252                     |                     |                     |                         |

### Summary for Reach 6R: 12" Culvert Pond Discharge

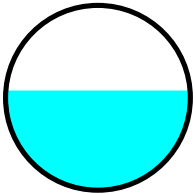
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth > 2.14" for 10-yr event  
Inflow = 1.95 cfs @ 12.18 hrs, Volume= 0.280 af  
Outflow = 1.95 cfs @ 12.18 hrs, Volume= 0.280 af, Atten= 0%, Lag= 0.1 min  
Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 4.52 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.04 fps, Avg. Travel Time= 0.4 min

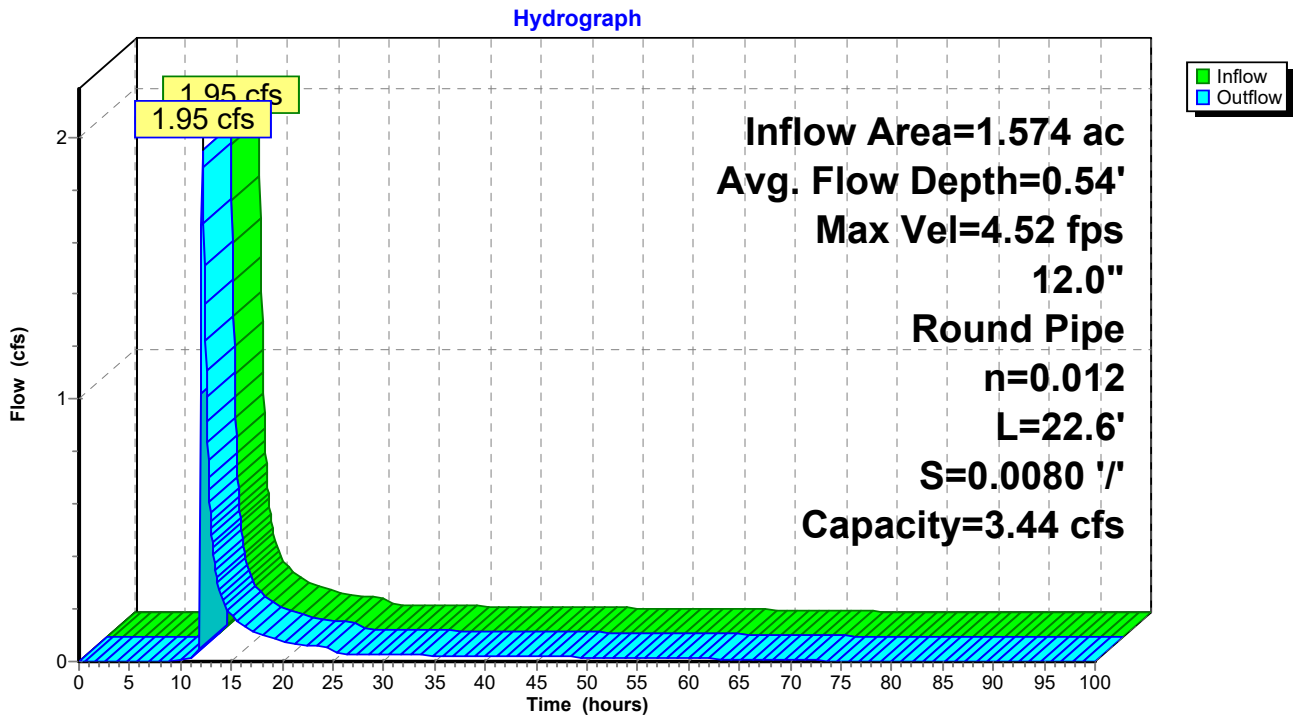
Peak Storage= 10 cf @ 12.18 hrs  
Average Depth at Peak Storage= 0.54' , Surface Width= 1.00'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.44 cfs

12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 22.6' Slope= 0.0080 '/  
Inlet Invert= 309.83', Outlet Invert= 309.65'

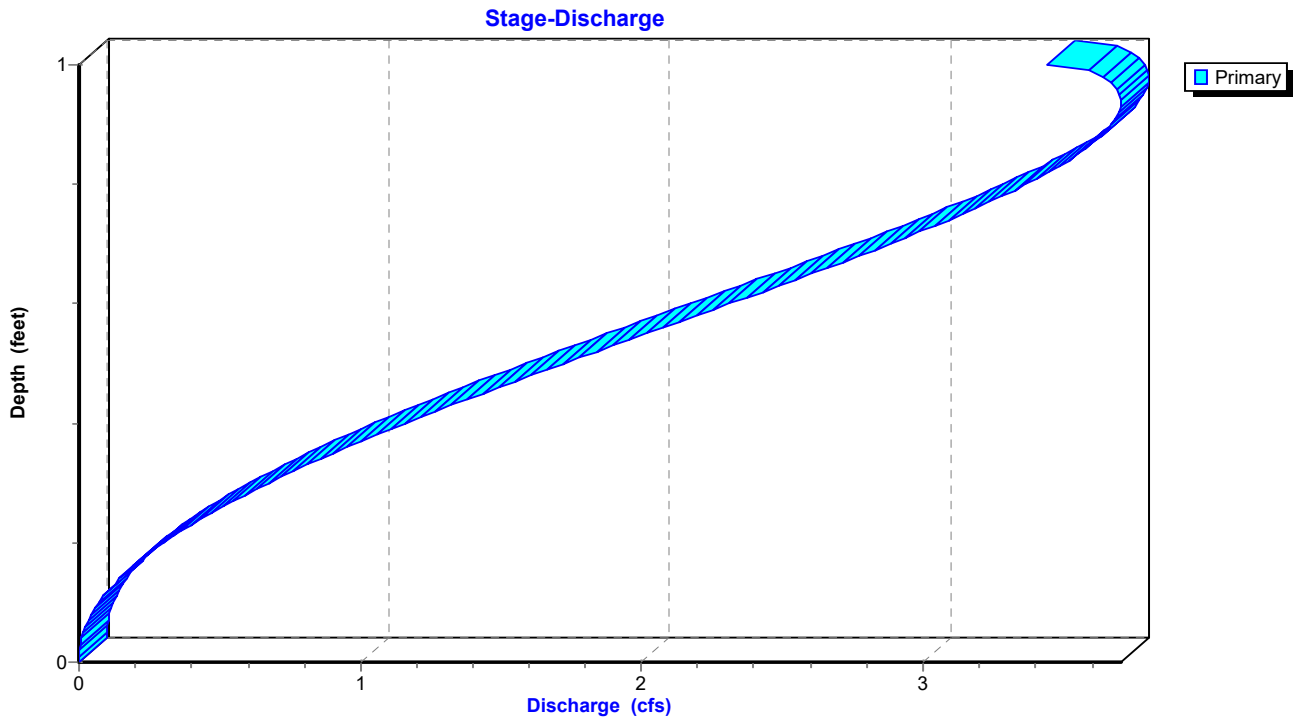




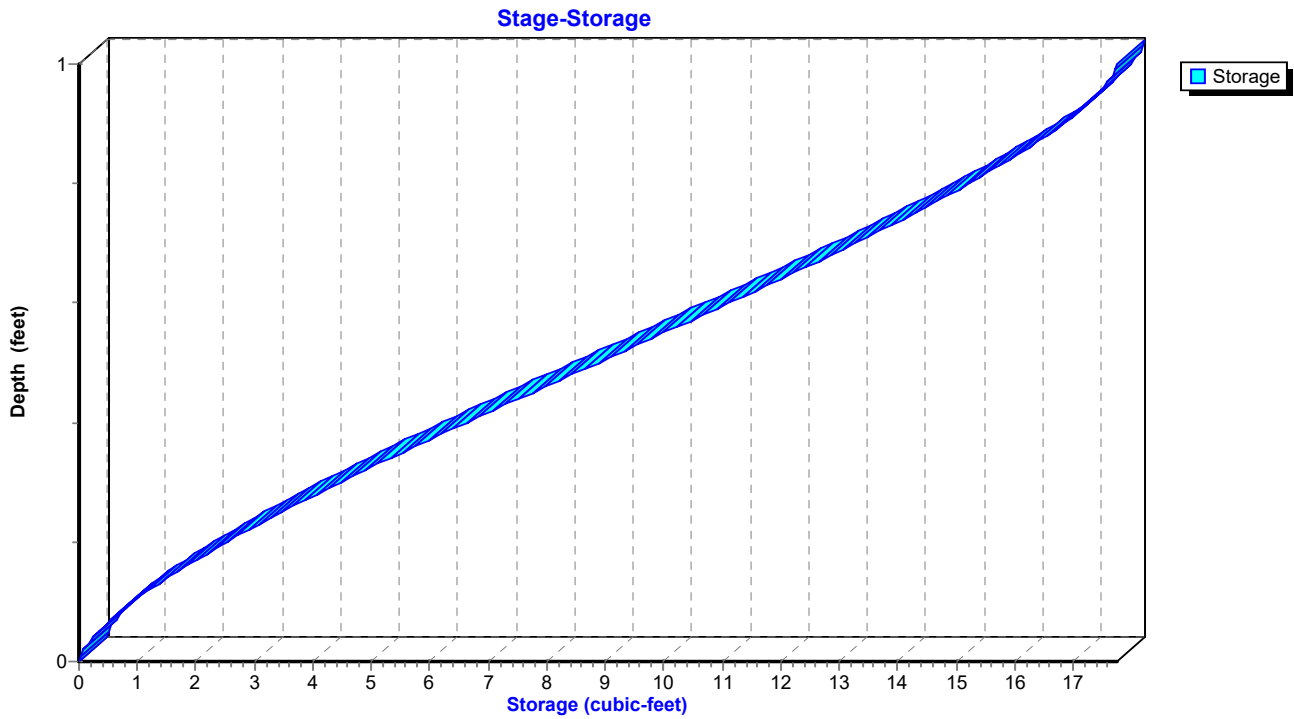
### Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



**Hydrograph for Reach 6R: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 2.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 5.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 7.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>0</b>             | <b>309.86</b>    | <b>0.01</b>   |
| 12.50        | <b>1.11</b>  | <b>6</b>             | <b>310.22</b>    | <b>1.11</b>   |
| 15.00        | 0.17         | 2                    | 309.98           | 0.17          |
| 17.50        | 0.11         | 1                    | 309.95           | 0.11          |
| 20.00        | 0.08         | 1                    | 309.93           | 0.08          |
| 22.50        | 0.06         | 1                    | 309.92           | 0.06          |
| 25.00        | 0.04         | 1                    | 309.90           | 0.04          |
| 27.50        | 0.03         | 0                    | 309.89           | 0.03          |
| 30.00        | 0.03         | 0                    | 309.89           | 0.03          |
| 32.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 35.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 37.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 40.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 42.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 45.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 47.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 50.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 52.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 55.00        | 0.01         | 0                    | 309.88           | 0.01          |
| 57.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 60.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 62.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 65.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 67.50        | 0.01         | 0                    | 309.86           | 0.01          |
| 70.00        | 0.01         | 0                    | 309.86           | 0.01          |
| 72.50        | 0.00         | 0                    | 309.86           | 0.00          |
| 75.00        | 0.00         | 0                    | 309.85           | 0.00          |
| 77.50        | 0.00         | 0                    | 309.85           | 0.00          |
| 80.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 82.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 85.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 87.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 90.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 92.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 95.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 97.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 100.00       | 0.00         | 0                    | 309.83           | 0.00          |

**Stage-Discharge for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 309.83              | 0.00                 | 0.00               | 310.36              | 4.49                 | 1.90               |
| 309.84              | 0.39                 | 0.00               | 310.37              | 4.53                 | 1.96               |
| 309.85              | 0.62                 | 0.00               | 310.38              | 4.56                 | 2.02               |
| 309.86              | 0.81                 | 0.01               | 310.39              | 4.59                 | 2.08               |
| 309.87              | 0.97                 | 0.01               | 310.40              | 4.62                 | 2.14               |
| 309.88              | 1.13                 | 0.02               | 310.41              | 4.65                 | 2.20               |
| 309.89              | 1.27                 | 0.02               | 310.42              | 4.68                 | 2.26               |
| 309.90              | 1.40                 | 0.03               | 310.43              | 4.70                 | 2.31               |
| 309.91              | 1.53                 | 0.04               | 310.44              | 4.73                 | 2.37               |
| 309.92              | 1.65                 | 0.06               | 310.45              | 4.75                 | 2.43               |
| 309.93              | 1.76                 | 0.07               | 310.46              | 4.78                 | 2.49               |
| 309.94              | 1.87                 | 0.09               | 310.47              | 4.80                 | 2.55               |
| 309.95              | 1.97                 | 0.11               | 310.48              | 4.82                 | 2.61               |
| 309.96              | 2.07                 | 0.12               | 310.49              | 4.84                 | 2.66               |
| 309.97              | 2.17                 | 0.15               | 310.50              | 4.86                 | 2.72               |
| 309.98              | 2.27                 | 0.17               | 310.51              | 4.88                 | 2.77               |
| 309.99              | 2.36                 | 0.19               | 310.52              | 4.90                 | 2.83               |
| 310.00              | 2.45                 | 0.22               | 310.53              | 4.91                 | 2.88               |
| 310.01              | 2.53                 | 0.24               | 310.54              | 4.93                 | 2.94               |
| 310.02              | 2.62                 | 0.27               | 310.55              | 4.94                 | 2.99               |
| 310.03              | 2.70                 | 0.30               | 310.56              | 4.95                 | 3.04               |
| 310.04              | 2.78                 | 0.33               | 310.57              | 4.96                 | 3.09               |
| 310.05              | 2.85                 | 0.37               | 310.58              | 4.97                 | 3.14               |
| 310.06              | 2.93                 | 0.40               | 310.59              | 4.98                 | 3.19               |
| 310.07              | 3.00                 | 0.44               | 310.60              | 4.99                 | 3.24               |
| 310.08              | 3.07                 | 0.47               | 310.61              | 4.99                 | 3.28               |
| 310.09              | 3.14                 | 0.51               | 310.62              | 5.00                 | 3.32               |
| 310.10              | 3.21                 | 0.55               | 310.63              | 5.00                 | 3.37               |
| 310.11              | 3.28                 | 0.59               | 310.64              | <b>5.00</b>          | 3.41               |
| 310.12              | 3.34                 | 0.63               | 310.65              | 5.00                 | 3.45               |
| 310.13              | 3.40                 | 0.67               | 310.66              | 5.00                 | 3.48               |
| 310.14              | 3.47                 | 0.72               | 310.67              | 4.99                 | 3.52               |
| 310.15              | 3.53                 | 0.76               | 310.68              | 4.99                 | 3.55               |
| 310.16              | 3.58                 | 0.81               | 310.69              | 4.98                 | 3.58               |
| 310.17              | 3.64                 | 0.86               | 310.70              | 4.97                 | 3.61               |
| 310.18              | 3.70                 | 0.91               | 310.71              | 4.96                 | 3.63               |
| 310.19              | 3.75                 | 0.95               | 310.72              | 4.95                 | 3.65               |
| 310.20              | 3.80                 | 1.01               | 310.73              | 4.93                 | 3.67               |
| 310.21              | 3.86                 | 1.06               | 310.74              | 4.91                 | 3.69               |
| 310.22              | 3.91                 | 1.11               | 310.75              | 4.89                 | 3.70               |
| 310.23              | 3.96                 | 1.16               | 310.76              | 4.87                 | 3.70               |
| 310.24              | 4.00                 | 1.21               | 310.77              | 4.84                 | <b>3.71</b>        |
| 310.25              | 4.05                 | 1.27               | 310.78              | 4.80                 | 3.70               |
| 310.26              | 4.10                 | 1.32               | 310.79              | 4.76                 | 3.69               |
| 310.27              | 4.14                 | 1.38               | 310.80              | 4.72                 | 3.67               |
| 310.28              | 4.19                 | 1.43               | 310.81              | 4.66                 | 3.64               |
| 310.29              | 4.23                 | 1.49               | 310.82              | 4.58                 | 3.59               |
| 310.30              | 4.27                 | 1.55               | 310.83              | 4.39                 | 3.44               |
| 310.31              | 4.31                 | 1.61               |                     |                      |                    |
| 310.32              | 4.35                 | 1.66               |                     |                      |                    |
| 310.33              | 4.39                 | 1.72               |                     |                      |                    |
| 310.34              | 4.42                 | 1.78               |                     |                      |                    |
| 310.35              | 4.46                 | 1.84               |                     |                      |                    |

**Stage-Area-Storage for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 309.83              | 0.0                 | 0                       | 310.36              | 0.4                 | 10                      |
| 309.84              | 0.0                 | 0                       | 310.37              | 0.4                 | 10                      |
| 309.85              | 0.0                 | 0                       | 310.38              | 0.4                 | 10                      |
| 309.86              | 0.0                 | 0                       | 310.39              | 0.5                 | 10                      |
| 309.87              | 0.0                 | 0                       | 310.40              | 0.5                 | 10                      |
| 309.88              | 0.0                 | 0                       | 310.41              | 0.5                 | 11                      |
| 309.89              | 0.0                 | 0                       | 310.42              | 0.5                 | 11                      |
| 309.90              | 0.0                 | 1                       | 310.43              | 0.5                 | 11                      |
| 309.91              | 0.0                 | 1                       | 310.44              | 0.5                 | 11                      |
| 309.92              | 0.0                 | 1                       | 310.45              | 0.5                 | 12                      |
| 309.93              | 0.0                 | 1                       | 310.46              | 0.5                 | 12                      |
| 309.94              | 0.0                 | 1                       | 310.47              | 0.5                 | 12                      |
| 309.95              | 0.1                 | 1                       | 310.48              | 0.5                 | 12                      |
| 309.96              | 0.1                 | 1                       | 310.49              | 0.5                 | 12                      |
| 309.97              | 0.1                 | 2                       | 310.50              | 0.6                 | 13                      |
| 309.98              | 0.1                 | 2                       | 310.51              | 0.6                 | 13                      |
| 309.99              | 0.1                 | 2                       | 310.52              | 0.6                 | 13                      |
| 310.00              | 0.1                 | 2                       | 310.53              | 0.6                 | 13                      |
| 310.01              | 0.1                 | 2                       | 310.54              | 0.6                 | 13                      |
| 310.02              | 0.1                 | 2                       | 310.55              | 0.6                 | 14                      |
| 310.03              | 0.1                 | 3                       | 310.56              | 0.6                 | 14                      |
| 310.04              | 0.1                 | 3                       | 310.57              | 0.6                 | 14                      |
| 310.05              | 0.1                 | 3                       | 310.58              | 0.6                 | 14                      |
| 310.06              | 0.1                 | 3                       | 310.59              | 0.6                 | 14                      |
| 310.07              | 0.1                 | 3                       | 310.60              | 0.6                 | 15                      |
| 310.08              | 0.2                 | 3                       | 310.61              | 0.7                 | 15                      |
| 310.09              | 0.2                 | 4                       | 310.62              | 0.7                 | 15                      |
| 310.10              | 0.2                 | 4                       | 310.63              | 0.7                 | 15                      |
| 310.11              | 0.2                 | 4                       | 310.64              | 0.7                 | 15                      |
| 310.12              | 0.2                 | 4                       | 310.65              | 0.7                 | 16                      |
| 310.13              | 0.2                 | 4                       | 310.66              | 0.7                 | 16                      |
| 310.14              | 0.2                 | 5                       | 310.67              | 0.7                 | 16                      |
| 310.15              | 0.2                 | 5                       | 310.68              | 0.7                 | 16                      |
| 310.16              | 0.2                 | 5                       | 310.69              | 0.7                 | 16                      |
| 310.17              | 0.2                 | 5                       | 310.70              | 0.7                 | 16                      |
| 310.18              | 0.2                 | 6                       | 310.71              | 0.7                 | 17                      |
| 310.19              | 0.3                 | 6                       | 310.72              | 0.7                 | 17                      |
| 310.20              | 0.3                 | 6                       | 310.73              | 0.7                 | 17                      |
| 310.21              | 0.3                 | 6                       | 310.74              | 0.8                 | 17                      |
| 310.22              | 0.3                 | 6                       | 310.75              | 0.8                 | 17                      |
| 310.23              | 0.3                 | 7                       | 310.76              | 0.8                 | 17                      |
| 310.24              | 0.3                 | 7                       | 310.77              | 0.8                 | 17                      |
| 310.25              | 0.3                 | 7                       | 310.78              | 0.8                 | 17                      |
| 310.26              | 0.3                 | 7                       | 310.79              | 0.8                 | 18                      |
| 310.27              | 0.3                 | 8                       | 310.80              | 0.8                 | 18                      |
| 310.28              | 0.3                 | 8                       | 310.81              | 0.8                 | 18                      |
| 310.29              | 0.4                 | 8                       | 310.82              | 0.8                 | 18                      |
| 310.30              | 0.4                 | 8                       | 310.83              | <b>0.8</b>          | <b>18</b>               |
| 310.31              | 0.4                 | 8                       |                     |                     |                         |
| 310.32              | 0.4                 | 9                       |                     |                     |                         |
| 310.33              | 0.4                 | 9                       |                     |                     |                         |
| 310.34              | 0.4                 | 9                       |                     |                     |                         |
| 310.35              | 0.4                 | 9                       |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.182 ac, 9.18% Impervious, Inflow Depth = 0.39" for 10-yr event  
 Inflow = 1.09 cfs @ 12.06 hrs, Volume= 0.102 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 316.25' @ 24.65 hrs Surf.Area= 0.146 ac Storage= 0.295 af (0.102 af above start)

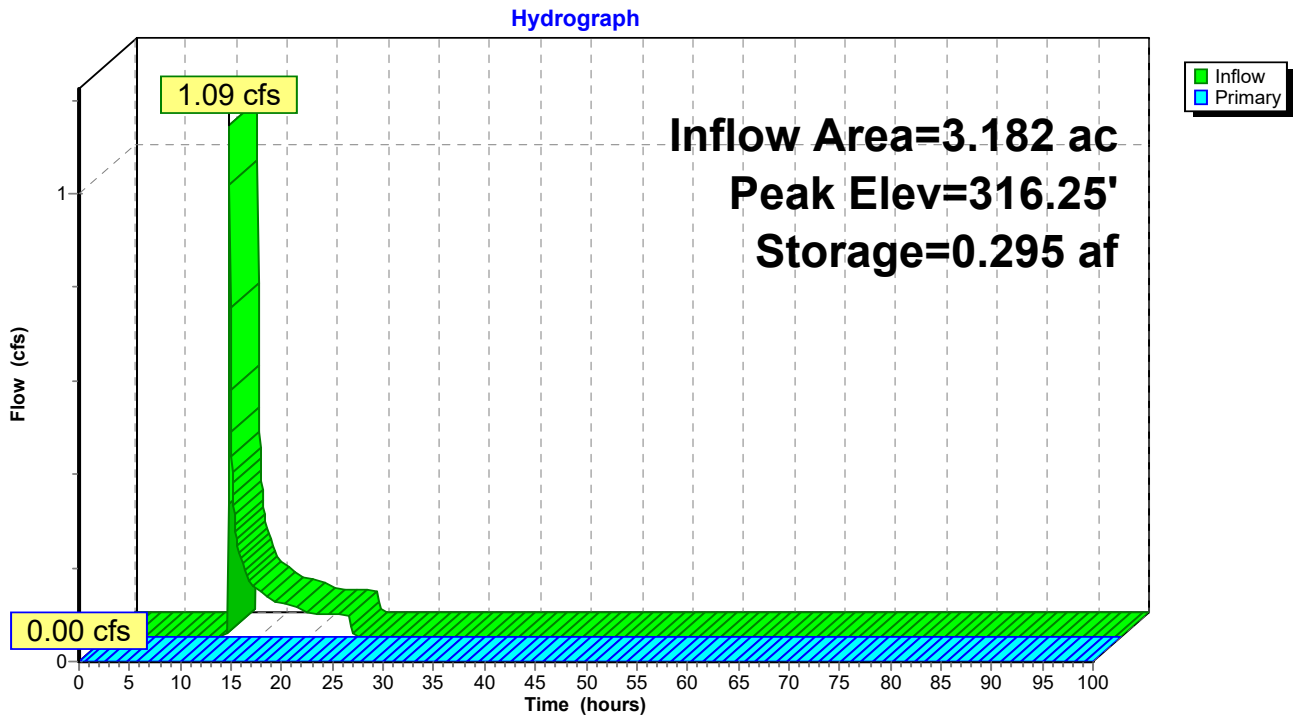
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 313.83'              | 0.443 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 313.83              | 0.088                | 271.6            | 0.000  | 0.000                    | 0.088               |  |
| 314.00              | 0.107                | 290.3            | 0.017  | 0.017                    | 0.107               |  |
| 315.50              | 0.128                | 309.9            | 0.176  | 0.193                    | 0.131               |  |
| 316.00              | 0.139                | 319.8            | 0.067  | 0.259                    | 0.143               |  |
| 316.50              | 0.154                | 348.8            | 0.073  | 0.333                    | 0.179               |  |
| 317.00              | 0.295                | 446.8            | 0.110  | 0.443                    | 0.321               |  |

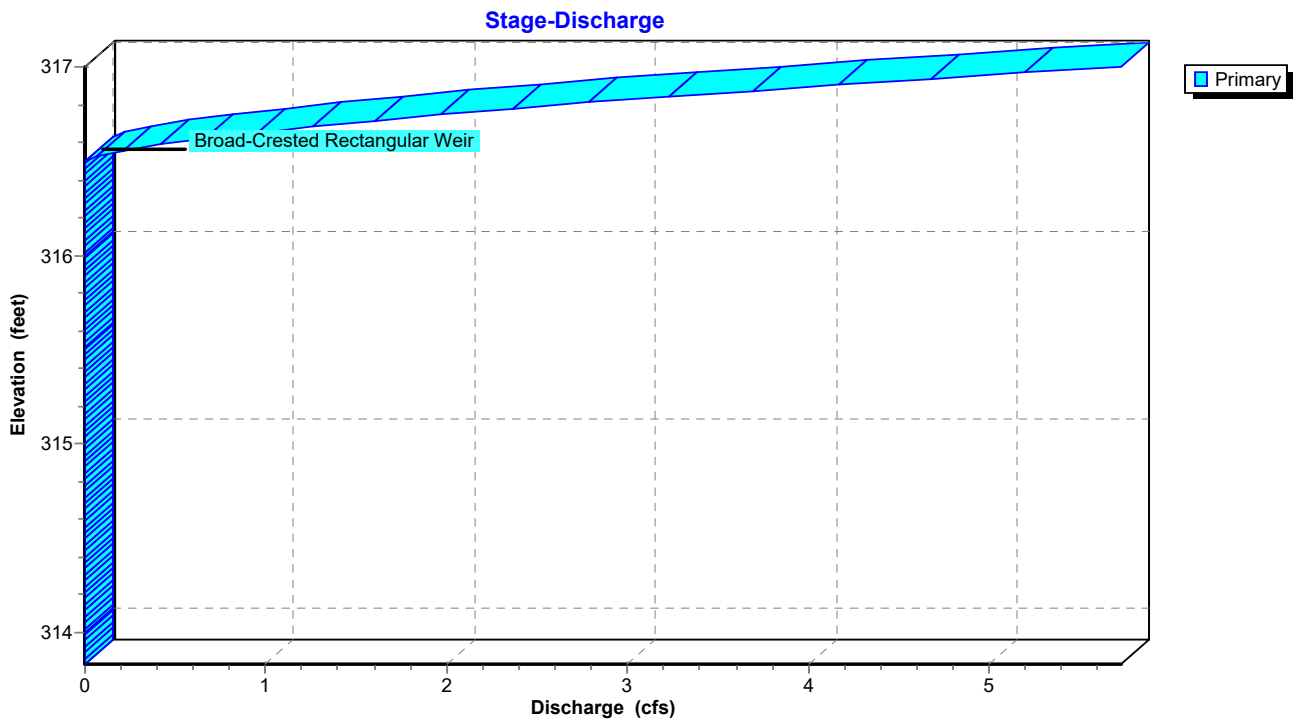
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60             |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=315.50' TW=316.00' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

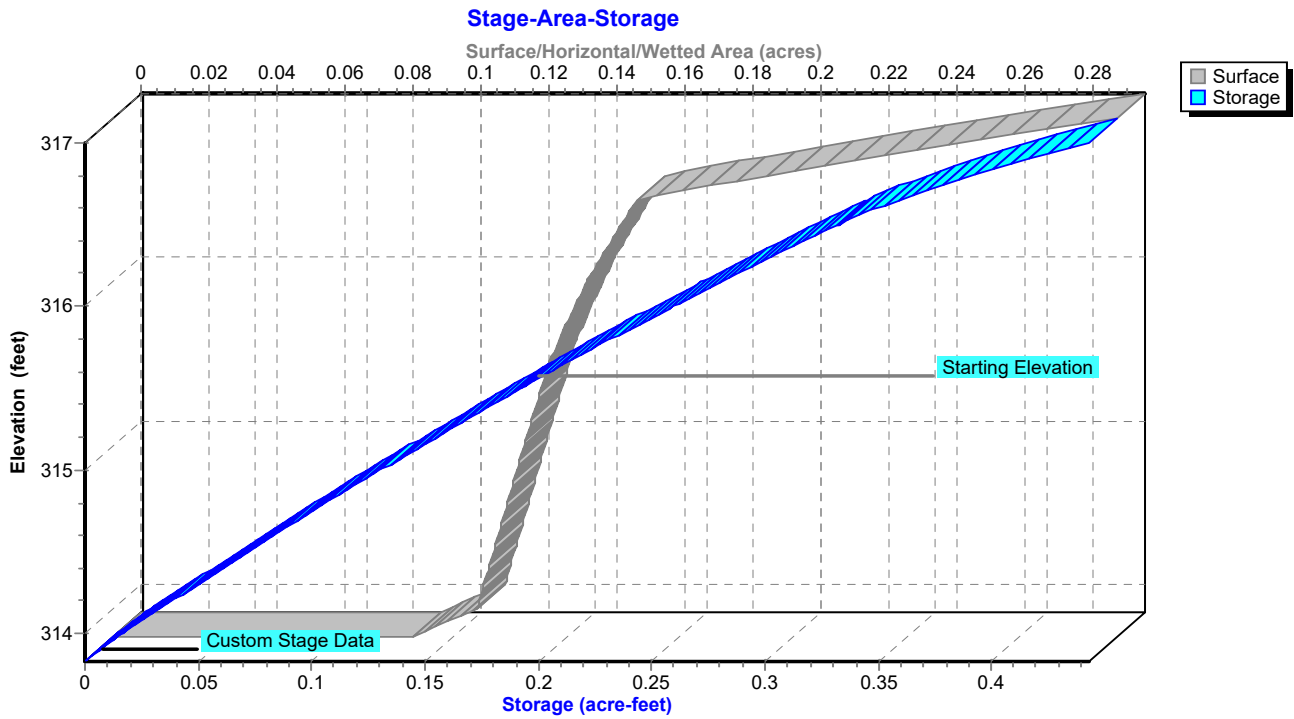
Pond 1ST: Existing Sediment Trap



Pond 1ST: Existing Sediment Trap



### Pond 1ST: Existing Sediment Trap





**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.193               | 315.50           | <b>0.00</b>   |
| 2.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 5.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 7.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.193               | 315.50           | 0.00          |
| 12.50        | <b>0.28</b>  | 0.219               | 315.70           | 0.00          |
| 15.00        | 0.10         | 0.249               | 315.92           | 0.00          |
| 17.50        | 0.07         | 0.266               | 316.05           | 0.00          |
| 20.00        | 0.05         | 0.278               | 316.14           | 0.00          |
| 22.50        | 0.05         | <b>0.289</b>        | <b>316.21</b>    | 0.00          |
| 25.00        | 0.00         | <b>0.295</b>        | <b>316.25</b>    | 0.00          |
| 27.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 30.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 32.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 35.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 37.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 40.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 42.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 45.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 47.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 50.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 52.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 55.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 57.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 60.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 62.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 65.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 67.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 70.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 72.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 75.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 77.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 80.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 82.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 85.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 87.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 90.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 92.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 95.00        | 0.00         | 0.295               | 316.25           | 0.00          |
| 97.50        | 0.00         | 0.295               | 316.25           | 0.00          |
| 100.00       | 0.00         | 0.295               | 316.25           | 0.00          |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

[63] Warning: Exceeded Reach 6R INLET depth by 0.34' @ 99.95 hrs

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth = 0.84" for 10-yr event  
 Inflow = 2.56 cfs @ 12.09 hrs, Volume= 0.376 af  
 Outflow = 0.54 cfs @ 13.15 hrs, Volume= 0.230 af, Atten= 79%, Lag= 63.8 min  
 Primary = 0.54 cfs @ 13.15 hrs, Volume= 0.230 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.24' @ 13.15 hrs Surf.Area= 0.094 ac Storage= 0.164 af (0.153 af above start)

Plug-Flow detention time= 785.1 min calculated for 0.219 af (58% of inflow)  
 Center-of-Mass det. time= 313.4 min ( 1,511.2 - 1,197.7 )

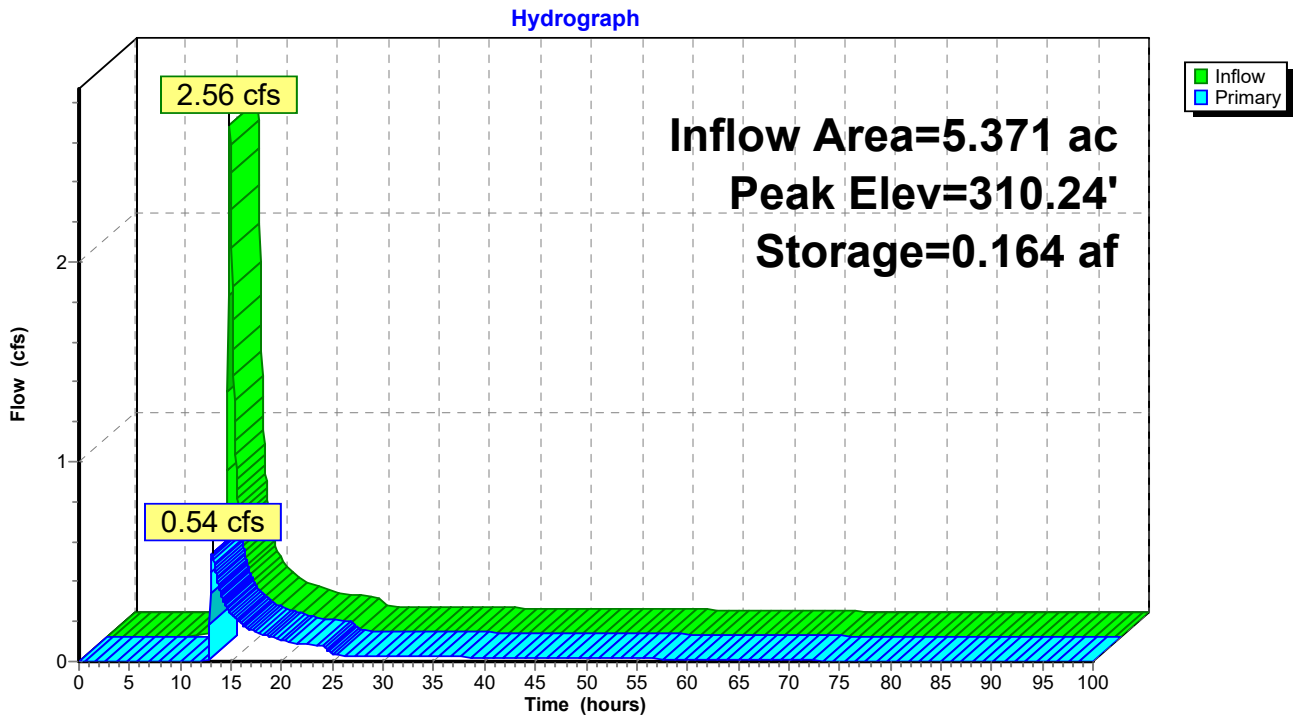
| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 307.00' | 0.248 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 307.00           | 0.019             | 188.4         | 0.000                 | 0.000                 | 0.019            |
| 307.50           | 0.026             | 206.4         | 0.011                 | 0.011                 | 0.032            |
| 308.00           | 0.036             | 232.2         | 0.015                 | 0.027                 | 0.053            |
| 309.00           | 0.057             | 269.3         | 0.046                 | 0.073                 | 0.087            |
| 310.00           | 0.083             | 316.3         | 0.070                 | 0.142                 | 0.138            |
| 311.00           | 0.131             | 434.9         | 0.106                 | 0.248                 | 0.301            |

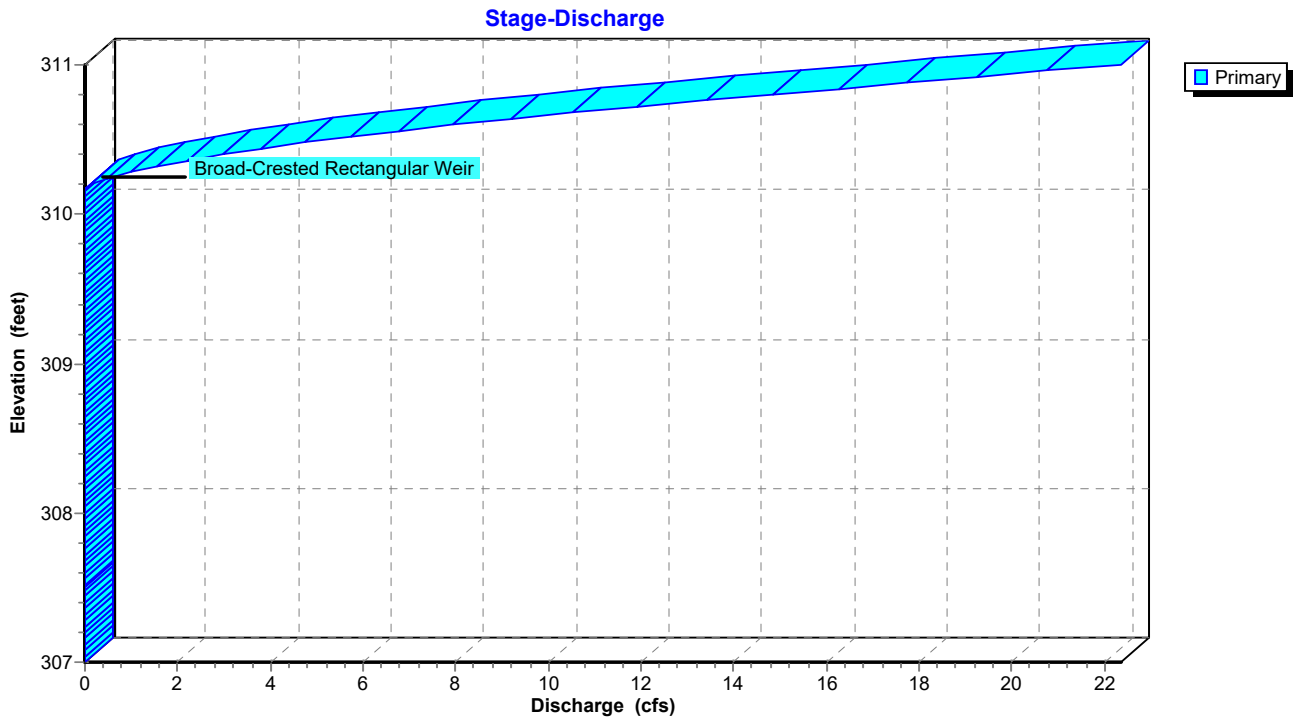
| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Primary OutFlow** Max=0.54 cfs @ 13.15 hrs HW=310.24' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.54 cfs @ 0.66 fps)

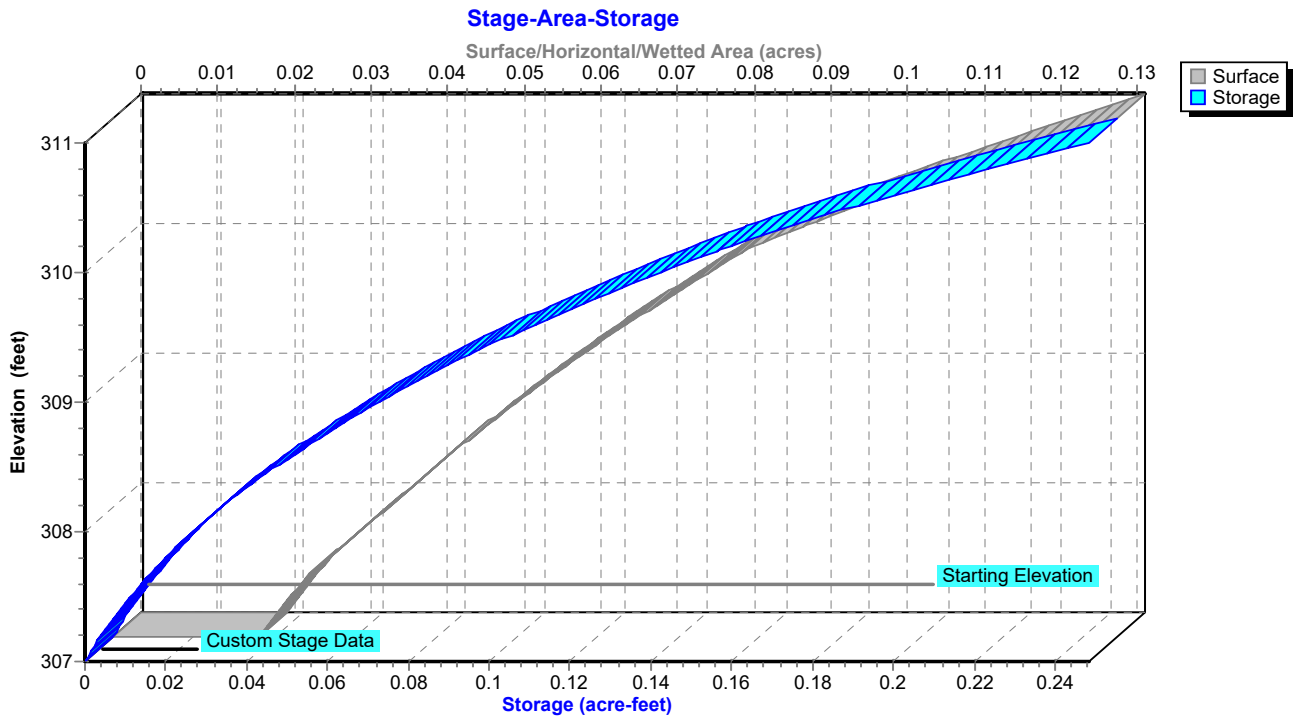
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 2.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 5.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 7.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 10.00        | <b>0.02</b>  | 0.012               | 307.54           | 0.00          |
| 12.50        | <b>1.30</b>  | <b>0.130</b>        | <b>309.85</b>    | <b>0.00</b>   |
| 15.00        | 0.23         | <b>0.161</b>        | <b>310.21</b>    | <b>0.24</b>   |
| 17.50        | 0.14         | 0.160               | 310.20           | 0.15          |
| 20.00        | 0.10         | 0.159               | 310.19           | 0.11          |
| 22.50        | 0.09         | 0.159               | 310.19           | 0.09          |
| 25.00        | 0.04         | 0.158               | 310.18           | 0.04          |
| 27.50        | 0.03         | 0.158               | 310.18           | 0.03          |
| 30.00        | 0.03         | 0.158               | 310.18           | 0.03          |
| 32.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 35.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 37.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 40.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 42.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 45.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 47.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 50.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 52.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 55.00        | 0.01         | 0.158               | 310.18           | 0.01          |
| 57.50        | 0.01         | 0.158               | 310.18           | 0.01          |
| 60.00        | 0.01         | 0.158               | 310.18           | 0.01          |
| 62.50        | 0.01         | 0.158               | 310.18           | 0.01          |
| 65.00        | 0.01         | 0.157               | 310.17           | 0.01          |
| 67.50        | 0.01         | 0.157               | 310.17           | 0.01          |
| 70.00        | 0.01         | 0.157               | 310.17           | 0.01          |
| 72.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 75.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 77.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 80.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 82.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 85.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 87.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 90.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 92.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 95.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 97.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 100.00       | 0.00         | 0.157               | 310.17           | 0.00          |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |



**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

**Summary for Pond 3P: Proposed Stormwater Pond**

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.15' @ 12.25 hrs

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 2.14" for 10-yr event  
 Inflow = 4.93 cfs @ 12.01 hrs, Volume= 0.281 af  
 Outflow = 1.95 cfs @ 12.18 hrs, Volume= 0.280 af, Atten= 60%, Lag= 9.9 min  
 Primary = 1.95 cfs @ 12.18 hrs, Volume= 0.280 af  
 Routed to Reach 6R : 12" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 309.83' Surf.Area= 1,843 sf Storage= 1,307 cf  
 Peak Elev= 311.47' @ 12.18 hrs Surf.Area= 7,909 sf Storage= 6,183 cf (4,876 cf above start)

Plug-Flow detention time= 621.4 min calculated for 0.250 af (89% of inflow)  
 Center-of-Mass det. time= 495.6 min ( 1,322.9 - 827.3 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 311.25' | 8,217 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 308.00' | 3,905 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 307.25' | 1,412 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 13,534 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 311.25           | 3,844             | 283.0         | 0                      | 0                      | 3,844            |
| 312.00           | 4,629             | 305.0         | 3,173                  | 3,173                  | 4,897            |
| 312.95           | 6,020             | 367.0         | 5,044                  | 8,217                  | 8,228            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 308.00           | 58                | 51.0          | 0                      | 0                      | 58               |
| 309.00           | 305               | 90.0          | 165                    | 165                    | 501              |
| 310.00           | 1,751             | 173.0         | 929                    | 1,094                  | 2,243            |
| 311.00           | 2,543             | 203.0         | 2,135                  | 3,229                  | 3,160            |
| 311.25           | 2,867             | 219.0         | 676                    | 3,905                  | 3,700            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 307.25           | 22                | 18.0          | 0                      | 0                      | 22               |
| 308.00           | 103               | 36.0          | 43                     | 43                     | 102              |
| 309.00           | 241               | 56.0          | 167                    | 210                    | 255              |
| 310.00           | 465               | 78.0          | 347                    | 557                    | 499              |
| 311.00           | 814               | 105.0         | 631                    | 1,189                  | 903              |
| 311.25           | 976               | 119.0         | 223                    | 1,412                  | 1,154            |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

Printed 12/13/2024

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| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 311.68' | <b>15.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65<br>2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |
| #2     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #3     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #4     | Primary   | 309.83' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

**Primary OutFlow** Max=1.93 cfs @ 12.18 hrs HW=311.47' TW=310.37' (Dynamic Tailwater)

↳ **2=Orifice/Grate** (Orifice Controls 0.95 cfs @ 2.52 fps)

↳ **3=Orifice/Grate** (Orifice Controls 0.95 cfs @ 2.52 fps)

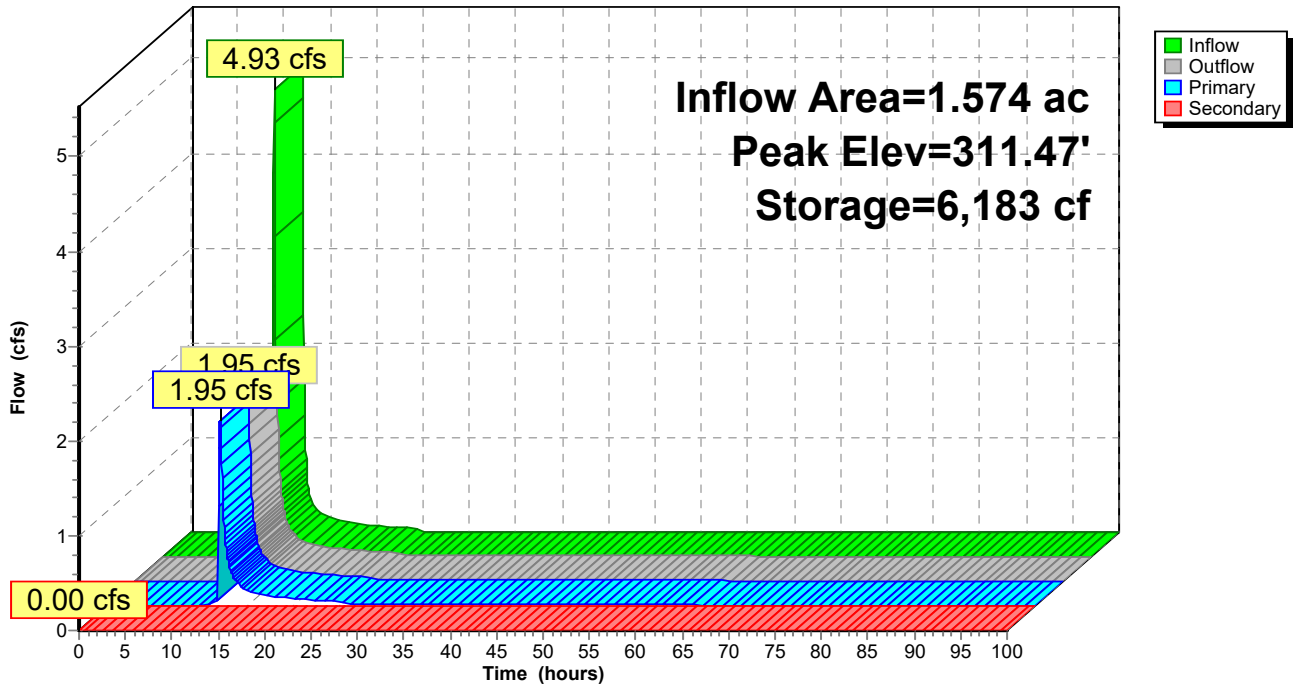
↳ **4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.05 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=309.83' TW=307.50' (Dynamic Tailwater)

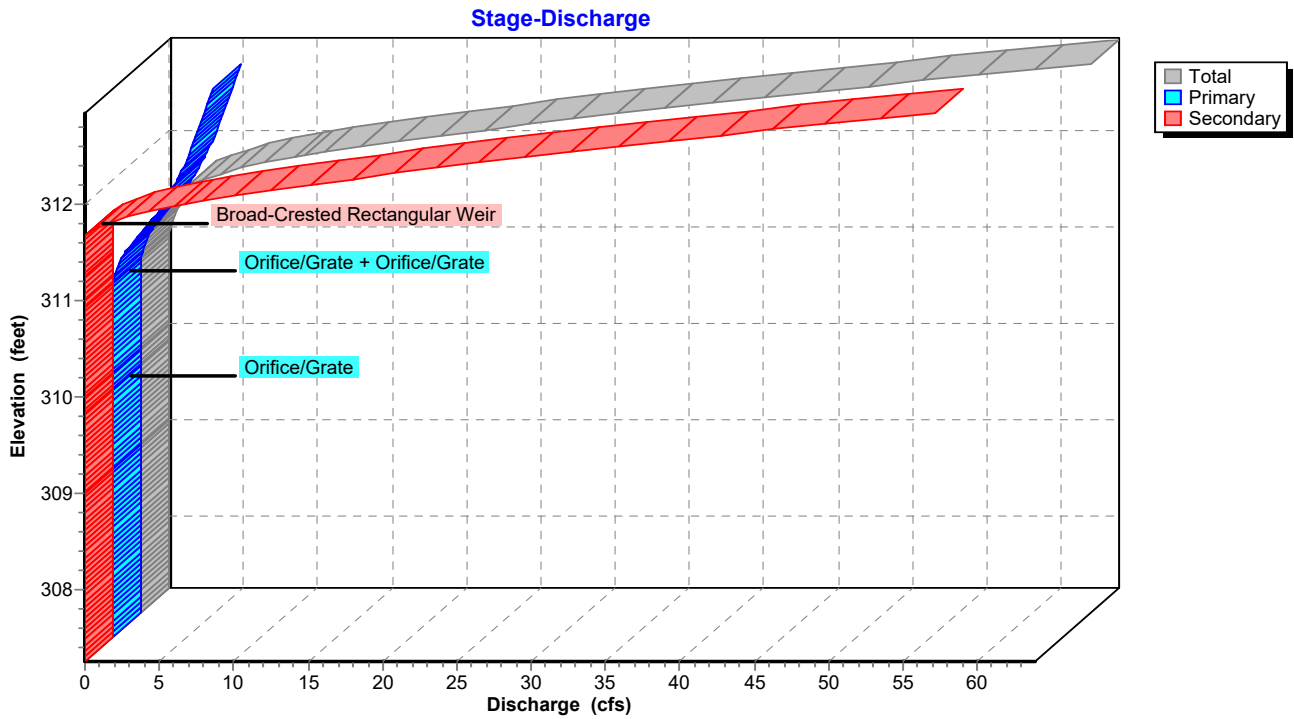
↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Pond 3P: Proposed Stormwater Pond**

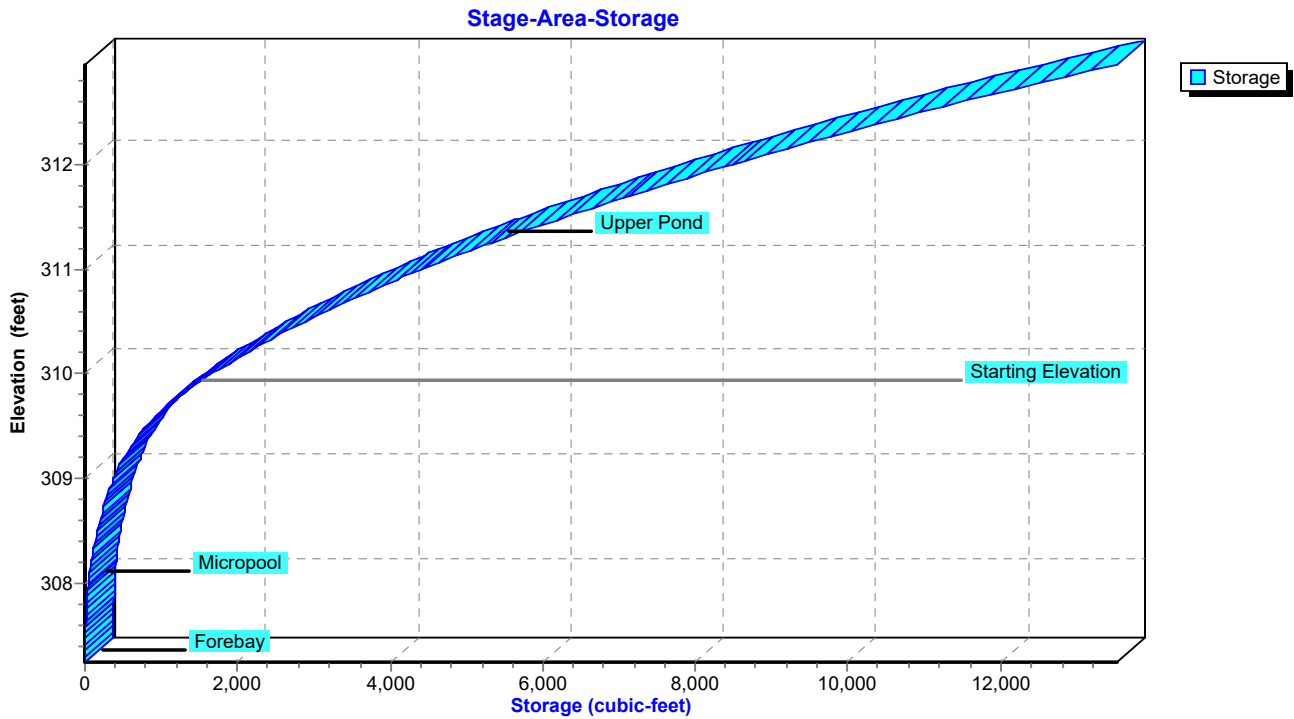
Hydrograph



### Pond 3P: Proposed Stormwater Pond



### Pond 3P: Proposed Stormwater Pond



**Hydrograph for Pond 3P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.01         | 1,322                | 309.84           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.05</b>  | <b>1,486</b>         | <b>309.92</b>    | <b>0.01</b>   | <b>0.01</b>   | 0.00            |
| 12.50        | <b>0.62</b>  | <b>5,561</b>         | <b>311.31</b>    | <b>1.11</b>   | <b>1.11</b>   | 0.00            |
| 15.00        | 0.16         | 4,612                | 311.06           | 0.17          | 0.17          | 0.00            |
| 17.50        | 0.10         | 4,486                | 311.02           | 0.11          | 0.11          | 0.00            |
| 20.00        | 0.07         | 4,415                | 311.00           | 0.08          | 0.08          | 0.00            |
| 22.50        | 0.06         | 4,373                | 310.99           | 0.06          | 0.06          | 0.00            |
| 25.00        | 0.00         | 4,257                | 310.95           | 0.04          | 0.04          | 0.00            |
| 27.50        | 0.00         | 4,018                | 310.88           | 0.03          | 0.03          | 0.00            |
| 30.00        | 0.00         | 3,788                | 310.81           | 0.03          | 0.03          | 0.00            |
| 32.50        | 0.00         | 3,566                | 310.73           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,354                | 310.66           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 3,151                | 310.59           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,957                | 310.52           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,773                | 310.46           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,600                | 310.39           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,436                | 310.33           | 0.02          | 0.02          | 0.00            |
| 50.00        | 0.00         | 2,284                | 310.27           | 0.02          | 0.02          | 0.00            |
| 52.50        | 0.00         | 2,142                | 310.21           | 0.02          | 0.02          | 0.00            |
| 55.00        | 0.00         | 2,011                | 310.16           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,891                | 310.11           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,783                | 310.06           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,687                | 310.02           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,604                | 309.98           | 0.01          | 0.01          | 0.00            |
| 67.50        | 0.00         | 1,533                | 309.95           | 0.01          | 0.01          | 0.00            |
| 70.00        | 0.00         | 1,476                | 309.92           | 0.01          | 0.01          | 0.00            |
| 72.50        | 0.00         | 1,432                | 309.90           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,403                | 309.88           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,383                | 309.87           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,370                | 309.86           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,360                | 309.86           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,353                | 309.85           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,347                | 309.85           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,342                | 309.85           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,339                | 309.85           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,336                | 309.85           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,333                | 309.84           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,331                | 309.84           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 307.25              | 0.00               | 0.00             | 0.00               | 312.55              | 38.45              | 5.83             | 32.62              |
| 307.35              | 0.00               | 0.00             | 0.00               | 312.65              | 44.47              | 6.06             | 38.40              |
| 307.45              | 0.00               | 0.00             | 0.00               | 312.75              | 50.72              | 6.29             | 44.44              |
| 307.55              | 0.00               | 0.00             | 0.00               | 312.85              | 57.22              | 6.51             | 50.71              |
| 307.65              | 0.00               | 0.00             | 0.00               | 312.95              | <b>63.89</b>       | <b>6.72</b>      | <b>57.17</b>       |
| 307.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.95              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.05              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.15              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.25              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.35              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.45              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.55              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.65              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.75              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.85              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 310.95              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 311.05              | 0.16               | 0.16             | 0.00               |                     |                    |                  |                    |
| 311.15              | 0.43               | 0.43             | 0.00               |                     |                    |                  |                    |
| 311.25              | 0.82               | 0.82             | 0.00               |                     |                    |                  |                    |
| 311.35              | 1.30               | 1.30             | 0.00               |                     |                    |                  |                    |
| 311.45              | 1.85               | 1.85             | 0.00               |                     |                    |                  |                    |
| 311.55              | 2.42               | 2.42             | 0.00               |                     |                    |                  |                    |
| 311.65              | 2.98               | 2.98             | 0.00               |                     |                    |                  |                    |
| 311.75              | 4.08               | 3.42             | 0.66               |                     |                    |                  |                    |
| 311.85              | 6.29               | 3.80             | 2.49               |                     |                    |                  |                    |
| 311.95              | 9.24               | 4.15             | 5.09               |                     |                    |                  |                    |
| 312.05              | 12.88              | 4.47             | 8.40               |                     |                    |                  |                    |
| 312.15              | 17.23              | 4.78             | 12.45              |                     |                    |                  |                    |
| 312.25              | 22.30              | 5.06             | 17.24              |                     |                    |                  |                    |
| 312.35              | 27.48              | 5.33             | 22.15              |                     |                    |                  |                    |
| 312.45              | 32.78              | 5.58             | 27.19              |                     |                    |                  |                    |

**Stage-Area-Storage for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
| 307.25              | 0                       | 309.90              | 1,441                   | 312.55              | 11,248                  |
| 307.30              | 1                       | 309.95              | 1,544                   | 312.60              | 11,521                  |
| 307.35              | 3                       | 310.00              | 1,652                   | 312.65              | 11,797                  |
| 307.40              | 4                       | 310.05              | 1,764                   | 312.70              | 12,077                  |
| 307.45              | 6                       | 310.10              | 1,878                   | 312.75              | 12,361                  |
| 307.50              | 8                       | 310.15              | 1,996                   | 312.80              | 12,648                  |
| 307.55              | 10                      | 310.20              | 2,115                   | 312.85              | 12,939                  |
| 307.60              | 13                      | 310.25              | 2,238                   | 312.90              | 13,235                  |
| 307.65              | 15                      | 310.30              | 2,363                   | 312.95              | <b>13,534</b>           |
| 307.70              | 18                      | 310.35              | 2,491                   |                     |                         |
| 307.75              | 22                      | 310.40              | 2,622                   |                     |                         |
| 307.80              | 25                      | 310.45              | 2,756                   |                     |                         |
| 307.85              | 29                      | 310.50              | 2,892                   |                     |                         |
| 307.90              | 34                      | 310.55              | 3,031                   |                     |                         |
| 307.95              | 38                      | 310.60              | 3,173                   |                     |                         |
| 308.00              | 43                      | 310.65              | 3,318                   |                     |                         |
| 308.05              | 52                      | 310.70              | 3,466                   |                     |                         |
| 308.10              | 61                      | 310.75              | 3,617                   |                     |                         |
| 308.15              | 70                      | 310.80              | 3,771                   |                     |                         |
| 308.20              | 81                      | 310.85              | 3,928                   |                     |                         |
| 308.25              | 92                      | 310.90              | 4,088                   |                     |                         |
| 308.30              | 104                     | 310.95              | 4,251                   |                     |                         |
| 308.35              | 117                     | 311.00              | 4,418                   |                     |                         |
| 308.40              | 131                     | 311.05              | 4,588                   |                     |                         |
| 308.45              | 146                     | 311.10              | 4,763                   |                     |                         |
| 308.50              | 161                     | 311.15              | 4,943                   |                     |                         |
| 308.55              | 178                     | 311.20              | 5,127                   |                     |                         |
| 308.60              | 195                     | 311.25              | 5,317                   |                     |                         |
| 308.65              | 214                     | 311.30              | 5,510                   |                     |                         |
| 308.70              | 234                     | 311.35              | 5,706                   |                     |                         |
| 308.75              | 254                     | 311.40              | 5,905                   |                     |                         |
| 308.80              | 276                     | 311.45              | 6,106                   |                     |                         |
| 308.85              | 299                     | 311.50              | 6,309                   |                     |                         |
| 308.90              | 324                     | 311.55              | 6,516                   |                     |                         |
| 308.95              | 349                     | 311.60              | 6,724                   |                     |                         |
| 309.00              | 376                     | 311.65              | 6,936                   |                     |                         |
| 309.05              | 404                     | 311.70              | 7,150                   |                     |                         |
| 309.10              | 436                     | 311.75              | 7,366                   |                     |                         |
| 309.15              | 470                     | 311.80              | 7,586                   |                     |                         |
| 309.20              | 507                     | 311.85              | 7,808                   |                     |                         |
| 309.25              | 548                     | 311.90              | 8,032                   |                     |                         |
| 309.30              | 592                     | 311.95              | 8,260                   |                     |                         |
| 309.35              | 639                     | 312.00              | 8,490                   |                     |                         |
| 309.40              | 691                     | 312.05              | 8,723                   |                     |                         |
| 309.45              | 746                     | 312.10              | 8,960                   |                     |                         |
| 309.50              | 805                     | 312.15              | 9,200                   |                     |                         |
| 309.55              | 868                     | 312.20              | 9,443                   |                     |                         |
| 309.60              | 936                     | 312.25              | 9,690                   |                     |                         |
| 309.65              | 1,008                   | 312.30              | 9,941                   |                     |                         |
| 309.70              | 1,085                   | 312.35              | 10,195                  |                     |                         |
| 309.75              | 1,166                   | 312.40              | 10,453                  |                     |                         |
| 309.80              | 1,253                   | 312.45              | 10,714                  |                     |                         |
| 309.85              | 1,344                   | 312.50              | 10,979                  |                     |                         |

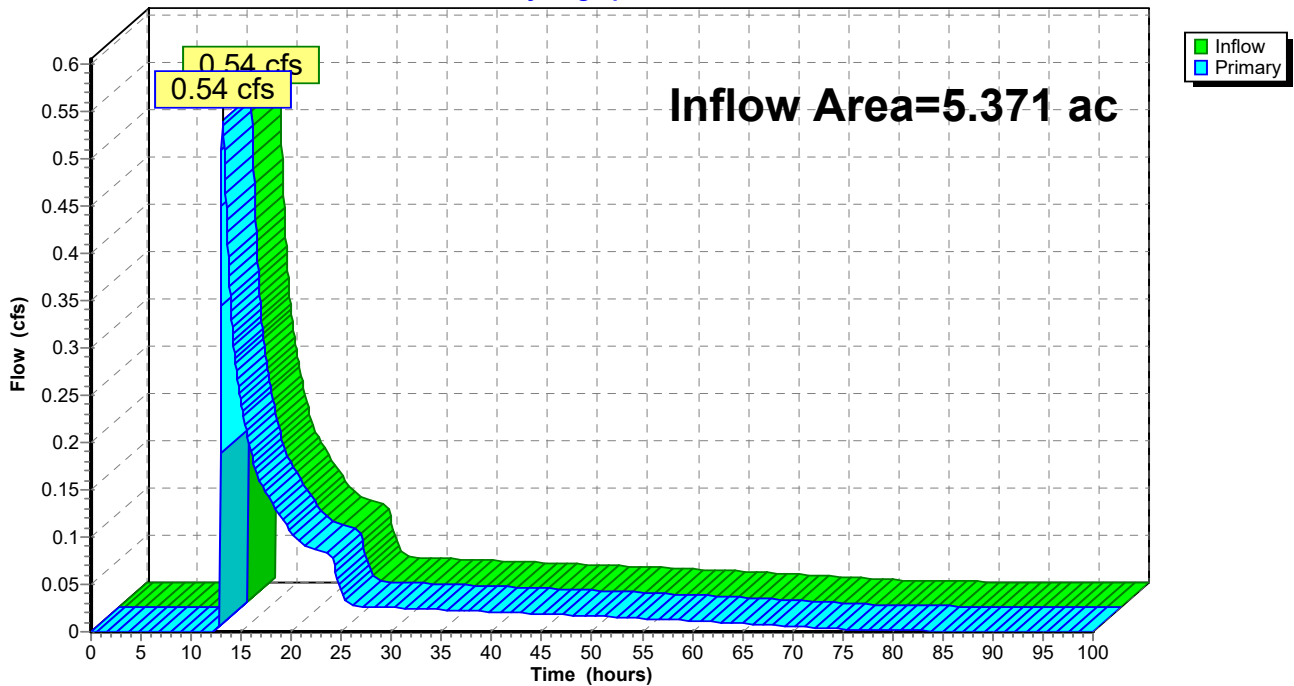
### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth > 0.51" for 10-yr event  
Inflow = 0.54 cfs @ 13.15 hrs, Volume= 0.230 af  
Primary = 0.54 cfs @ 13.15 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1

Hydrograph





**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.02         | 0.00             | 0.02          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.01         | 0.00             | 0.01          |
| 13.00        | <b>0.45</b>  | 0.00             | <b>0.45</b>   | 66.00        | 0.01         | 0.00             | 0.01          |
| 14.00        | <b>0.34</b>  | 0.00             | <b>0.34</b>   | 67.00        | 0.01         | 0.00             | 0.01          |
| 15.00        | 0.24         | 0.00             | 0.24          | 68.00        | 0.01         | 0.00             | 0.01          |
| 16.00        | 0.19         | 0.00             | 0.19          | 69.00        | 0.01         | 0.00             | 0.01          |
| 17.00        | 0.16         | 0.00             | 0.16          | 70.00        | 0.01         | 0.00             | 0.01          |
| 18.00        | 0.14         | 0.00             | 0.14          | 71.00        | 0.01         | 0.00             | 0.01          |
| 19.00        | 0.12         | 0.00             | 0.12          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.11         | 0.00             | 0.11          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.09         | 0.00             | 0.09          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.09         | 0.00             | 0.09          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.08         | 0.00             | 0.08          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.08         | 0.00             | 0.08          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.04         | 0.00             | 0.04          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.03         | 0.00             | 0.03          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.03         | 0.00             | 0.03          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.03         | 0.00             | 0.03          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.03         | 0.00             | 0.03          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.03         | 0.00             | 0.03          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.02         | 0.00             | 0.02          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.02         | 0.00             | 0.02          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.02         | 0.00             | 0.02          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.02         | 0.00             | 0.02          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 49.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 50.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 51.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 52.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |

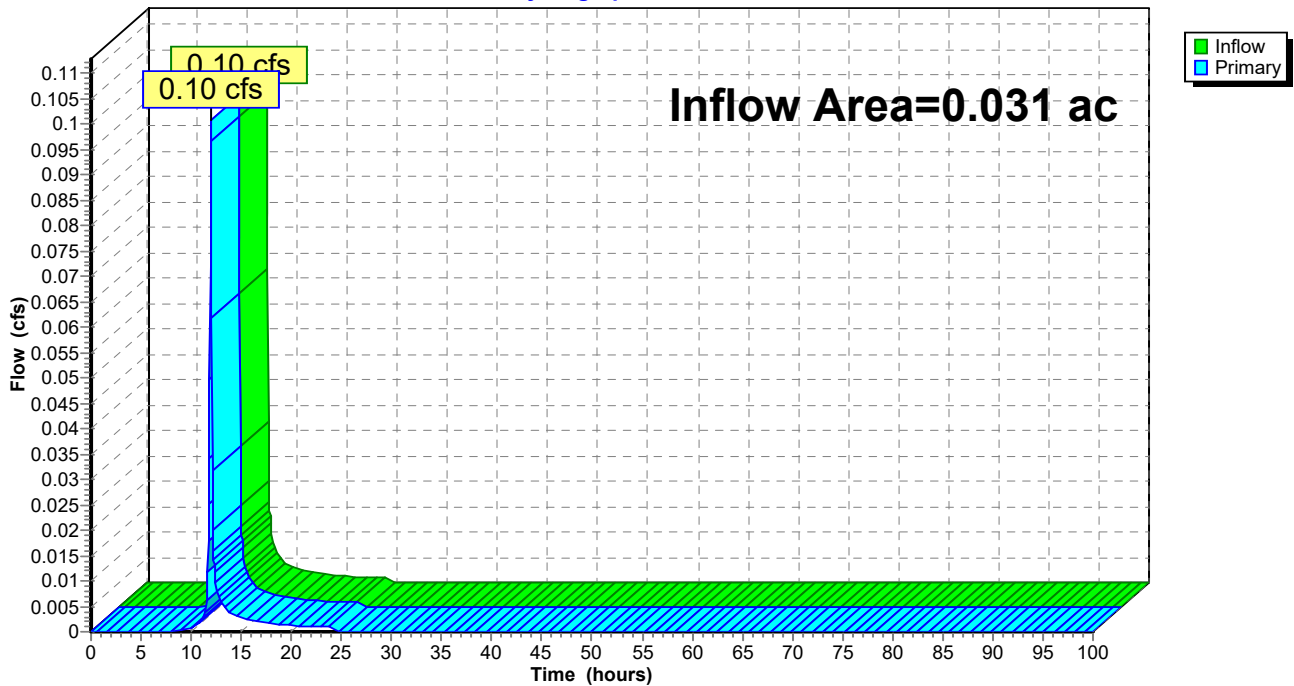
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.031 ac, 3.23% Impervious, Inflow Depth = 1.89" for 10-yr event  
Inflow = 0.10 cfs @ 11.97 hrs, Volume= 0.005 af  
Primary = 0.10 cfs @ 11.97 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.10</b>  | 0.00             | <b>0.10</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.01         | 0.00             | 0.01          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |  |
|---|--|
| <b>Subcatchment 1S: Subcat 1</b>            | Runoff Area=3.182 ac 9.18% Impervious Runoff Depth=0.72"<br>Flow Length=499' Tc=10.1 min CN=54 Runoff=2.73 cfs 0.190 af                                      |
| <b>Subcatchment 2aS: Subcat 2a</b>          | Runoff Area=0.830 ac 18.55% Impervious Runoff Depth=2.69"<br>Flow Length=81' Tc=6.7 min CN=82 Runoff=3.76 cfs 0.186 af                                       |
| <b>Subcatchment 2bS: Subcat 2a</b>          | Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=2.34"<br>Flow Length=55' Slope=0.0170 '/' Tc=6.0 min CN=78 Runoff=0.77 cfs 0.037 af                       |
| <b>Subcatchment 2cS: Subcat 2c</b>          | Runoff Area=0.506 ac 47.43% Impervious Runoff Depth=3.25"<br>Flow Length=193' Tc=6.0 min CN=88 Runoff=2.72 cfs 0.137 af                                      |
| <b>Subcatchment 2dS: Subcat 2d</b>          | Runoff Area=0.425 ac 28.00% Impervious Runoff Depth=2.69"<br>Flow Length=156' Tc=7.5 min CN=82 Runoff=1.88 cfs 0.095 af                                      |
| <b>Subcatchment 2eS: Subcat 2e</b>          | Runoff Area=0.238 ac 26.47% Impervious Runoff Depth=2.78"<br>Flow Length=120' Tc=7.9 min CN=83 Runoff=1.07 cfs 0.055 af                                      |
| <b>Subcatchment 3S: Subcat 3</b>            | Runoff Area=0.031 ac 3.23% Impervious Runoff Depth=2.60"<br>Flow Length=13' Slope=0.0779 '/' Tc=6.0 min CN=81 Runoff=0.14 cfs 0.007 af                       |
| <b>Reach 1R: Existing Swale</b>             | Avg. Flow Depth=0.16' Max Vel=1.84 fps Inflow=0.77 cfs 0.087 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=0.74 cfs 0.087 af                |
| <b>Reach 2R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.64' Max Vel=1.27 fps Inflow=3.76 cfs 0.186 af<br>n=0.080 L=390.0' S=0.0154 '/' Capacity=8.93 cfs Outflow=3.17 cfs 0.186 af                 |
| <b>Reach 3R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.80' Max Vel=1.01 fps Inflow=3.67 cfs 0.192 af<br>n=0.100 L=104.0' S=0.0116 '/' Capacity=8.50 cfs Outflow=3.57 cfs 0.192 af                 |
| <b>Reach 4R: Proposed 10" Culvert</b>       | Avg. Flow Depth=0.35' Max Vel=4.79 fps Inflow=1.03 cfs 0.055 af<br>10.0" Round Pipe n=0.010 L=33.0' S=0.0100 '/' Capacity=2.85 cfs Outflow=1.03 cfs 0.055 af |
| <b>Reach 5R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.29' Max Vel=1.22 fps Inflow=1.07 cfs 0.055 af<br>n=0.080 L=136.0' S=0.0328 '/' Capacity=6.51 cfs Outflow=1.03 cfs 0.055 af                 |
| <b>Reach 6R: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=0.79' Max Vel=5.00 fps Inflow=3.34 cfs 0.375 af<br>12.0" Round Pipe n=0.012 L=22.6' S=0.0080 '/' Capacity=3.44 cfs Outflow=3.33 cfs 0.375 af |
| <b>Pond 1ST: Existing Sediment Trap</b>     | Peak Elev=316.53' Storage=0.338 af Inflow=2.73 cfs 0.190 af<br>Outflow=0.10 cfs 0.050 af   |
| <b>Pond 2ST: Existing Sediment Trap</b>     | Peak Elev=310.36' Storage=0.175 af Inflow=4.93 cfs 0.560 af<br>Outflow=2.26 cfs 0.414 af   |
| <b>Pond 3P: Proposed Stormwater Pond</b>    | Peak Elev=311.73' Storage=7,269 cf Inflow=6.68 cfs 0.378 af<br>Primary=3.34 cfs 0.375 af Secondary=0.35 cfs 0.003 af Outflow=3.69 cfs 0.378 af               |

**Link AP1: Analysis Point 1**

Inflow=2.26 cfs 0.414 af  
Primary=2.26 cfs 0.414 af

**Link AP2: Analysis Point 2**

Inflow=0.14 cfs 0.007 af  
Primary=0.14 cfs 0.007 af

**Total Runoff Area = 5.402 ac   Runoff Volume = 0.707 af   Average Runoff Depth = 1.57"**  
**83.91% Pervious = 4.533 ac   16.09% Impervious = 0.869 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 2.73 cfs @ 12.05 hrs, Volume= 0.190 af, Depth= 0.72"  
 Routed to Pond 1ST : Existing Sediment Trap

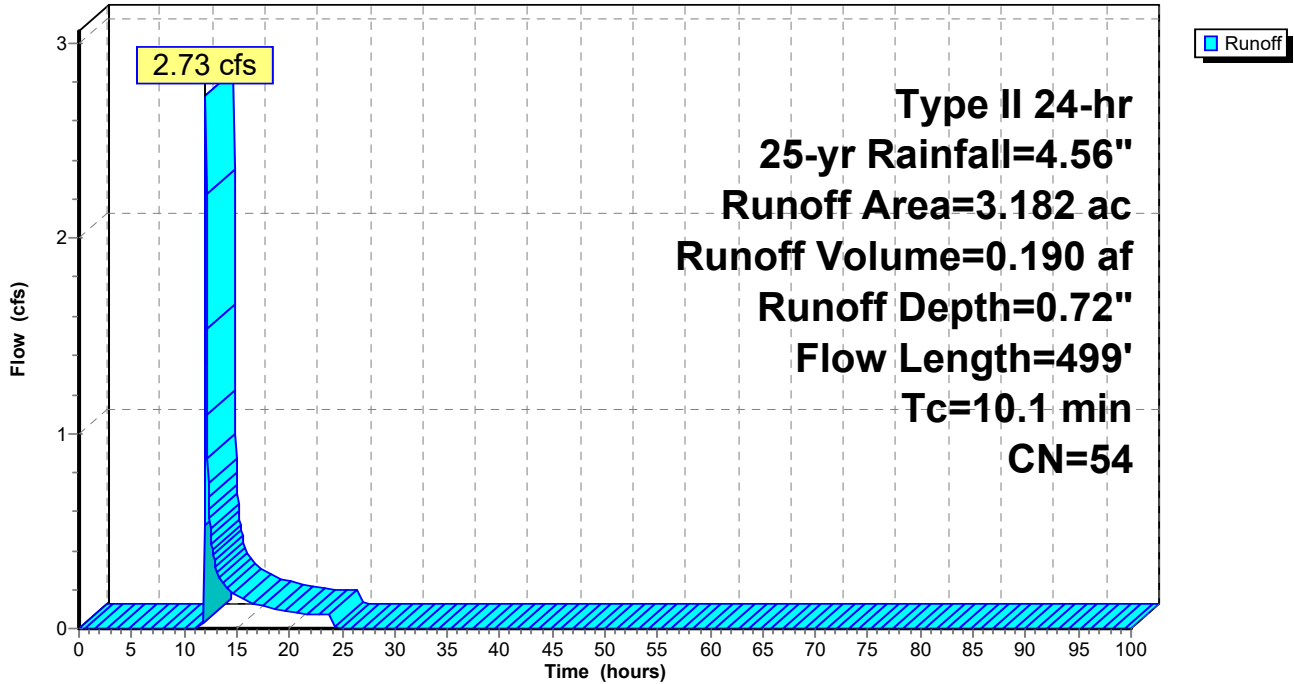
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.022     | 98 | Roofs, HSG A                        |
| 0.005     | 98 | Paved parking, HSG A                |
| 0.127     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.253     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 1.091     | 78 | Meadow, non-grazed, HSG D           |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.182     | 54 | Weighted Average                    |
| 2.890     |    | 90.82% Pervious Area                |
| 0.292     |    | 9.18% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.3      | 69            | 0.0600        | 3.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.1     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



**Hydrograph for Subcatchment 1S: Subcat 1**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 0.72            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 0.72            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 0.72            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 0.72            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 0.72            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 0.72            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 0.72            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 0.72            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 0.72            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 0.72            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 0.72            | 0.00         |
| 11.00        | 1.07             | 0.00            | 0.00         | 64.00        | 4.56             | 0.72            | 0.00         |
| 12.00        | 3.02             | 0.18            | <b>2.36</b>  | 65.00        | 4.56             | 0.72            | 0.00         |
| 13.00        | 3.52             | 0.32            | <b>0.32</b>  | 66.00        | 4.56             | 0.72            | 0.00         |
| 14.00        | 3.74             | 0.39            | 0.20         | 67.00        | 4.56             | 0.72            | 0.00         |
| 15.00        | 3.89             | 0.45            | 0.17         | 68.00        | 4.56             | 0.72            | 0.00         |
| 16.00        | 4.01             | 0.49            | 0.13         | 69.00        | 4.56             | 0.72            | 0.00         |
| 17.00        | 4.11             | 0.53            | 0.12         | 70.00        | 4.56             | 0.72            | 0.00         |
| 18.00        | 4.20             | 0.57            | 0.11         | 71.00        | 4.56             | 0.72            | 0.00         |
| 19.00        | 4.28             | 0.60            | 0.10         | 72.00        | 4.56             | 0.72            | 0.00         |
| 20.00        | 4.34             | 0.62            | 0.08         | 73.00        | 4.56             | 0.72            | 0.00         |
| 21.00        | 4.40             | 0.65            | 0.08         | 74.00        | 4.56             | 0.72            | 0.00         |
| 22.00        | 4.46             | 0.67            | 0.08         | 75.00        | 4.56             | 0.72            | 0.00         |
| 23.00        | 4.51             | 0.69            | 0.07         | 76.00        | 4.56             | 0.72            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>0.72</b>     | 0.07         | 77.00        | 4.56             | 0.72            | 0.00         |
| 25.00        | 4.56             | 0.72            | 0.00         | 78.00        | 4.56             | 0.72            | 0.00         |
| 26.00        | 4.56             | 0.72            | 0.00         | 79.00        | 4.56             | 0.72            | 0.00         |
| 27.00        | 4.56             | 0.72            | 0.00         | 80.00        | 4.56             | 0.72            | 0.00         |
| 28.00        | 4.56             | 0.72            | 0.00         | 81.00        | 4.56             | 0.72            | 0.00         |
| 29.00        | 4.56             | 0.72            | 0.00         | 82.00        | 4.56             | 0.72            | 0.00         |
| 30.00        | 4.56             | 0.72            | 0.00         | 83.00        | 4.56             | 0.72            | 0.00         |
| 31.00        | 4.56             | 0.72            | 0.00         | 84.00        | 4.56             | 0.72            | 0.00         |
| 32.00        | 4.56             | 0.72            | 0.00         | 85.00        | 4.56             | 0.72            | 0.00         |
| 33.00        | 4.56             | 0.72            | 0.00         | 86.00        | 4.56             | 0.72            | 0.00         |
| 34.00        | 4.56             | 0.72            | 0.00         | 87.00        | 4.56             | 0.72            | 0.00         |
| 35.00        | 4.56             | 0.72            | 0.00         | 88.00        | 4.56             | 0.72            | 0.00         |
| 36.00        | 4.56             | 0.72            | 0.00         | 89.00        | 4.56             | 0.72            | 0.00         |
| 37.00        | 4.56             | 0.72            | 0.00         | 90.00        | 4.56             | 0.72            | 0.00         |
| 38.00        | 4.56             | 0.72            | 0.00         | 91.00        | 4.56             | 0.72            | 0.00         |
| 39.00        | 4.56             | 0.72            | 0.00         | 92.00        | 4.56             | 0.72            | 0.00         |
| 40.00        | 4.56             | 0.72            | 0.00         | 93.00        | 4.56             | 0.72            | 0.00         |
| 41.00        | 4.56             | 0.72            | 0.00         | 94.00        | 4.56             | 0.72            | 0.00         |
| 42.00        | 4.56             | 0.72            | 0.00         | 95.00        | 4.56             | 0.72            | 0.00         |
| 43.00        | 4.56             | 0.72            | 0.00         | 96.00        | 4.56             | 0.72            | 0.00         |
| 44.00        | 4.56             | 0.72            | 0.00         | 97.00        | 4.56             | 0.72            | 0.00         |
| 45.00        | 4.56             | 0.72            | 0.00         | 98.00        | 4.56             | 0.72            | 0.00         |
| 46.00        | 4.56             | 0.72            | 0.00         | 99.00        | 4.56             | 0.72            | 0.00         |
| 47.00        | 4.56             | 0.72            | 0.00         | 100.00       | 4.56             | 0.72            | 0.00         |
| 48.00        | 4.56             | 0.72            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 0.72            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 0.72            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 0.72            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 0.72            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 3.76 cfs @ 11.98 hrs, Volume= 0.186 af, Depth= 2.69"  
 Routed to Reach 2R : Proposed RRv Swale

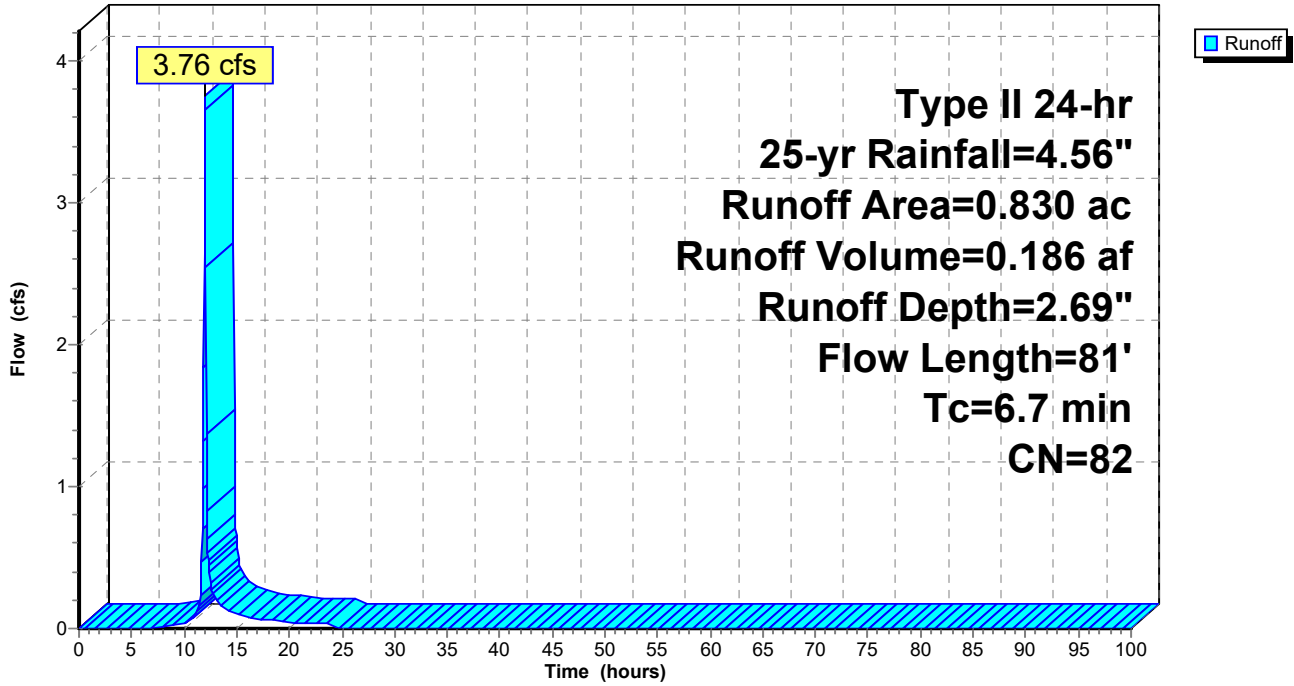
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.480     | 78 | Meadow, non-grazed, HSG D     |
| 0.002     | 71 | Meadow, non-grazed, HSG C     |
| * 0.002   | 98 | Paved parking, HSG D          |
| * 0.152   | 98 | Paved parking, HSG D          |
| 0.194     | 80 | >75% Grass cover, Good, HSG D |
| 0.830     | 82 | Weighted Average              |
| 0.676     |    | 81.45% Pervious Area          |
| 0.154     |    | 18.55% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.2      | 14            | 0.0460        | 1.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59" |
| 1.9      | 20            | 0.0460        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 3.3      | 32            | 0.0310        | 0.16              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 1.3      | 15            | 0.0670        | 0.19              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 6.7      | 81            | Total         |                   |                |   |

Subcatchment 2aS: Subcat 2a

Hydrograph



**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.69            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.69            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.69            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.69            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.69            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.69            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.69            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 2.69            | 0.00         |
| 8.00         | 0.55             | 0.01            | 0.01         | 61.00        | 4.56             | 2.69            | 0.00         |
| 9.00         | 0.67             | 0.02            | 0.02         | 62.00        | 4.56             | 2.69            | 0.00         |
| 10.00        | 0.83             | 0.06            | 0.04         | 63.00        | 4.56             | 2.69            | 0.00         |
| 11.00        | 1.07             | 0.14            | 0.10         | 64.00        | 4.56             | 2.69            | 0.00         |
| 12.00        | 3.02             | 1.40            | <b>3.65</b>  | 65.00        | 4.56             | 2.69            | 0.00         |
| 13.00        | 3.52             | 1.80            | 0.21         | 66.00        | 4.56             | 2.69            | 0.00         |
| 14.00        | 3.74             | 1.98            | 0.13         | 67.00        | 4.56             | 2.69            | 0.00         |
| 15.00        | 3.89             | 2.11            | 0.10         | 68.00        | 4.56             | 2.69            | 0.00         |
| 16.00        | 4.01             | 2.21            | 0.08         | 69.00        | 4.56             | 2.69            | 0.00         |
| 17.00        | 4.11             | 2.30            | 0.07         | 70.00        | 4.56             | 2.69            | 0.00         |
| 18.00        | 4.20             | 2.37            | 0.06         | 71.00        | 4.56             | 2.69            | 0.00         |
| 19.00        | 4.28             | 2.44            | 0.05         | 72.00        | 4.56             | 2.69            | 0.00         |
| 20.00        | 4.34             | 2.50            | 0.04         | 73.00        | 4.56             | 2.69            | 0.00         |
| 21.00        | 4.40             | 2.55            | 0.04         | 74.00        | 4.56             | 2.69            | 0.00         |
| 22.00        | 4.46             | 2.60            | 0.04         | 75.00        | 4.56             | 2.69            | 0.00         |
| 23.00        | 4.51             | 2.64            | 0.04         | 76.00        | 4.56             | 2.69            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.69</b>     | 0.04         | 77.00        | 4.56             | 2.69            | 0.00         |
| 25.00        | 4.56             | 2.69            | 0.00         | 78.00        | 4.56             | 2.69            | 0.00         |
| 26.00        | 4.56             | 2.69            | 0.00         | 79.00        | 4.56             | 2.69            | 0.00         |
| 27.00        | 4.56             | 2.69            | 0.00         | 80.00        | 4.56             | 2.69            | 0.00         |
| 28.00        | 4.56             | 2.69            | 0.00         | 81.00        | 4.56             | 2.69            | 0.00         |
| 29.00        | 4.56             | 2.69            | 0.00         | 82.00        | 4.56             | 2.69            | 0.00         |
| 30.00        | 4.56             | 2.69            | 0.00         | 83.00        | 4.56             | 2.69            | 0.00         |
| 31.00        | 4.56             | 2.69            | 0.00         | 84.00        | 4.56             | 2.69            | 0.00         |
| 32.00        | 4.56             | 2.69            | 0.00         | 85.00        | 4.56             | 2.69            | 0.00         |
| 33.00        | 4.56             | 2.69            | 0.00         | 86.00        | 4.56             | 2.69            | 0.00         |
| 34.00        | 4.56             | 2.69            | 0.00         | 87.00        | 4.56             | 2.69            | 0.00         |
| 35.00        | 4.56             | 2.69            | 0.00         | 88.00        | 4.56             | 2.69            | 0.00         |
| 36.00        | 4.56             | 2.69            | 0.00         | 89.00        | 4.56             | 2.69            | 0.00         |
| 37.00        | 4.56             | 2.69            | 0.00         | 90.00        | 4.56             | 2.69            | 0.00         |
| 38.00        | 4.56             | 2.69            | 0.00         | 91.00        | 4.56             | 2.69            | 0.00         |
| 39.00        | 4.56             | 2.69            | 0.00         | 92.00        | 4.56             | 2.69            | 0.00         |
| 40.00        | 4.56             | 2.69            | 0.00         | 93.00        | 4.56             | 2.69            | 0.00         |
| 41.00        | 4.56             | 2.69            | 0.00         | 94.00        | 4.56             | 2.69            | 0.00         |
| 42.00        | 4.56             | 2.69            | 0.00         | 95.00        | 4.56             | 2.69            | 0.00         |
| 43.00        | 4.56             | 2.69            | 0.00         | 96.00        | 4.56             | 2.69            | 0.00         |
| 44.00        | 4.56             | 2.69            | 0.00         | 97.00        | 4.56             | 2.69            | 0.00         |
| 45.00        | 4.56             | 2.69            | 0.00         | 98.00        | 4.56             | 2.69            | 0.00         |
| 46.00        | 4.56             | 2.69            | 0.00         | 99.00        | 4.56             | 2.69            | 0.00         |
| 47.00        | 4.56             | 2.69            | 0.00         | 100.00       | 4.56             | 2.69            | 0.00         |
| 48.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2bS: Subcat 2a**

Runoff = 0.77 cfs @ 11.97 hrs, Volume= 0.037 af, Depth= 2.34"  
 Routed to Reach 1R : Existing Swale

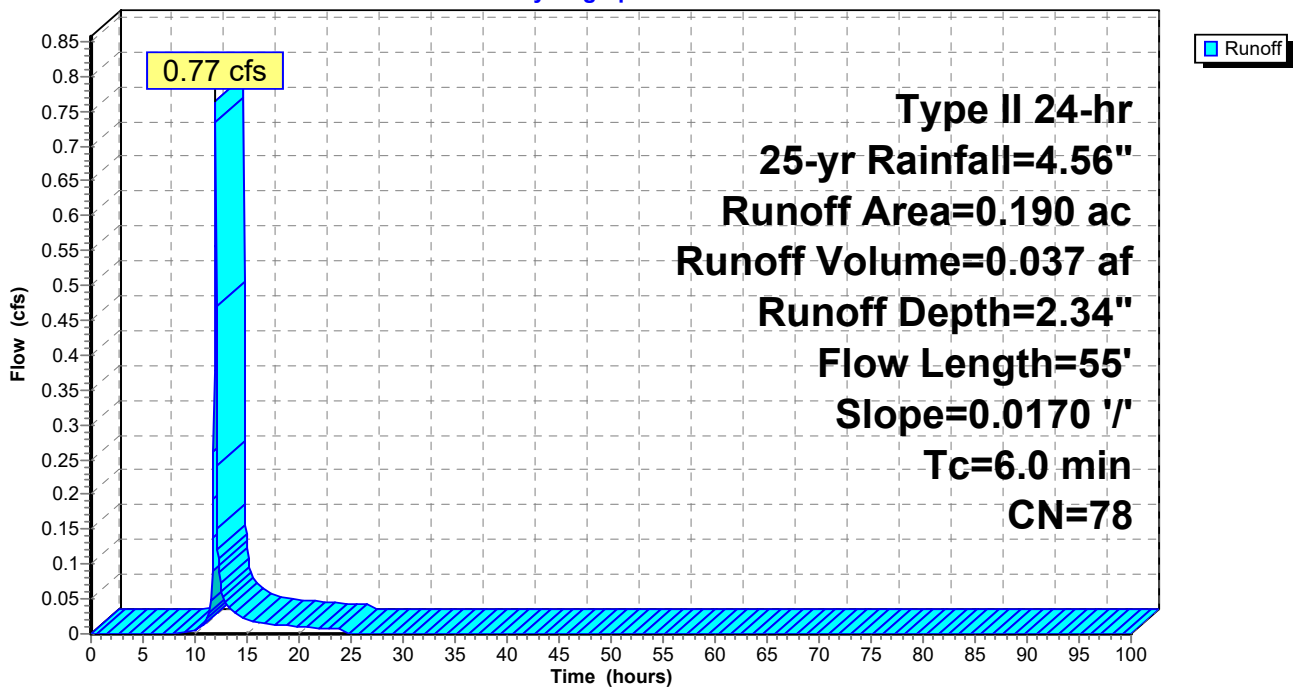
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.188     | 78 | Meadow, non-grazed, HSG D |
| 0.002     | 71 | Meadow, non-grazed, HSG C |
| 0.190     | 78 | Weighted Average          |
| 0.190     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.0      | 55            | 0.0170                                   | 0.91              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.0      | 55            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 2bS: Subcat 2a**

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2bS: Subcat 2a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 2.34               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 2.34               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 2.34               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 2.34               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 2.34               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 2.34               | 0.00            |
| 6.00            | 0.36                | 0.00               | 0.00            | 59.00           | 4.56                | 2.34               | 0.00            |
| 7.00            | 0.45                | 0.00               | 0.00            | 60.00           | 4.56                | 2.34               | 0.00            |
| 8.00            | 0.55                | 0.00               | 0.00            | 61.00           | 4.56                | 2.34               | 0.00            |
| 9.00            | 0.67                | 0.00               | 0.00            | 62.00           | 4.56                | 2.34               | 0.00            |
| 10.00           | 0.83                | 0.02               | 0.01            | 63.00           | 4.56                | 2.34               | 0.00            |
| 11.00           | 1.07                | 0.08               | <b>0.02</b>     | 64.00           | 4.56                | 2.34               | 0.00            |
| 12.00           | 3.02                | 1.15               | <b>0.73</b>     | 65.00           | 4.56                | 2.34               | 0.00            |
| 13.00           | 3.52                | 1.51               | 0.04            | 66.00           | 4.56                | 2.34               | 0.00            |
| 14.00           | 3.74                | 1.68               | 0.03            | 67.00           | 4.56                | 2.34               | 0.00            |
| 15.00           | 3.89                | 1.80               | 0.02            | 68.00           | 4.56                | 2.34               | 0.00            |
| 16.00           | 4.01                | 1.90               | 0.02            | 69.00           | 4.56                | 2.34               | 0.00            |
| 17.00           | 4.11                | 1.98               | 0.01            | 70.00           | 4.56                | 2.34               | 0.00            |
| 18.00           | 4.20                | 2.05               | 0.01            | 71.00           | 4.56                | 2.34               | 0.00            |
| 19.00           | 4.28                | 2.11               | 0.01            | 72.00           | 4.56                | 2.34               | 0.00            |
| 20.00           | 4.34                | 2.16               | 0.01            | 73.00           | 4.56                | 2.34               | 0.00            |
| 21.00           | 4.40                | 2.21               | 0.01            | 74.00           | 4.56                | 2.34               | 0.00            |
| 22.00           | 4.46                | 2.26               | 0.01            | 75.00           | 4.56                | 2.34               | 0.00            |
| 23.00           | 4.51                | 2.30               | 0.01            | 76.00           | 4.56                | 2.34               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>2.34</b>        | 0.01            | 77.00           | 4.56                | 2.34               | 0.00            |
| 25.00           | 4.56                | 2.34               | 0.00            | 78.00           | 4.56                | 2.34               | 0.00            |
| 26.00           | 4.56                | 2.34               | 0.00            | 79.00           | 4.56                | 2.34               | 0.00            |
| 27.00           | 4.56                | 2.34               | 0.00            | 80.00           | 4.56                | 2.34               | 0.00            |
| 28.00           | 4.56                | 2.34               | 0.00            | 81.00           | 4.56                | 2.34               | 0.00            |
| 29.00           | 4.56                | 2.34               | 0.00            | 82.00           | 4.56                | 2.34               | 0.00            |
| 30.00           | 4.56                | 2.34               | 0.00            | 83.00           | 4.56                | 2.34               | 0.00            |
| 31.00           | 4.56                | 2.34               | 0.00            | 84.00           | 4.56                | 2.34               | 0.00            |
| 32.00           | 4.56                | 2.34               | 0.00            | 85.00           | 4.56                | 2.34               | 0.00            |
| 33.00           | 4.56                | 2.34               | 0.00            | 86.00           | 4.56                | 2.34               | 0.00            |
| 34.00           | 4.56                | 2.34               | 0.00            | 87.00           | 4.56                | 2.34               | 0.00            |
| 35.00           | 4.56                | 2.34               | 0.00            | 88.00           | 4.56                | 2.34               | 0.00            |
| 36.00           | 4.56                | 2.34               | 0.00            | 89.00           | 4.56                | 2.34               | 0.00            |
| 37.00           | 4.56                | 2.34               | 0.00            | 90.00           | 4.56                | 2.34               | 0.00            |
| 38.00           | 4.56                | 2.34               | 0.00            | 91.00           | 4.56                | 2.34               | 0.00            |
| 39.00           | 4.56                | 2.34               | 0.00            | 92.00           | 4.56                | 2.34               | 0.00            |
| 40.00           | 4.56                | 2.34               | 0.00            | 93.00           | 4.56                | 2.34               | 0.00            |
| 41.00           | 4.56                | 2.34               | 0.00            | 94.00           | 4.56                | 2.34               | 0.00            |
| 42.00           | 4.56                | 2.34               | 0.00            | 95.00           | 4.56                | 2.34               | 0.00            |
| 43.00           | 4.56                | 2.34               | 0.00            | 96.00           | 4.56                | 2.34               | 0.00            |
| 44.00           | 4.56                | 2.34               | 0.00            | 97.00           | 4.56                | 2.34               | 0.00            |
| 45.00           | 4.56                | 2.34               | 0.00            | 98.00           | 4.56                | 2.34               | 0.00            |
| 46.00           | 4.56                | 2.34               | 0.00            | 99.00           | 4.56                | 2.34               | 0.00            |
| 47.00           | 4.56                | 2.34               | 0.00            | 100.00          | 4.56                | 2.34               | 0.00            |
| 48.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 2.34               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2cS: Subcat 2c**

Runoff = 2.72 cfs @ 11.97 hrs, Volume= 0.137 af, Depth= 3.25"  
 Routed to Reach 3R : Proposed RRv Swale

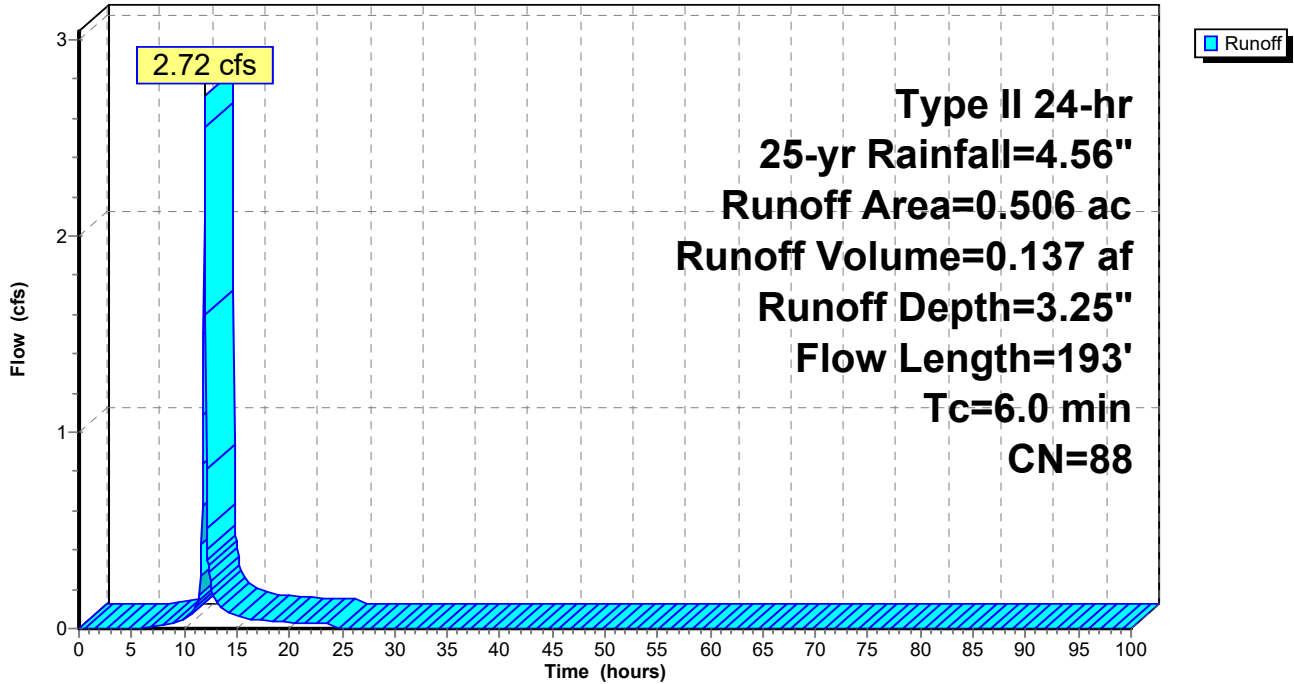
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.143     | 78 | Meadow, non-grazed, HSG D     |
| 0.030     | 71 | Meadow, non-grazed, HSG C     |
| * 0.023   | 89 | Gravel surface, HSG D         |
| * 0.056   | 98 | Paved parking, HSGD           |
| * 0.023   | 98 | Roofs, HSG D                  |
| * 0.113   | 98 | Paved parking, HSG D          |
| 0.070     | 80 | >75% Grass cover, Good, HSG D |
| 0.048     | 98 | Water Surface, HSG D          |
| 0.506     | 88 | Weighted Average              |
| 0.266     |    | 52.57% Pervious Area          |
| 0.240     |    | 47.43% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 0.7      | 45            | 0.0200                                   | 1.05              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.6      | 36            | 0.0200                                   | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 2.9      | 19            | 0.0200                                   | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.1      | 6             | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.0      | 6             | 0.0200                                   | 2.87              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.5      | 43            | 0.0470                                   | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 5.4      | 193           | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

Subcatchment 2cS: Subcat 2c

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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**Hydrograph for Subcatchment 2cS: Subcat 2c**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 3.25               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 3.25               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 3.25               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 3.25               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 3.25               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 3.25               | 0.00            |
| 6.00            | 0.36                | 0.01               | 0.00            | 59.00           | 4.56                | 3.25               | 0.00            |
| 7.00            | 0.45                | 0.02               | 0.01            | 60.00           | 4.56                | 3.25               | 0.00            |
| 8.00            | 0.55                | 0.05               | 0.02            | 61.00           | 4.56                | 3.25               | 0.00            |
| 9.00            | 0.67                | 0.09               | 0.03            | 62.00           | 4.56                | 3.25               | 0.00            |
| 10.00           | 0.83                | 0.16               | 0.04            | 63.00           | 4.56                | 3.25               | 0.00            |
| 11.00           | 1.07                | 0.30               | <b>0.09</b>     | 64.00           | 4.56                | 3.25               | 0.00            |
| 12.00           | 3.02                | 1.84               | <b>2.55</b>     | 65.00           | 4.56                | 3.25               | 0.00            |
| 13.00           | 3.52                | 2.29               | 0.14            | 66.00           | 4.56                | 3.25               | 0.00            |
| 14.00           | 3.74                | 2.49               | 0.08            | 67.00           | 4.56                | 3.25               | 0.00            |
| 15.00           | 3.89                | 2.63               | 0.07            | 68.00           | 4.56                | 3.25               | 0.00            |
| 16.00           | 4.01                | 2.74               | 0.05            | 69.00           | 4.56                | 3.25               | 0.00            |
| 17.00           | 4.11                | 2.83               | 0.04            | 70.00           | 4.56                | 3.25               | 0.00            |
| 18.00           | 4.20                | 2.91               | 0.04            | 71.00           | 4.56                | 3.25               | 0.00            |
| 19.00           | 4.28                | 2.99               | 0.03            | 72.00           | 4.56                | 3.25               | 0.00            |
| 20.00           | 4.34                | 3.05               | 0.03            | 73.00           | 4.56                | 3.25               | 0.00            |
| 21.00           | 4.40                | 3.10               | 0.03            | 74.00           | 4.56                | 3.25               | 0.00            |
| 22.00           | 4.46                | 3.15               | 0.03            | 75.00           | 4.56                | 3.25               | 0.00            |
| 23.00           | 4.51                | 3.20               | 0.03            | 76.00           | 4.56                | 3.25               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>3.25</b>        | 0.02            | 77.00           | 4.56                | 3.25               | 0.00            |
| 25.00           | 4.56                | 3.25               | 0.00            | 78.00           | 4.56                | 3.25               | 0.00            |
| 26.00           | 4.56                | 3.25               | 0.00            | 79.00           | 4.56                | 3.25               | 0.00            |
| 27.00           | 4.56                | 3.25               | 0.00            | 80.00           | 4.56                | 3.25               | 0.00            |
| 28.00           | 4.56                | 3.25               | 0.00            | 81.00           | 4.56                | 3.25               | 0.00            |
| 29.00           | 4.56                | 3.25               | 0.00            | 82.00           | 4.56                | 3.25               | 0.00            |
| 30.00           | 4.56                | 3.25               | 0.00            | 83.00           | 4.56                | 3.25               | 0.00            |
| 31.00           | 4.56                | 3.25               | 0.00            | 84.00           | 4.56                | 3.25               | 0.00            |
| 32.00           | 4.56                | 3.25               | 0.00            | 85.00           | 4.56                | 3.25               | 0.00            |
| 33.00           | 4.56                | 3.25               | 0.00            | 86.00           | 4.56                | 3.25               | 0.00            |
| 34.00           | 4.56                | 3.25               | 0.00            | 87.00           | 4.56                | 3.25               | 0.00            |
| 35.00           | 4.56                | 3.25               | 0.00            | 88.00           | 4.56                | 3.25               | 0.00            |
| 36.00           | 4.56                | 3.25               | 0.00            | 89.00           | 4.56                | 3.25               | 0.00            |
| 37.00           | 4.56                | 3.25               | 0.00            | 90.00           | 4.56                | 3.25               | 0.00            |
| 38.00           | 4.56                | 3.25               | 0.00            | 91.00           | 4.56                | 3.25               | 0.00            |
| 39.00           | 4.56                | 3.25               | 0.00            | 92.00           | 4.56                | 3.25               | 0.00            |
| 40.00           | 4.56                | 3.25               | 0.00            | 93.00           | 4.56                | 3.25               | 0.00            |
| 41.00           | 4.56                | 3.25               | 0.00            | 94.00           | 4.56                | 3.25               | 0.00            |
| 42.00           | 4.56                | 3.25               | 0.00            | 95.00           | 4.56                | 3.25               | 0.00            |
| 43.00           | 4.56                | 3.25               | 0.00            | 96.00           | 4.56                | 3.25               | 0.00            |
| 44.00           | 4.56                | 3.25               | 0.00            | 97.00           | 4.56                | 3.25               | 0.00            |
| 45.00           | 4.56                | 3.25               | 0.00            | 98.00           | 4.56                | 3.25               | 0.00            |
| 46.00           | 4.56                | 3.25               | 0.00            | 99.00           | 4.56                | 3.25               | 0.00            |
| 47.00           | 4.56                | 3.25               | 0.00            | 100.00          | 4.56                | 3.25               | 0.00            |
| 48.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 3.25               | 0.00            |                 |                     |                    |                 |



**Summary for Subcatchment 2dS: Subcat 2d**

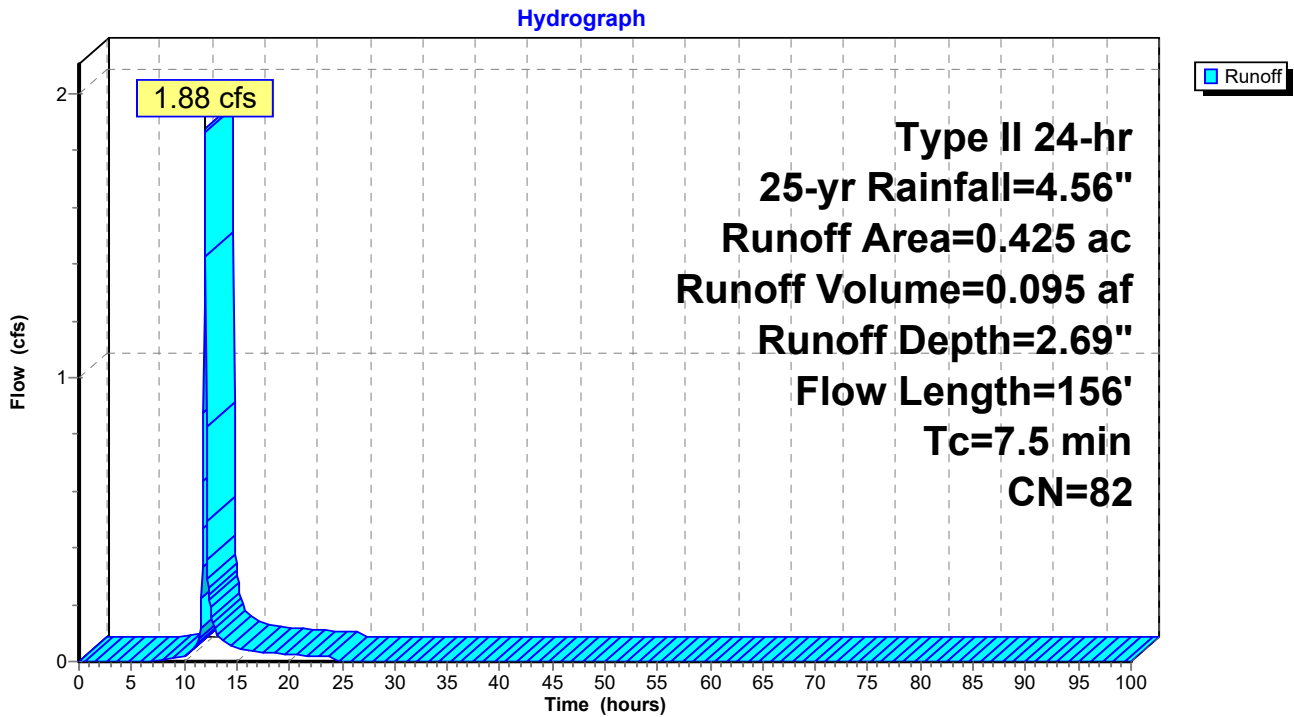
Runoff = 1.88 cfs @ 11.99 hrs, Volume= 0.095 af, Depth= 2.69"  
 Routed to Pond 2ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.089     | 78 | Meadow, non-grazed, HSG D |
| 0.160     | 71 | Meadow, non-grazed, HSG C |
| * 0.013   | 98 | Water Surface, HSG D      |
| 0.106     | 98 | Water Surface, HSG C      |
| * 0.017   | 89 | Gravel surface, HSG D     |
| * 0.040   | 89 | Gravel surface, HSG C     |
| 0.425     | 82 | Weighted Average          |
| 0.306     |    | 72.00% Pervious Area      |
| 0.119     |    | 28.00% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 7.0      | 91            | 0.0380        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.1      | 8             | 0.0420        | 1.00              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.1      | 14            | 0.0420        | 3.30              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.2      | 29            | 0.0290        | 2.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.5      | 156           | Total         |                   |                |   |

Subcatchment 2dS: Subcat 2d



**Hydrograph for Subcatchment 2dS: Subcat 2d**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.69            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.69            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.69            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.69            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.69            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.69            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.69            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 2.69            | 0.00         |
| 8.00         | 0.55             | 0.01            | 0.00         | 61.00        | 4.56             | 2.69            | 0.00         |
| 9.00         | 0.67             | 0.02            | 0.01         | 62.00        | 4.56             | 2.69            | 0.00         |
| 10.00        | 0.83             | 0.06            | 0.02         | 63.00        | 4.56             | 2.69            | 0.00         |
| 11.00        | 1.07             | 0.14            | 0.05         | 64.00        | 4.56             | 2.69            | 0.00         |
| 12.00        | 3.02             | 1.40            | <b>1.86</b>  | 65.00        | 4.56             | 2.69            | 0.00         |
| 13.00        | 3.52             | 1.80            | 0.11         | 66.00        | 4.56             | 2.69            | 0.00         |
| 14.00        | 3.74             | 1.98            | 0.06         | 67.00        | 4.56             | 2.69            | 0.00         |
| 15.00        | 3.89             | 2.11            | 0.05         | 68.00        | 4.56             | 2.69            | 0.00         |
| 16.00        | 4.01             | 2.21            | 0.04         | 69.00        | 4.56             | 2.69            | 0.00         |
| 17.00        | 4.11             | 2.30            | 0.03         | 70.00        | 4.56             | 2.69            | 0.00         |
| 18.00        | 4.20             | 2.37            | 0.03         | 71.00        | 4.56             | 2.69            | 0.00         |
| 19.00        | 4.28             | 2.44            | 0.03         | 72.00        | 4.56             | 2.69            | 0.00         |
| 20.00        | 4.34             | 2.50            | 0.02         | 73.00        | 4.56             | 2.69            | 0.00         |
| 21.00        | 4.40             | 2.55            | 0.02         | 74.00        | 4.56             | 2.69            | 0.00         |
| 22.00        | 4.46             | 2.60            | 0.02         | 75.00        | 4.56             | 2.69            | 0.00         |
| 23.00        | 4.51             | 2.64            | 0.02         | 76.00        | 4.56             | 2.69            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.69</b>     | 0.02         | 77.00        | 4.56             | 2.69            | 0.00         |
| 25.00        | 4.56             | 2.69            | 0.00         | 78.00        | 4.56             | 2.69            | 0.00         |
| 26.00        | 4.56             | 2.69            | 0.00         | 79.00        | 4.56             | 2.69            | 0.00         |
| 27.00        | 4.56             | 2.69            | 0.00         | 80.00        | 4.56             | 2.69            | 0.00         |
| 28.00        | 4.56             | 2.69            | 0.00         | 81.00        | 4.56             | 2.69            | 0.00         |
| 29.00        | 4.56             | 2.69            | 0.00         | 82.00        | 4.56             | 2.69            | 0.00         |
| 30.00        | 4.56             | 2.69            | 0.00         | 83.00        | 4.56             | 2.69            | 0.00         |
| 31.00        | 4.56             | 2.69            | 0.00         | 84.00        | 4.56             | 2.69            | 0.00         |
| 32.00        | 4.56             | 2.69            | 0.00         | 85.00        | 4.56             | 2.69            | 0.00         |
| 33.00        | 4.56             | 2.69            | 0.00         | 86.00        | 4.56             | 2.69            | 0.00         |
| 34.00        | 4.56             | 2.69            | 0.00         | 87.00        | 4.56             | 2.69            | 0.00         |
| 35.00        | 4.56             | 2.69            | 0.00         | 88.00        | 4.56             | 2.69            | 0.00         |
| 36.00        | 4.56             | 2.69            | 0.00         | 89.00        | 4.56             | 2.69            | 0.00         |
| 37.00        | 4.56             | 2.69            | 0.00         | 90.00        | 4.56             | 2.69            | 0.00         |
| 38.00        | 4.56             | 2.69            | 0.00         | 91.00        | 4.56             | 2.69            | 0.00         |
| 39.00        | 4.56             | 2.69            | 0.00         | 92.00        | 4.56             | 2.69            | 0.00         |
| 40.00        | 4.56             | 2.69            | 0.00         | 93.00        | 4.56             | 2.69            | 0.00         |
| 41.00        | 4.56             | 2.69            | 0.00         | 94.00        | 4.56             | 2.69            | 0.00         |
| 42.00        | 4.56             | 2.69            | 0.00         | 95.00        | 4.56             | 2.69            | 0.00         |
| 43.00        | 4.56             | 2.69            | 0.00         | 96.00        | 4.56             | 2.69            | 0.00         |
| 44.00        | 4.56             | 2.69            | 0.00         | 97.00        | 4.56             | 2.69            | 0.00         |
| 45.00        | 4.56             | 2.69            | 0.00         | 98.00        | 4.56             | 2.69            | 0.00         |
| 46.00        | 4.56             | 2.69            | 0.00         | 99.00        | 4.56             | 2.69            | 0.00         |
| 47.00        | 4.56             | 2.69            | 0.00         | 100.00       | 4.56             | 2.69            | 0.00         |
| 48.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.69            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2eS: Subcat 2e**

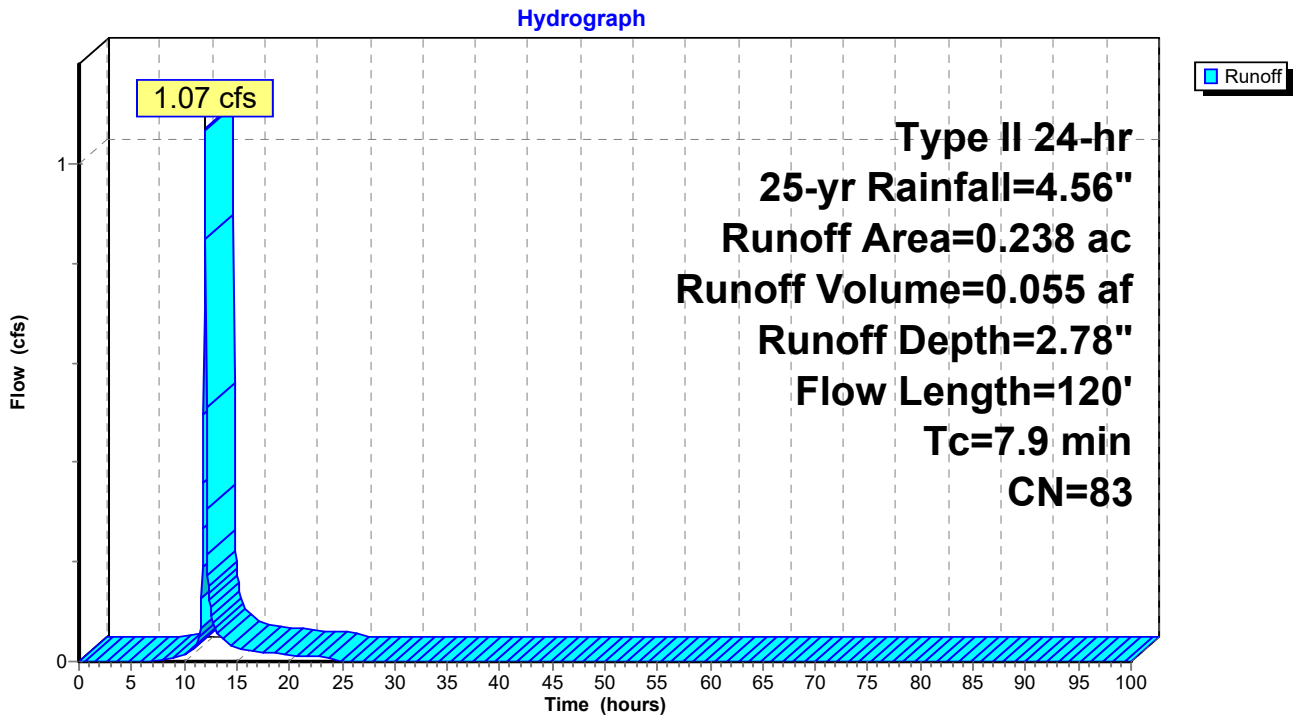
Runoff = 1.07 cfs @ 11.99 hrs, Volume= 0.055 af, Depth= 2.78"  
 Routed to Reach 5R : Proposed RRv Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.175     | 78 | Meadow, non-grazed, HSG D |
| * 0.063   | 98 | Paved parking, HSG D      |
| 0.238     | 83 | Weighted Average          |
| 0.175     |    | 73.53% Pervious Area      |
| 0.063     |    | 26.47% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 2.3      | 17            | 0.0286        | 0.12              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.9      | 11            | 0.0201        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.4      | 25            | 0.0200        | 0.94              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.9      | 52            | 0.0192        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 15            | 0.0194        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 7.9      | 120           | Total         |                   |                |   |

Subcatchment 2eS: Subcat 2e



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2eS: Subcat 2e**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 2.78               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 2.78               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 2.78               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 2.78               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 2.78               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 2.78               | 0.00            |
| 6.00            | 0.36                | 0.00               | 0.00            | 59.00           | 4.56                | 2.78               | 0.00            |
| 7.00            | 0.45                | 0.00               | 0.00            | 60.00           | 4.56                | 2.78               | 0.00            |
| 8.00            | 0.55                | 0.01               | 0.00            | 61.00           | 4.56                | 2.78               | 0.00            |
| 9.00            | 0.67                | 0.03               | 0.01            | 62.00           | 4.56                | 2.78               | 0.00            |
| 10.00           | 0.83                | 0.07               | 0.01            | 63.00           | 4.56                | 2.78               | 0.00            |
| 11.00           | 1.07                | 0.16               | 0.03            | 64.00           | 4.56                | 2.78               | 0.00            |
| 12.00           | 3.02                | 1.47               | <b>1.07</b>     | 65.00           | 4.56                | 2.78               | 0.00            |
| 13.00           | 3.52                | 1.88               | 0.06            | 66.00           | 4.56                | 2.78               | 0.00            |
| 14.00           | 3.74                | 2.06               | 0.04            | 67.00           | 4.56                | 2.78               | 0.00            |
| 15.00           | 3.89                | 2.19               | 0.03            | 68.00           | 4.56                | 2.78               | 0.00            |
| 16.00           | 4.01                | 2.30               | 0.02            | 69.00           | 4.56                | 2.78               | 0.00            |
| 17.00           | 4.11                | 2.38               | 0.02            | 70.00           | 4.56                | 2.78               | 0.00            |
| 18.00           | 4.20                | 2.46               | 0.02            | 71.00           | 4.56                | 2.78               | 0.00            |
| 19.00           | 4.28                | 2.53               | 0.02            | 72.00           | 4.56                | 2.78               | 0.00            |
| 20.00           | 4.34                | 2.58               | 0.01            | 73.00           | 4.56                | 2.78               | 0.00            |
| 21.00           | 4.40                | 2.64               | 0.01            | 74.00           | 4.56                | 2.78               | 0.00            |
| 22.00           | 4.46                | 2.69               | 0.01            | 75.00           | 4.56                | 2.78               | 0.00            |
| 23.00           | 4.51                | 2.73               | 0.01            | 76.00           | 4.56                | 2.78               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>2.78</b>        | 0.01            | 77.00           | 4.56                | 2.78               | 0.00            |
| 25.00           | 4.56                | 2.78               | 0.00            | 78.00           | 4.56                | 2.78               | 0.00            |
| 26.00           | 4.56                | 2.78               | 0.00            | 79.00           | 4.56                | 2.78               | 0.00            |
| 27.00           | 4.56                | 2.78               | 0.00            | 80.00           | 4.56                | 2.78               | 0.00            |
| 28.00           | 4.56                | 2.78               | 0.00            | 81.00           | 4.56                | 2.78               | 0.00            |
| 29.00           | 4.56                | 2.78               | 0.00            | 82.00           | 4.56                | 2.78               | 0.00            |
| 30.00           | 4.56                | 2.78               | 0.00            | 83.00           | 4.56                | 2.78               | 0.00            |
| 31.00           | 4.56                | 2.78               | 0.00            | 84.00           | 4.56                | 2.78               | 0.00            |
| 32.00           | 4.56                | 2.78               | 0.00            | 85.00           | 4.56                | 2.78               | 0.00            |
| 33.00           | 4.56                | 2.78               | 0.00            | 86.00           | 4.56                | 2.78               | 0.00            |
| 34.00           | 4.56                | 2.78               | 0.00            | 87.00           | 4.56                | 2.78               | 0.00            |
| 35.00           | 4.56                | 2.78               | 0.00            | 88.00           | 4.56                | 2.78               | 0.00            |
| 36.00           | 4.56                | 2.78               | 0.00            | 89.00           | 4.56                | 2.78               | 0.00            |
| 37.00           | 4.56                | 2.78               | 0.00            | 90.00           | 4.56                | 2.78               | 0.00            |
| 38.00           | 4.56                | 2.78               | 0.00            | 91.00           | 4.56                | 2.78               | 0.00            |
| 39.00           | 4.56                | 2.78               | 0.00            | 92.00           | 4.56                | 2.78               | 0.00            |
| 40.00           | 4.56                | 2.78               | 0.00            | 93.00           | 4.56                | 2.78               | 0.00            |
| 41.00           | 4.56                | 2.78               | 0.00            | 94.00           | 4.56                | 2.78               | 0.00            |
| 42.00           | 4.56                | 2.78               | 0.00            | 95.00           | 4.56                | 2.78               | 0.00            |
| 43.00           | 4.56                | 2.78               | 0.00            | 96.00           | 4.56                | 2.78               | 0.00            |
| 44.00           | 4.56                | 2.78               | 0.00            | 97.00           | 4.56                | 2.78               | 0.00            |
| 45.00           | 4.56                | 2.78               | 0.00            | 98.00           | 4.56                | 2.78               | 0.00            |
| 46.00           | 4.56                | 2.78               | 0.00            | 99.00           | 4.56                | 2.78               | 0.00            |
| 47.00           | 4.56                | 2.78               | 0.00            | 100.00          | 4.56                | 2.78               | 0.00            |
| 48.00           | 4.56                | 2.78               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 2.78               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 2.78               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 2.78               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 2.78               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.14 cfs @ 11.97 hrs, Volume= 0.007 af, Depth= 2.60"  
 Routed to Link AP2 : Analysis Point 2

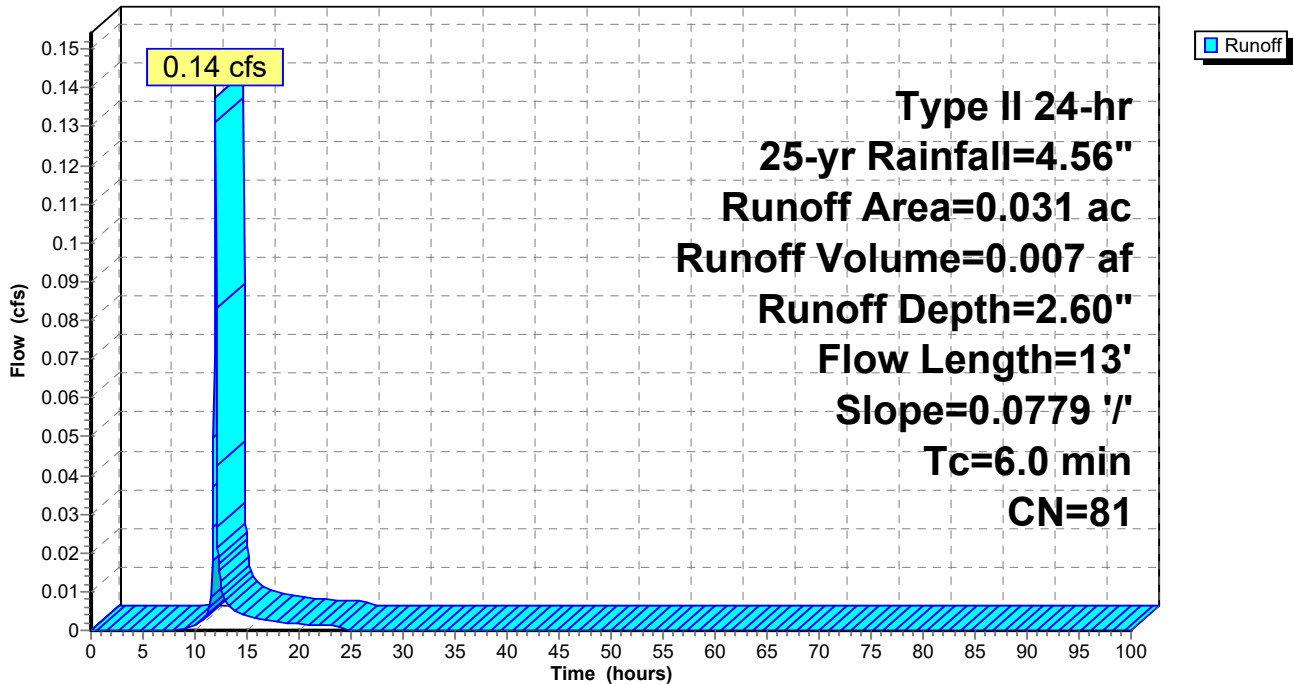
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.001     | 98 | Paved roads w/curbs & sewers, HSG D |
| 0.030     | 80 | >75% Grass cover, Good, HSG D       |
| 0.031     | 81 | Weighted Average                    |
| 0.030     |    | 96.77% Pervious Area                |
| 0.001     |    | 3.23% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.2      | 13            | 0.0779                                   | 0.18              |                | Sheet Flow, Hydro Flow<br>Grass: Short n= 0.150 P2= 2.59" |
| 1.2      | 13            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**Hydrograph for Subcatchment 3S: Subcat 3**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.60            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.60            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.60            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.60            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.60            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.60            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.60            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 2.60            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 2.60            | 0.00         |
| 9.00         | 0.67             | 0.02            | 0.00         | 62.00        | 4.56             | 2.60            | 0.00         |
| 10.00        | 0.83             | 0.05            | 0.00         | 63.00        | 4.56             | 2.60            | 0.00         |
| 11.00        | 1.07             | 0.12            | <b>0.00</b>  | 64.00        | 4.56             | 2.60            | 0.00         |
| 12.00        | 3.02             | 1.33            | <b>0.13</b>  | 65.00        | 4.56             | 2.60            | 0.00         |
| 13.00        | 3.52             | 1.73            | 0.01         | 66.00        | 4.56             | 2.60            | 0.00         |
| 14.00        | 3.74             | 1.90            | 0.00         | 67.00        | 4.56             | 2.60            | 0.00         |
| 15.00        | 3.89             | 2.03            | 0.00         | 68.00        | 4.56             | 2.60            | 0.00         |
| 16.00        | 4.01             | 2.13            | 0.00         | 69.00        | 4.56             | 2.60            | 0.00         |
| 17.00        | 4.11             | 2.22            | 0.00         | 70.00        | 4.56             | 2.60            | 0.00         |
| 18.00        | 4.20             | 2.29            | 0.00         | 71.00        | 4.56             | 2.60            | 0.00         |
| 19.00        | 4.28             | 2.36            | 0.00         | 72.00        | 4.56             | 2.60            | 0.00         |
| 20.00        | 4.34             | 2.41            | 0.00         | 73.00        | 4.56             | 2.60            | 0.00         |
| 21.00        | 4.40             | 2.46            | 0.00         | 74.00        | 4.56             | 2.60            | 0.00         |
| 22.00        | 4.46             | 2.51            | 0.00         | 75.00        | 4.56             | 2.60            | 0.00         |
| 23.00        | 4.51             | 2.56            | 0.00         | 76.00        | 4.56             | 2.60            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.60</b>     | 0.00         | 77.00        | 4.56             | 2.60            | 0.00         |
| 25.00        | 4.56             | 2.60            | 0.00         | 78.00        | 4.56             | 2.60            | 0.00         |
| 26.00        | 4.56             | 2.60            | 0.00         | 79.00        | 4.56             | 2.60            | 0.00         |
| 27.00        | 4.56             | 2.60            | 0.00         | 80.00        | 4.56             | 2.60            | 0.00         |
| 28.00        | 4.56             | 2.60            | 0.00         | 81.00        | 4.56             | 2.60            | 0.00         |
| 29.00        | 4.56             | 2.60            | 0.00         | 82.00        | 4.56             | 2.60            | 0.00         |
| 30.00        | 4.56             | 2.60            | 0.00         | 83.00        | 4.56             | 2.60            | 0.00         |
| 31.00        | 4.56             | 2.60            | 0.00         | 84.00        | 4.56             | 2.60            | 0.00         |
| 32.00        | 4.56             | 2.60            | 0.00         | 85.00        | 4.56             | 2.60            | 0.00         |
| 33.00        | 4.56             | 2.60            | 0.00         | 86.00        | 4.56             | 2.60            | 0.00         |
| 34.00        | 4.56             | 2.60            | 0.00         | 87.00        | 4.56             | 2.60            | 0.00         |
| 35.00        | 4.56             | 2.60            | 0.00         | 88.00        | 4.56             | 2.60            | 0.00         |
| 36.00        | 4.56             | 2.60            | 0.00         | 89.00        | 4.56             | 2.60            | 0.00         |
| 37.00        | 4.56             | 2.60            | 0.00         | 90.00        | 4.56             | 2.60            | 0.00         |
| 38.00        | 4.56             | 2.60            | 0.00         | 91.00        | 4.56             | 2.60            | 0.00         |
| 39.00        | 4.56             | 2.60            | 0.00         | 92.00        | 4.56             | 2.60            | 0.00         |
| 40.00        | 4.56             | 2.60            | 0.00         | 93.00        | 4.56             | 2.60            | 0.00         |
| 41.00        | 4.56             | 2.60            | 0.00         | 94.00        | 4.56             | 2.60            | 0.00         |
| 42.00        | 4.56             | 2.60            | 0.00         | 95.00        | 4.56             | 2.60            | 0.00         |
| 43.00        | 4.56             | 2.60            | 0.00         | 96.00        | 4.56             | 2.60            | 0.00         |
| 44.00        | 4.56             | 2.60            | 0.00         | 97.00        | 4.56             | 2.60            | 0.00         |
| 45.00        | 4.56             | 2.60            | 0.00         | 98.00        | 4.56             | 2.60            | 0.00         |
| 46.00        | 4.56             | 2.60            | 0.00         | 99.00        | 4.56             | 2.60            | 0.00         |
| 47.00        | 4.56             | 2.60            | 0.00         | 100.00       | 4.56             | 2.60            | 0.00         |
| 48.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.60            | 0.00         |              |                  |                 |              |



**Summary for Reach 1R: Existing Swale**

Inflow Area = 3.372 ac, 8.66% Impervious, Inflow Depth = 0.31" for 25-yr event  
 Inflow = 0.77 cfs @ 11.97 hrs, Volume= 0.087 af  
 Outflow = 0.74 cfs @ 12.00 hrs, Volume= 0.087 af, Atten= 3%, Lag= 1.4 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.84 fps, Min. Travel Time= 2.2 min  
 Avg. Velocity = 0.51 fps, Avg. Travel Time= 8.0 min

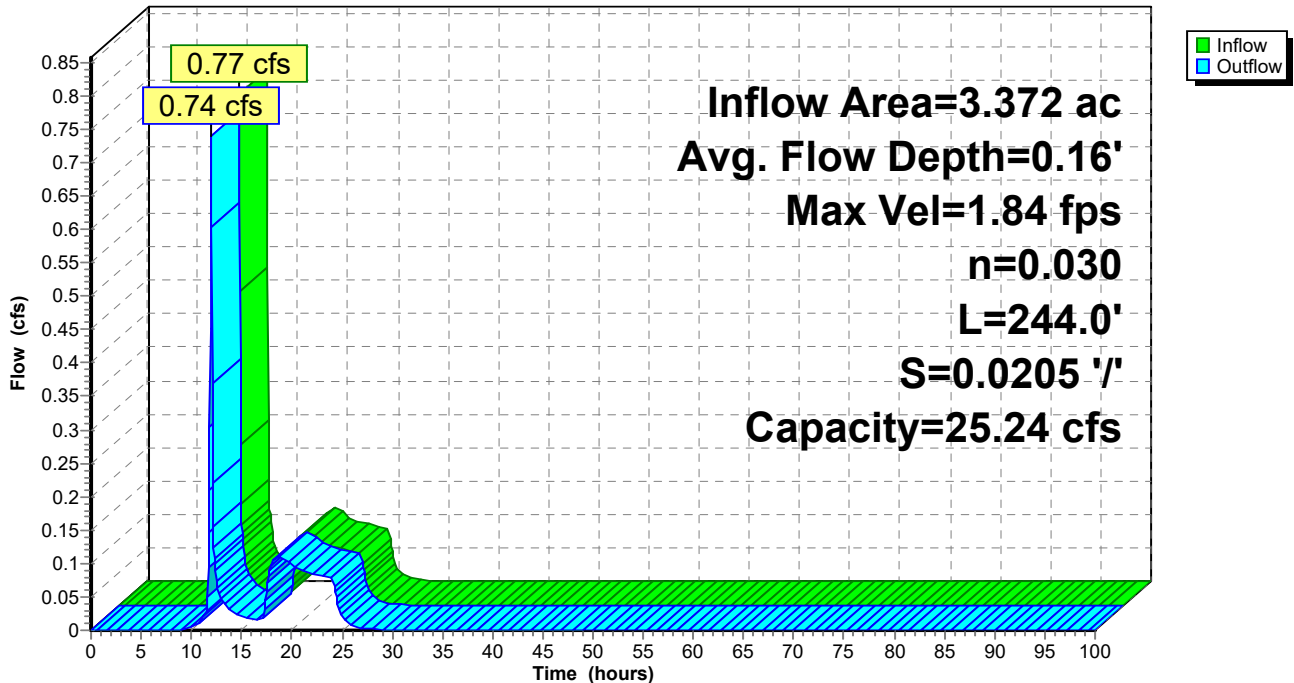
Peak Storage= 98 cf @ 12.00 hrs  
 Average Depth at Peak Storage= 0.16' , Surface Width= 2.97'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 '/  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

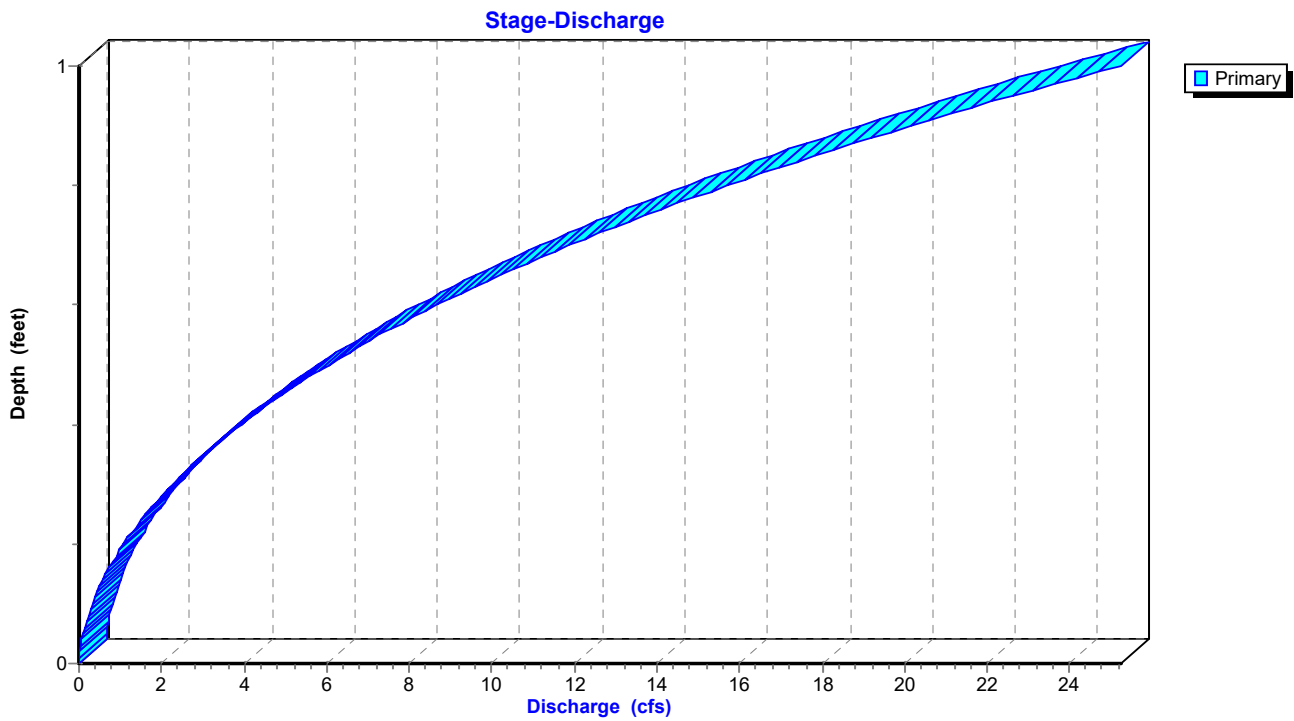


**Reach 1R: Existing Swale**

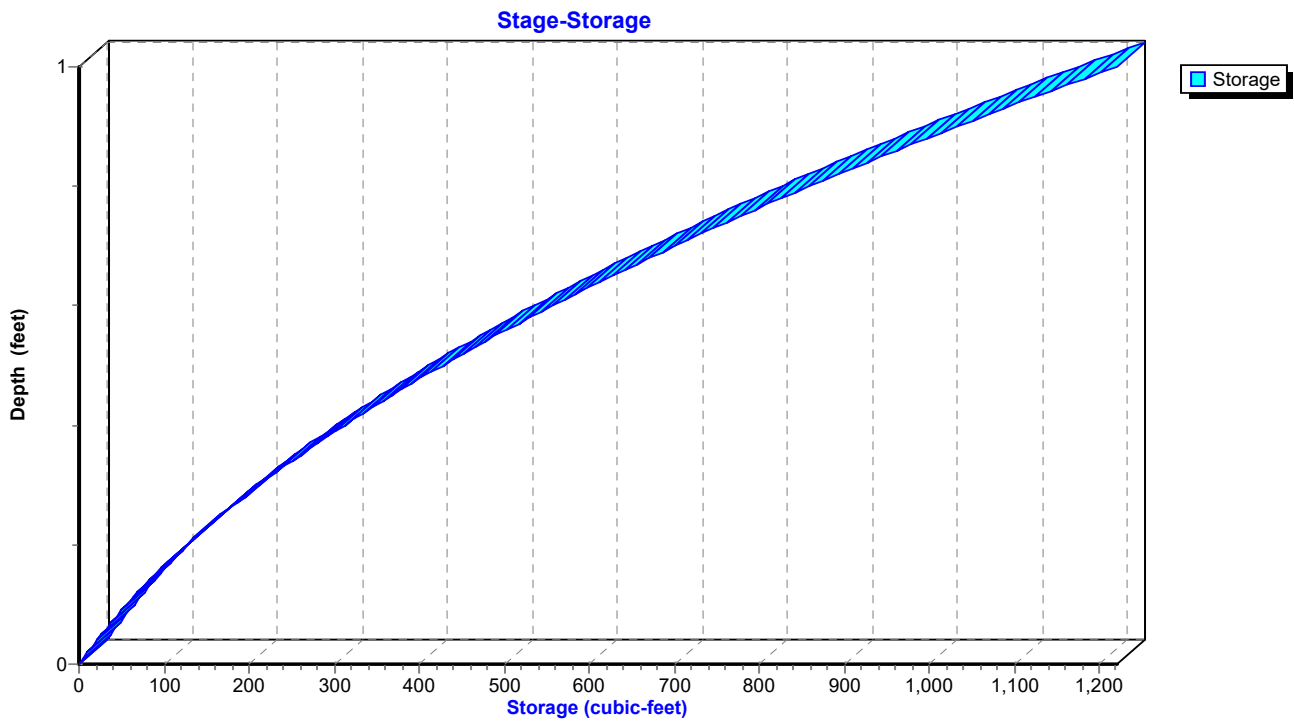
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>3</b>             | <b>316.01</b>    | <b>0.00</b>   |
| 12.50        | <b>0.07</b>  | <b>22</b>            | <b>316.04</b>    | <b>0.08</b>   |
| 15.00        | 0.02         | 10                   | 316.02           | 0.02          |
| 17.50        | 0.06         | 18                   | 316.04           | 0.06          |
| 20.00        | 0.10         | 26                   | 316.05           | 0.10          |
| 22.50        | 0.08         | 24                   | 316.05           | 0.08          |
| 25.00        | 0.02         | 10                   | 316.02           | 0.02          |
| 27.50        | 0.00         | 2                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Reach 2R: Proposed RRv Swale**

Inflow Area = 0.830 ac, 18.55% Impervious, Inflow Depth = 2.69" for 25-yr event  
 Inflow = 3.76 cfs @ 11.98 hrs, Volume= 0.186 af  
 Outflow = 3.17 cfs @ 12.03 hrs, Volume= 0.186 af, Atten= 16%, Lag= 2.8 min  
 Routed to Pond 3P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.27 fps, Min. Travel Time= 5.1 min  
 Avg. Velocity = 0.32 fps, Avg. Travel Time= 20.6 min

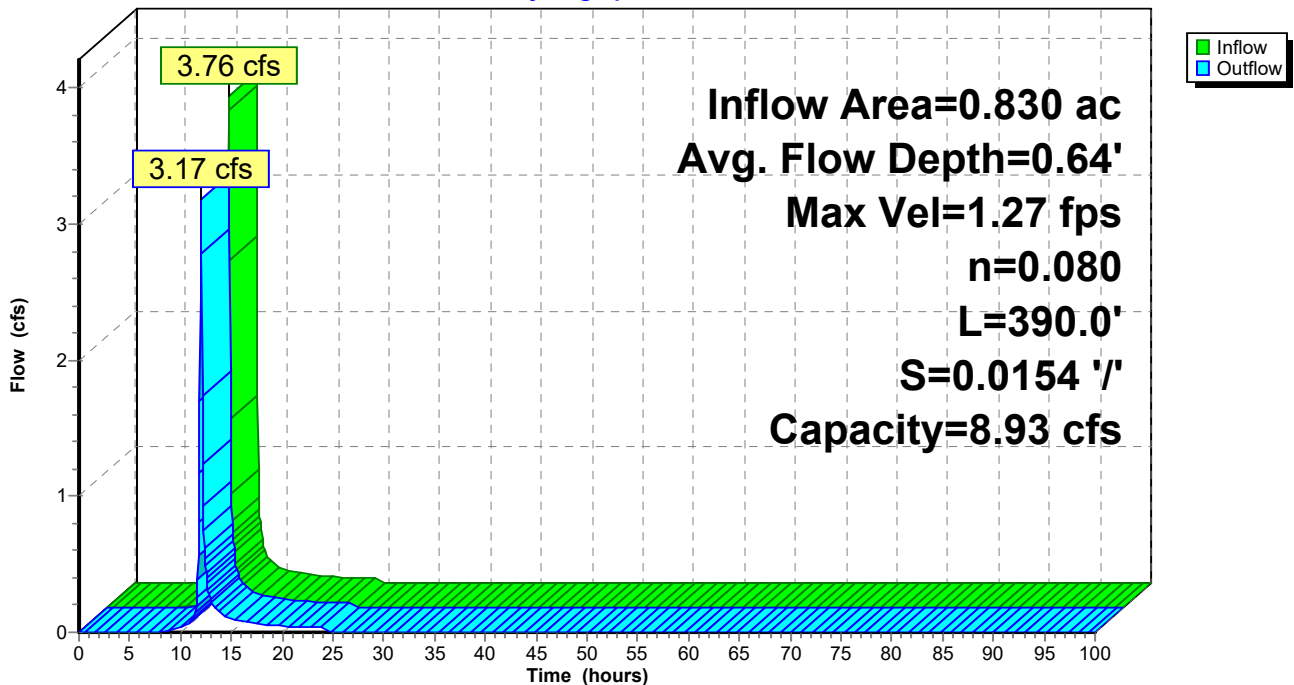
Peak Storage= 970 cf @ 12.03 hrs  
 Average Depth at Peak Storage= 0.64' , Surface Width= 5.82'  
 Bank-Full Depth= 1.04' Flow Area= 5.3 sf, Capacity= 8.93 cfs

2.00' x 1.04' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 8.24'  
 Length= 390.0' Slope= 0.0154 '/  
 Inlet Invert= 318.00', Outlet Invert= 312.00'

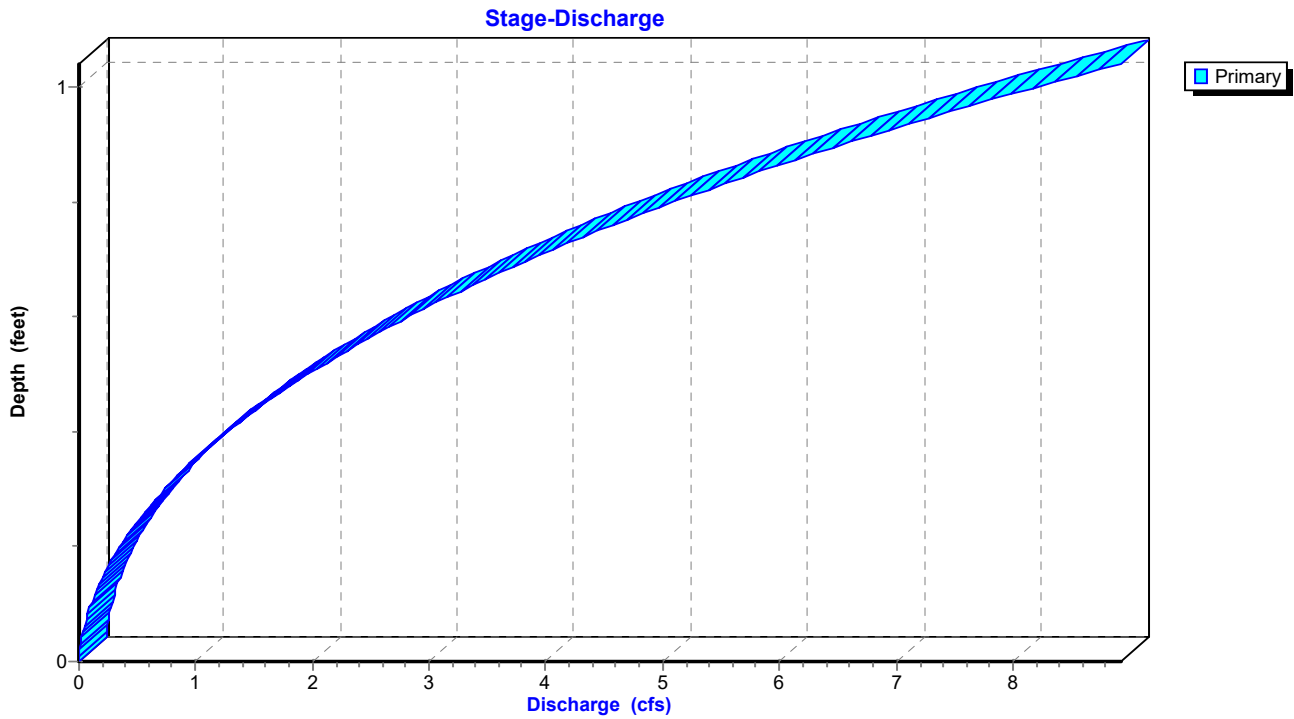


**Reach 2R: Proposed RRv Swale**

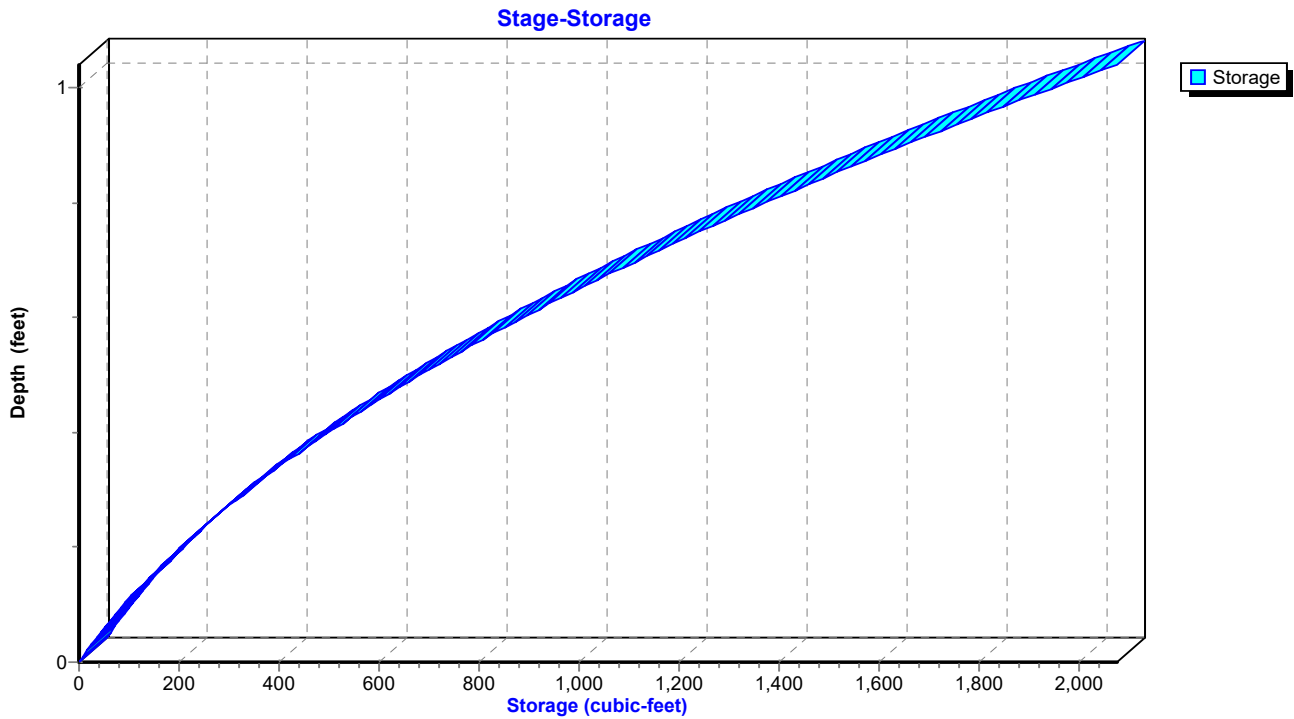
Hydrograph



### Reach 2R: Proposed RRv Swale



### Reach 2R: Proposed RRv Swale



**Hydrograph for Reach 2R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 7.50         | 0.00         | 3                    | 318.00           | 0.00          |
| 10.00        | <b>0.04</b>  | <b>43</b>            | <b>318.05</b>    | <b>0.03</b>   |
| 12.50        | <b>0.34</b>  | <b>234</b>           | <b>318.22</b>    | <b>0.43</b>   |
| 15.00        | 0.10         | 89                   | 318.10           | 0.10          |
| 17.50        | 0.06         | 66                   | 318.08           | 0.07          |
| 20.00        | 0.04         | 53                   | 318.06           | 0.05          |
| 22.50        | 0.04         | 48                   | 318.06           | 0.04          |
| 25.00        | 0.00         | 9                    | 318.01           | 0.00          |
| 27.50        | 0.00         | 1                    | 318.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 318.00           | 0.00          |



**Stage-Discharge for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 318.00              | 0.00                 | 0.00               | 318.53              | 1.16                 | 2.20               |
| 318.01              | 0.10                 | 0.00               | 318.54              | 1.17                 | 2.28               |
| 318.02              | 0.17                 | 0.01               | 318.55              | 1.18                 | 2.37               |
| 318.03              | 0.22                 | 0.01               | 318.56              | 1.19                 | 2.46               |
| 318.04              | 0.26                 | 0.02               | 318.57              | 1.20                 | 2.54               |
| 318.05              | 0.30                 | 0.03               | 318.58              | 1.21                 | 2.63               |
| 318.06              | 0.33                 | 0.04               | 318.59              | 1.23                 | 2.73               |
| 318.07              | 0.37                 | 0.06               | 318.60              | 1.24                 | 2.82               |
| 318.08              | 0.40                 | 0.07               | 318.61              | 1.25                 | 2.92               |
| 318.09              | 0.43                 | 0.09               | 318.62              | 1.26                 | 3.01               |
| 318.10              | 0.45                 | 0.10               | 318.63              | 1.27                 | 3.11               |
| 318.11              | 0.48                 | 0.12               | 318.64              | 1.28                 | 3.22               |
| 318.12              | 0.50                 | 0.14               | 318.65              | 1.29                 | 3.32               |
| 318.13              | 0.53                 | 0.16               | 318.66              | 1.30                 | 3.42               |
| 318.14              | 0.55                 | 0.19               | 318.67              | 1.31                 | 3.53               |
| 318.15              | 0.57                 | 0.21               | 318.68              | 1.32                 | 3.64               |
| 318.16              | 0.60                 | 0.24               | 318.69              | 1.34                 | 3.75               |
| 318.17              | 0.62                 | 0.26               | 318.70              | 1.35                 | 3.86               |
| 318.18              | 0.64                 | 0.29               | 318.71              | 1.36                 | 3.98               |
| 318.19              | 0.66                 | 0.32               | 318.72              | 1.37                 | 4.09               |
| 318.20              | 0.68                 | 0.35               | 318.73              | 1.38                 | 4.21               |
| 318.21              | 0.70                 | 0.38               | 318.74              | 1.39                 | 4.33               |
| 318.22              | 0.71                 | 0.42               | 318.75              | 1.40                 | 4.46               |
| 318.23              | 0.73                 | 0.45               | 318.76              | 1.41                 | 4.58               |
| 318.24              | 0.75                 | 0.49               | 318.77              | 1.42                 | 4.71               |
| 318.25              | 0.77                 | 0.53               | 318.78              | 1.43                 | 4.84               |
| 318.26              | 0.78                 | 0.57               | 318.79              | 1.44                 | 4.97               |
| 318.27              | 0.80                 | 0.61               | 318.80              | 1.45                 | 5.10               |
| 318.28              | 0.82                 | 0.65               | 318.81              | 1.46                 | 5.23               |
| 318.29              | 0.83                 | 0.69               | 318.82              | 1.47                 | 5.37               |
| 318.30              | 0.85                 | 0.74               | 318.83              | 1.48                 | 5.51               |
| 318.31              | 0.86                 | 0.78               | 318.84              | 1.49                 | 5.65               |
| 318.32              | 0.88                 | 0.83               | 318.85              | 1.50                 | 5.79               |
| 318.33              | 0.89                 | 0.88               | 318.86              | 1.51                 | 5.94               |
| 318.34              | 0.91                 | 0.93               | 318.87              | 1.52                 | 6.09               |
| 318.35              | 0.92                 | 0.98               | 318.88              | 1.53                 | 6.24               |
| 318.36              | 0.94                 | 1.04               | 318.89              | 1.54                 | 6.39               |
| 318.37              | 0.95                 | 1.09               | 318.90              | 1.55                 | 6.54               |
| 318.38              | 0.96                 | 1.15               | 318.91              | 1.56                 | 6.70               |
| 318.39              | 0.98                 | 1.21               | 318.92              | 1.57                 | 6.86               |
| 318.40              | 0.99                 | 1.27               | 318.93              | 1.57                 | 7.02               |
| 318.41              | 1.01                 | 1.33               | 318.94              | 1.58                 | 7.18               |
| 318.42              | 1.02                 | 1.40               | 318.95              | 1.59                 | 7.34               |
| 318.43              | 1.03                 | 1.46               | 318.96              | 1.60                 | 7.51               |
| 318.44              | 1.04                 | 1.53               | 318.97              | 1.61                 | 7.68               |
| 318.45              | 1.06                 | 1.59               | 318.98              | 1.62                 | 7.85               |
| 318.46              | 1.07                 | 1.66               | 318.99              | 1.63                 | 8.02               |
| 318.47              | 1.08                 | 1.74               | 319.00              | 1.64                 | 8.20               |
| 318.48              | 1.10                 | 1.81               | 319.01              | 1.65                 | 8.38               |
| 318.49              | 1.11                 | 1.88               | 319.02              | 1.66                 | 8.56               |
| 318.50              | 1.12                 | 1.96               | 319.03              | 1.67                 | 8.74               |
| 318.51              | 1.13                 | 2.04               | 319.04              | <b>1.68</b>          | <b>8.93</b>        |
| 318.52              | 1.14                 | 2.12               |                     |                      |                    |

**Stage-Area-Storage for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 318.00              | 0.0                 | 0                       | 318.53              | 1.9                 | 742                     |
| 318.01              | 0.0                 | 8                       | 318.54              | 2.0                 | 762                     |
| 318.02              | 0.0                 | 16                      | 318.55              | 2.0                 | 783                     |
| 318.03              | 0.1                 | 24                      | 318.56              | 2.1                 | 804                     |
| 318.04              | 0.1                 | 33                      | 318.57              | 2.1                 | 825                     |
| 318.05              | 0.1                 | 42                      | 318.58              | 2.2                 | 846                     |
| 318.06              | 0.1                 | 51                      | 318.59              | 2.2                 | 868                     |
| 318.07              | 0.2                 | 60                      | 318.60              | 2.3                 | 889                     |
| 318.08              | 0.2                 | 70                      | 318.61              | 2.3                 | 911                     |
| 318.09              | 0.2                 | 80                      | 318.62              | 2.4                 | 933                     |
| 318.10              | 0.2                 | 90                      | 318.63              | 2.5                 | 956                     |
| 318.11              | 0.3                 | 100                     | 318.64              | 2.5                 | 978                     |
| 318.12              | 0.3                 | 110                     | 318.65              | 2.6                 | 1,001                   |
| 318.13              | 0.3                 | 121                     | 318.66              | 2.6                 | 1,024                   |
| 318.14              | 0.3                 | 132                     | 318.67              | 2.7                 | 1,048                   |
| 318.15              | 0.4                 | 143                     | 318.68              | 2.7                 | 1,071                   |
| 318.16              | 0.4                 | 155                     | 318.69              | 2.8                 | 1,095                   |
| 318.17              | 0.4                 | 166                     | 318.70              | 2.9                 | 1,119                   |
| 318.18              | 0.5                 | 178                     | 318.71              | 2.9                 | 1,144                   |
| 318.19              | 0.5                 | 190                     | 318.72              | 3.0                 | 1,168                   |
| 318.20              | 0.5                 | 203                     | 318.73              | 3.1                 | 1,193                   |
| 318.21              | 0.6                 | 215                     | 318.74              | 3.1                 | 1,218                   |
| 318.22              | 0.6                 | 228                     | 318.75              | 3.2                 | 1,243                   |
| 318.23              | 0.6                 | 241                     | 318.76              | 3.3                 | 1,269                   |
| 318.24              | 0.7                 | 255                     | 318.77              | 3.3                 | 1,294                   |
| 318.25              | 0.7                 | 268                     | 318.78              | 3.4                 | 1,320                   |
| 318.26              | 0.7                 | 282                     | 318.79              | 3.5                 | 1,346                   |
| 318.27              | 0.8                 | 296                     | 318.80              | 3.5                 | 1,373                   |
| 318.28              | 0.8                 | 310                     | 318.81              | 3.6                 | 1,399                   |
| 318.29              | 0.8                 | 325                     | 318.82              | 3.7                 | 1,426                   |
| 318.30              | 0.9                 | 339                     | 318.83              | 3.7                 | 1,453                   |
| 318.31              | 0.9                 | 354                     | 318.84              | 3.8                 | 1,481                   |
| 318.32              | 0.9                 | 369                     | 318.85              | 3.9                 | 1,508                   |
| 318.33              | 1.0                 | 385                     | 318.86              | 3.9                 | 1,536                   |
| 318.34              | 1.0                 | 400                     | 318.87              | 4.0                 | 1,564                   |
| 318.35              | 1.1                 | 416                     | 318.88              | 4.1                 | 1,592                   |
| 318.36              | 1.1                 | 432                     | 318.89              | 4.2                 | 1,621                   |
| 318.37              | 1.2                 | 449                     | 318.90              | 4.2                 | 1,650                   |
| 318.38              | 1.2                 | 465                     | 318.91              | 4.3                 | 1,679                   |
| 318.39              | 1.2                 | 482                     | 318.92              | 4.4                 | 1,708                   |
| 318.40              | 1.3                 | 499                     | 318.93              | 4.5                 | 1,737                   |
| 318.41              | 1.3                 | 517                     | 318.94              | 4.5                 | 1,767                   |
| 318.42              | 1.4                 | 534                     | 318.95              | 4.6                 | 1,797                   |
| 318.43              | 1.4                 | 552                     | 318.96              | 4.7                 | 1,827                   |
| 318.44              | 1.5                 | 570                     | 318.97              | 4.8                 | 1,857                   |
| 318.45              | 1.5                 | 588                     | 318.98              | 4.8                 | 1,888                   |
| 318.46              | 1.6                 | 606                     | 318.99              | 4.9                 | 1,919                   |
| 318.47              | 1.6                 | 625                     | 319.00              | 5.0                 | 1,950                   |
| 318.48              | 1.7                 | 644                     | 319.01              | 5.1                 | 1,981                   |
| 318.49              | 1.7                 | 663                     | 319.02              | 5.2                 | 2,013                   |
| 318.50              | 1.8                 | 683                     | 319.03              | 5.2                 | 2,045                   |
| 318.51              | 1.8                 | 702                     | 319.04              | <b>5.3</b>          | <b>2,077</b>            |
| 318.52              | 1.9                 | 722                     |                     |                     |                         |

### Summary for Reach 3R: Proposed RRv Swale

[63] Warning: Exceeded Reach 4R INLET depth by 0.13' @ 12.00 hrs

Inflow Area = 0.744 ac, 40.73% Impervious, Inflow Depth = 3.10" for 25-yr event  
Inflow = 3.67 cfs @ 11.98 hrs, Volume= 0.192 af  
Outflow = 3.57 cfs @ 12.00 hrs, Volume= 0.192 af, Atten= 3%, Lag= 1.2 min  
Routed to Pond 3P : Proposed Stormwater Pond

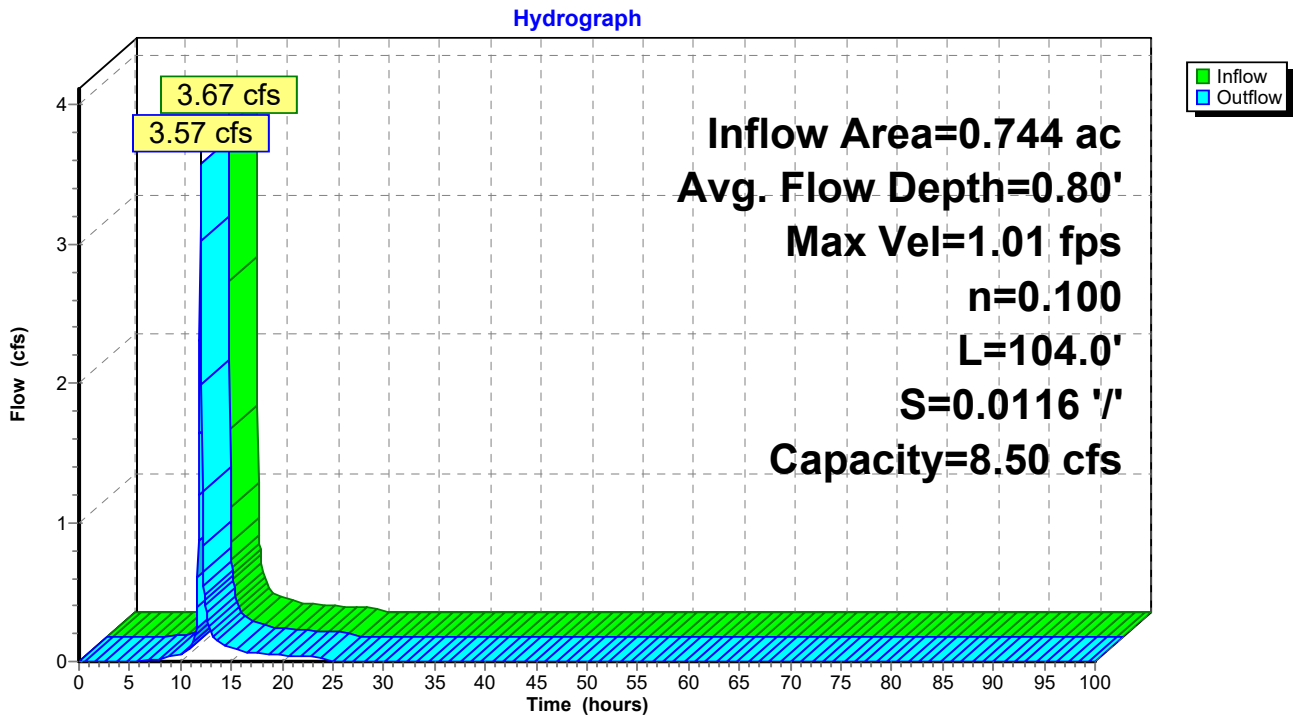
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 1.01 fps, Min. Travel Time= 1.7 min  
Avg. Velocity = 0.27 fps, Avg. Travel Time= 6.5 min

Peak Storage= 368 cf @ 12.00 hrs  
Average Depth at Peak Storage= 0.80' , Surface Width= 6.82'  
Bank-Full Depth= 1.20' Flow Area= 6.7 sf, Capacity= 8.50 cfs

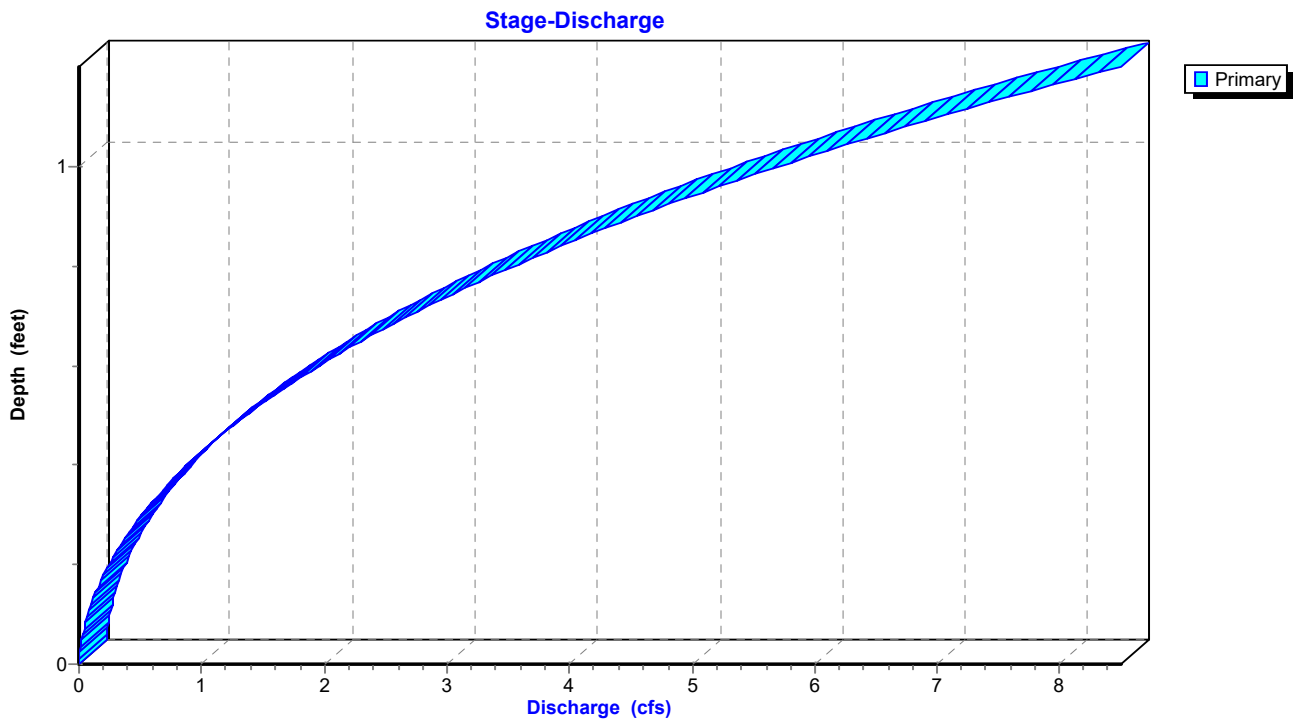
2.00' x 1.20' deep channel, n= 0.100 Earth, dense brush, high stage  
Side Slope Z-value= 3.0 '/' Top Width= 9.20'  
Length= 104.0' Slope= 0.0116 '/'  
Inlet Invert= 312.21', Outlet Invert= 311.00'



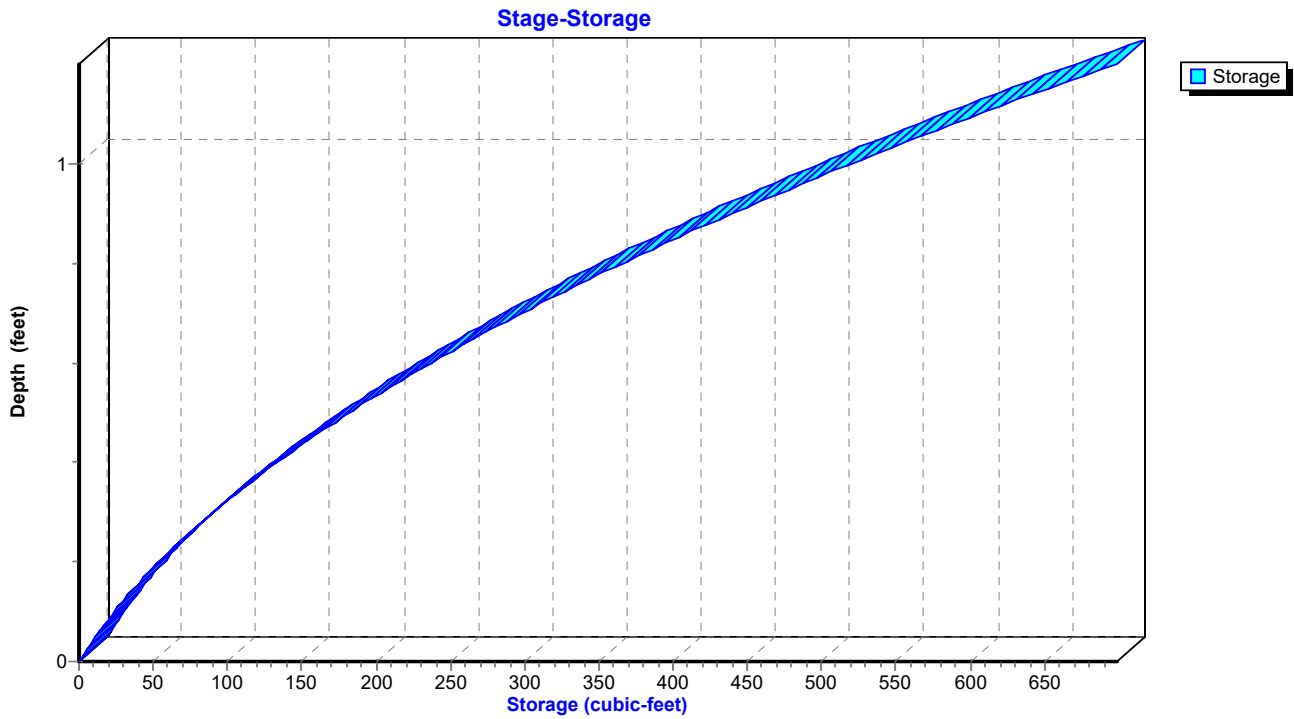
Reach 3R: Proposed RRv Swale



Reach 3R: Proposed RRv Swale



### Reach 3R: Proposed RRv Swale



**Hydrograph for Reach 3R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 7.50         | 0.01         | 8                    | 312.25           | 0.01          |
| 10.00        | <b>0.05</b>  | <b>19</b>            | <b>312.29</b>    | <b>0.05</b>   |
| 12.50        | <b>0.34</b>  | <b>71</b>            | <b>312.46</b>    | <b>0.37</b>   |
| 15.00        | 0.10         | 29                   | 312.33           | 0.10          |
| 17.50        | 0.06         | 21                   | 312.30           | 0.06          |
| 20.00        | 0.04         | 17                   | 312.28           | 0.04          |
| 22.50        | 0.04         | 16                   | 312.28           | 0.04          |
| 25.00        | 0.00         | 1                    | 312.22           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.21           | 0.00          |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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**Stage-Discharge for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.21              | 0.00                 | 0.00               | 312.74              | 0.80                 | 1.53               | 313.27              | 1.18                 | 6.47               |
| 312.22              | 0.07                 | 0.00               | 312.75              | 0.81                 | 1.59               | 313.28              | 1.19                 | 6.61               |
| 312.23              | 0.11                 | 0.00               | 312.76              | 0.82                 | 1.65               | 313.29              | 1.19                 | 6.74               |
| 312.24              | 0.15                 | 0.01               | 312.77              | 0.83                 | 1.71               | 313.30              | 1.20                 | 6.88               |
| 312.25              | 0.18                 | 0.02               | 312.78              | 0.84                 | 1.77               | 313.31              | 1.20                 | 7.02               |
| 312.26              | 0.21                 | 0.02               | 312.79              | 0.84                 | 1.83               | 313.32              | 1.21                 | 7.16               |
| 312.27              | 0.23                 | 0.03               | 312.80              | 0.85                 | 1.90               | 313.33              | 1.22                 | 7.30               |
| 312.28              | 0.25                 | 0.04               | 312.81              | 0.86                 | 1.96               | 313.34              | 1.22                 | 7.44               |
| 312.29              | 0.28                 | 0.05               | 312.82              | 0.87                 | 2.03               | 313.35              | 1.23                 | 7.59               |
| 312.30              | 0.30                 | 0.06               | 312.83              | 0.88                 | 2.10               | 313.36              | 1.23                 | 7.74               |
| 312.31              | 0.32                 | 0.07               | 312.84              | 0.88                 | 2.17               | 313.37              | 1.24                 | 7.89               |
| 312.32              | 0.33                 | 0.09               | 312.85              | 0.89                 | 2.24               | 313.38              | 1.25                 | 8.04               |
| 312.33              | 0.35                 | 0.10               | 312.86              | 0.90                 | 2.31               | 313.39              | 1.25                 | 8.19               |
| 312.34              | 0.37                 | 0.11               | 312.87              | 0.91                 | 2.38               | 313.40              | 1.26                 | 8.34               |
| 312.35              | 0.38                 | 0.13               | 312.88              | 0.91                 | 2.46               | 313.41              | <b>1.26</b>          | <b>8.50</b>        |
| 312.36              | 0.40                 | 0.15               | 312.89              | 0.92                 | 2.53               |                     |                      |                    |
| 312.37              | 0.41                 | 0.16               | 312.90              | 0.93                 | 2.61               |                     |                      |                    |
| 312.38              | 0.43                 | 0.18               | 312.91              | 0.94                 | 2.69               |                     |                      |                    |
| 312.39              | 0.44                 | 0.20               | 312.92              | 0.94                 | 2.77               |                     |                      |                    |
| 312.40              | 0.46                 | 0.22               | 312.93              | 0.95                 | 2.85               |                     |                      |                    |
| 312.41              | 0.47                 | 0.25               | 312.94              | 0.96                 | 2.93               |                     |                      |                    |
| 312.42              | 0.48                 | 0.27               | 312.95              | 0.97                 | 3.02               |                     |                      |                    |
| 312.43              | 0.50                 | 0.29               | 312.96              | 0.97                 | 3.10               |                     |                      |                    |
| 312.44              | 0.51                 | 0.32               | 312.97              | 0.98                 | 3.19               |                     |                      |                    |
| 312.45              | 0.52                 | 0.34               | 312.98              | 0.99                 | 3.28               |                     |                      |                    |
| 312.46              | 0.53                 | 0.37               | 312.99              | 0.99                 | 3.36               |                     |                      |                    |
| 312.47              | 0.55                 | 0.39               | 313.00              | 1.00                 | 3.46               |                     |                      |                    |
| 312.48              | 0.56                 | 0.42               | 313.01              | 1.01                 | 3.55               |                     |                      |                    |
| 312.49              | 0.57                 | 0.45               | 313.02              | 1.01                 | 3.64               |                     |                      |                    |
| 312.50              | 0.58                 | 0.48               | 313.03              | 1.02                 | 3.74               |                     |                      |                    |
| 312.51              | 0.59                 | 0.51               | 313.04              | 1.03                 | 3.83               |                     |                      |                    |
| 312.52              | 0.60                 | 0.55               | 313.05              | 1.04                 | 3.93               |                     |                      |                    |
| 312.53              | 0.61                 | 0.58               | 313.06              | 1.04                 | 4.03               |                     |                      |                    |
| 312.54              | 0.62                 | 0.61               | 313.07              | 1.05                 | 4.13               |                     |                      |                    |
| 312.55              | 0.63                 | 0.65               | 313.08              | 1.06                 | 4.23               |                     |                      |                    |
| 312.56              | 0.64                 | 0.69               | 313.09              | 1.06                 | 4.34               |                     |                      |                    |
| 312.57              | 0.65                 | 0.72               | 313.10              | 1.07                 | 4.44               |                     |                      |                    |
| 312.58              | 0.66                 | 0.76               | 313.11              | 1.08                 | 4.55               |                     |                      |                    |
| 312.59              | 0.67                 | 0.80               | 313.12              | 1.08                 | 4.66               |                     |                      |                    |
| 312.60              | 0.68                 | 0.84               | 313.13              | 1.09                 | 4.77               |                     |                      |                    |
| 312.61              | 0.69                 | 0.88               | 313.14              | 1.10                 | 4.88               |                     |                      |                    |
| 312.62              | 0.70                 | 0.93               | 313.15              | 1.10                 | 4.99               |                     |                      |                    |
| 312.63              | 0.71                 | 0.97               | 313.16              | 1.11                 | 5.11               |                     |                      |                    |
| 312.64              | 0.72                 | 1.02               | 313.17              | 1.12                 | 5.22               |                     |                      |                    |
| 312.65              | 0.73                 | 1.06               | 313.18              | 1.12                 | 5.34               |                     |                      |                    |
| 312.66              | 0.74                 | 1.11               | 313.19              | 1.13                 | 5.46               |                     |                      |                    |
| 312.67              | 0.74                 | 1.16               | 313.20              | 1.13                 | 5.58               |                     |                      |                    |
| 312.68              | 0.75                 | 1.21               | 313.21              | 1.14                 | 5.71               |                     |                      |                    |
| 312.69              | 0.76                 | 1.26               | 313.22              | 1.15                 | 5.83               |                     |                      |                    |
| 312.70              | 0.77                 | 1.31               | 313.23              | 1.15                 | 5.95               |                     |                      |                    |
| 312.71              | 0.78                 | 1.36               | 313.24              | 1.16                 | 6.08               |                     |                      |                    |
| 312.72              | 0.79                 | 1.42               | 313.25              | 1.17                 | 6.21               |                     |                      |                    |
| 312.73              | 0.80                 | 1.47               | 313.26              | 1.17                 | 6.34               |                     |                      |                    |

**Stage-Area-Storage for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.21              | 0.0                 | 0                       | 313.27              | 5.5                 | 571                     |
| 312.23              | 0.0                 | 4                       | 313.29              | 5.7                 | 589                     |
| 312.25              | 0.1                 | 9                       | 313.31              | 5.8                 | 606                     |
| 312.27              | 0.1                 | 14                      | 313.33              | 6.0                 | 624                     |
| 312.29              | 0.2                 | 19                      | 313.35              | 6.2                 | 643                     |
| 312.31              | 0.2                 | 24                      | 313.37              | 6.4                 | 661                     |
| 312.33              | 0.3                 | 29                      | 313.39              | 6.5                 | 680                     |
| 312.35              | 0.3                 | 35                      | 313.41              | <b>6.7</b>          | <b>699</b>              |
| 312.37              | 0.4                 | 41                      |                     |                     |                         |
| 312.39              | 0.5                 | 48                      |                     |                     |                         |
| 312.41              | 0.5                 | 54                      |                     |                     |                         |
| 312.43              | 0.6                 | 61                      |                     |                     |                         |
| 312.45              | 0.7                 | 68                      |                     |                     |                         |
| 312.47              | 0.7                 | 75                      |                     |                     |                         |
| 312.49              | 0.8                 | 83                      |                     |                     |                         |
| 312.51              | 0.9                 | 90                      |                     |                     |                         |
| 312.53              | 0.9                 | 99                      |                     |                     |                         |
| 312.55              | 1.0                 | 107                     |                     |                     |                         |
| 312.57              | 1.1                 | 115                     |                     |                     |                         |
| 312.59              | 1.2                 | 124                     |                     |                     |                         |
| 312.61              | 1.3                 | 133                     |                     |                     |                         |
| 312.63              | 1.4                 | 142                     |                     |                     |                         |
| 312.65              | 1.5                 | 152                     |                     |                     |                         |
| 312.67              | 1.6                 | 162                     |                     |                     |                         |
| 312.69              | 1.7                 | 172                     |                     |                     |                         |
| 312.71              | 1.8                 | 182                     |                     |                     |                         |
| 312.73              | 1.9                 | 193                     |                     |                     |                         |
| 312.75              | 2.0                 | 203                     |                     |                     |                         |
| 312.77              | 2.1                 | 214                     |                     |                     |                         |
| 312.79              | 2.2                 | 226                     |                     |                     |                         |
| 312.81              | 2.3                 | 237                     |                     |                     |                         |
| 312.83              | 2.4                 | 249                     |                     |                     |                         |
| 312.85              | 2.5                 | 261                     |                     |                     |                         |
| 312.87              | 2.6                 | 273                     |                     |                     |                         |
| 312.89              | 2.7                 | 286                     |                     |                     |                         |
| 312.91              | 2.9                 | 298                     |                     |                     |                         |
| 312.93              | 3.0                 | 312                     |                     |                     |                         |
| 312.95              | 3.1                 | 325                     |                     |                     |                         |
| 312.97              | 3.3                 | 338                     |                     |                     |                         |
| 312.99              | 3.4                 | 352                     |                     |                     |                         |
| 313.01              | 3.5                 | 366                     |                     |                     |                         |
| 313.03              | 3.7                 | 380                     |                     |                     |                         |
| 313.05              | 3.8                 | 395                     |                     |                     |                         |
| 313.07              | 3.9                 | 410                     |                     |                     |                         |
| 313.09              | 4.1                 | 425                     |                     |                     |                         |
| 313.11              | 4.2                 | 440                     |                     |                     |                         |
| 313.13              | 4.4                 | 455                     |                     |                     |                         |
| 313.15              | 4.5                 | 471                     |                     |                     |                         |
| 313.17              | 4.7                 | 487                     |                     |                     |                         |
| 313.19              | 4.8                 | 503                     |                     |                     |                         |
| 313.21              | 5.0                 | 520                     |                     |                     |                         |
| 313.23              | 5.2                 | 537                     |                     |                     |                         |
| 313.25              | 5.3                 | 554                     |                     |                     |                         |



### Summary for Reach 4R: Proposed 10" Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

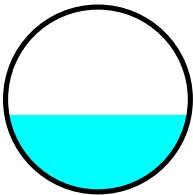
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.05' @ 12.00 hrs

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 2.78" for 25-yr event  
Inflow = 1.03 cfs @ 12.01 hrs, Volume= 0.055 af  
Outflow = 1.03 cfs @ 12.01 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.1 min  
Routed to Reach 3R : Proposed RRv Swale

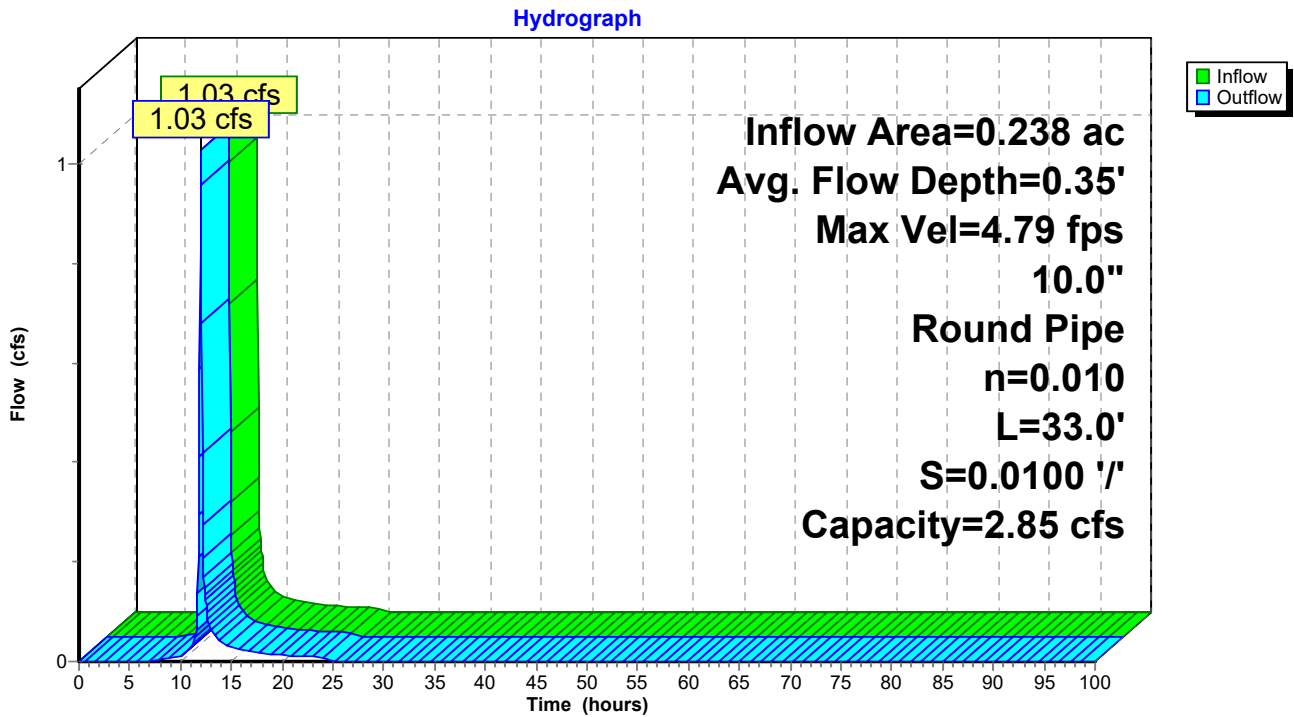
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 4.79 fps, Min. Travel Time= 0.1 min  
Avg. Velocity= 1.44 fps, Avg. Travel Time= 0.4 min

Peak Storage= 7 cf @ 12.01 hrs  
Average Depth at Peak Storage= 0.35' , Surface Width= 0.82'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.85 cfs

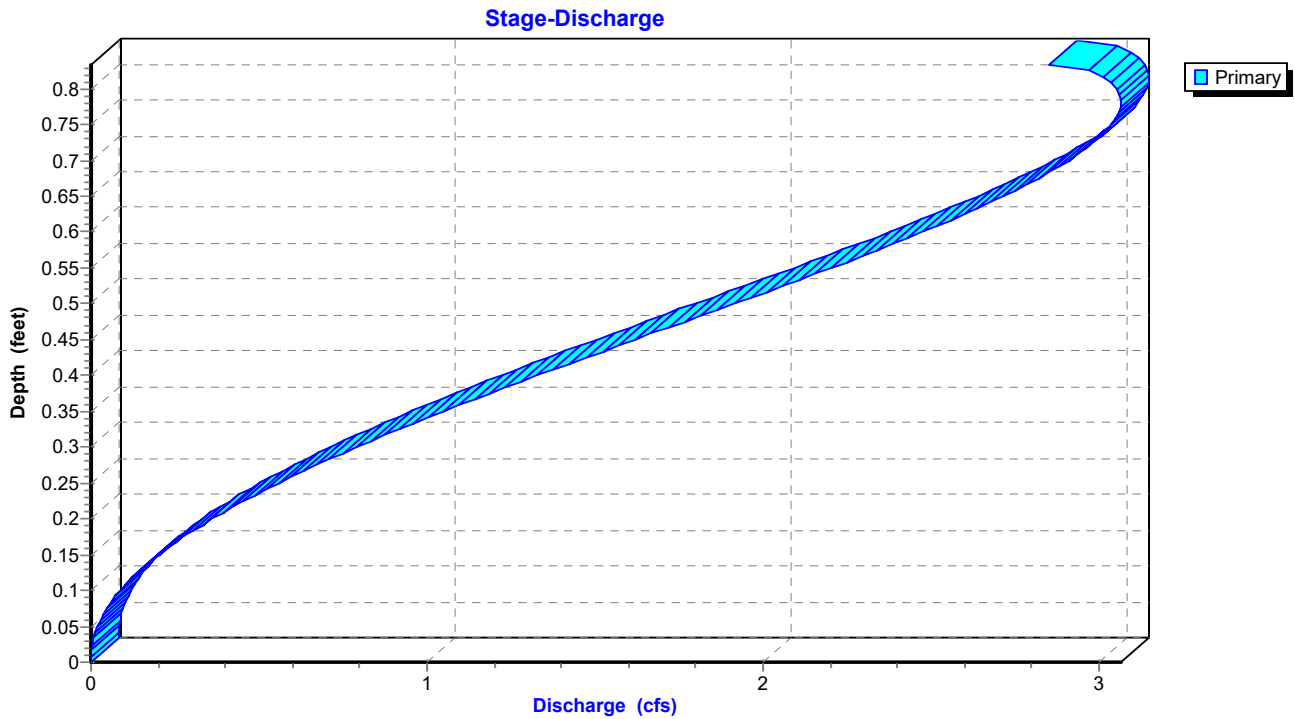
10.0" Round Pipe  
n= 0.010 PVC, smooth interior  
Length= 33.0' Slope= 0.0100 '/'  
Inlet Invert= 312.54', Outlet Invert= 312.21'



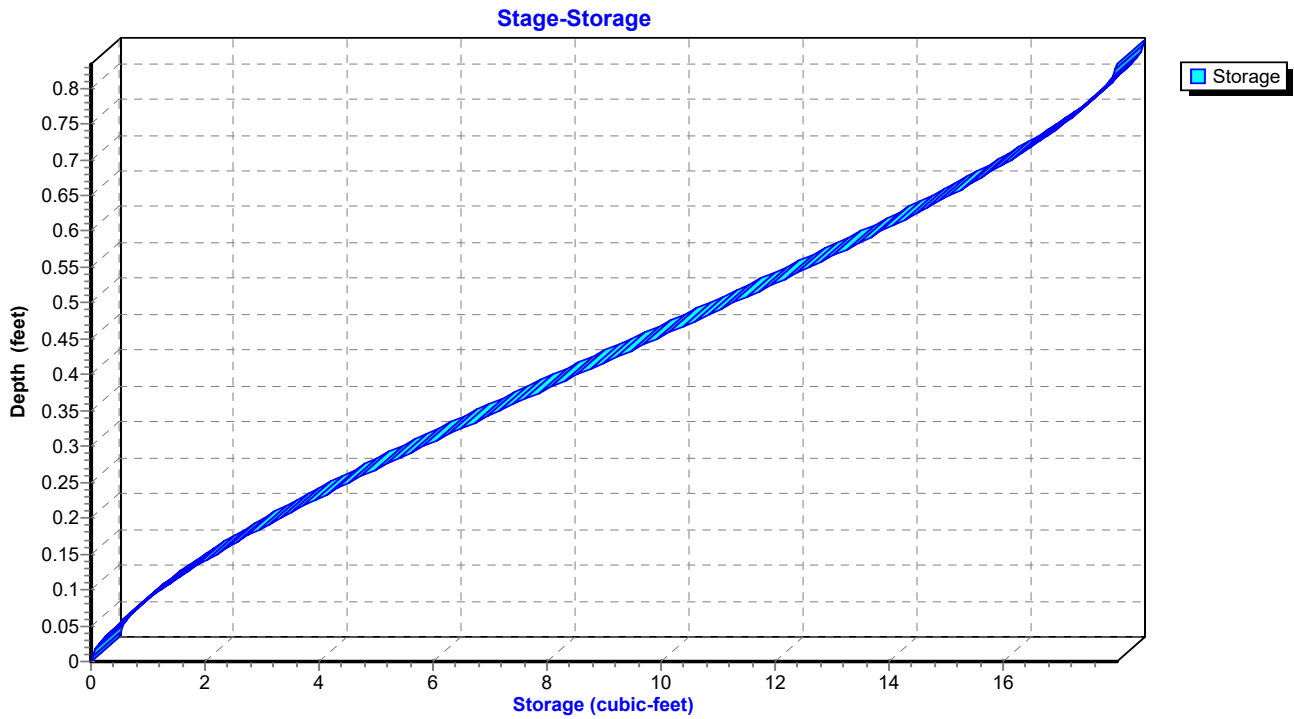
Reach 4R: Proposed 10" Culvert



Reach 4R: Proposed 10" Culvert



### Reach 4R: Proposed 10" Culvert



**Hydrograph for Reach 4R: Proposed 10" Culvert**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 7.50         | 0.00         | 0                    | 312.55           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>0</b>             | <b>312.58</b>    | <b>0.01</b>   |
| 12.50        | <b>0.11</b>  | <b>1</b>             | <b>312.65</b>    | <b>0.11</b>   |
| 15.00        | 0.03         | 1                    | 312.60           | 0.03          |
| 17.50        | 0.02         | 0                    | 312.59           | 0.02          |
| 20.00        | 0.01         | 0                    | 312.58           | 0.01          |
| 22.50        | 0.01         | 0                    | 312.58           | 0.01          |
| 25.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.54           | 0.00          |

**Stage-Discharge for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.54              | 0.00                 | 0.00               | 313.07              | 5.70                 | 2.09               |
| 312.55              | 0.52                 | 0.00               | 313.08              | 5.74                 | 2.14               |
| 312.56              | 0.83                 | 0.00               | 313.09              | 5.76                 | 2.20               |
| 312.57              | 1.08                 | 0.01               | 313.10              | 5.79                 | 2.26               |
| 312.58              | 1.31                 | 0.01               | 313.11              | 5.82                 | 2.31               |
| 312.59              | 1.51                 | 0.02               | 313.12              | 5.84                 | 2.37               |
| 312.60              | 1.70                 | 0.03               | 313.13              | 5.86                 | 2.42               |
| 312.61              | 1.87                 | 0.04               | 313.14              | 5.88                 | 2.47               |
| 312.62              | 2.04                 | 0.05               | 313.15              | 5.90                 | 2.52               |
| 312.63              | 2.20                 | 0.07               | 313.16              | 5.91                 | 2.57               |
| 312.64              | 2.35                 | 0.09               | 313.17              | 5.93                 | 2.62               |
| 312.65              | 2.49                 | 0.11               | 313.18              | 5.94                 | 2.67               |
| 312.66              | 2.63                 | 0.13               | 313.19              | 5.94                 | 2.71               |
| 312.67              | 2.76                 | 0.15               | 313.20              | 5.95                 | 2.76               |
| 312.68              | 2.89                 | 0.17               | 313.21              | 5.95                 | 2.80               |
| 312.69              | 3.02                 | 0.20               | 313.22              | <b>5.95</b>          | 2.84               |
| 312.70              | 3.13                 | 0.23               | 313.23              | 5.95                 | 2.87               |
| 312.71              | 3.25                 | 0.26               | 313.24              | 5.95                 | 2.91               |
| 312.72              | 3.36                 | 0.29               | 313.25              | 5.94                 | 2.94               |
| 312.73              | 3.47                 | 0.32               | 313.26              | 5.93                 | 2.97               |
| 312.74              | 3.57                 | 0.36               | 313.27              | 5.91                 | 2.99               |
| 312.75              | 3.68                 | 0.40               | 313.28              | 5.89                 | 3.02               |
| 312.76              | 3.77                 | 0.43               | 313.29              | 5.87                 | 3.04               |
| 312.77              | 3.87                 | 0.47               | 313.30              | 5.84                 | 3.05               |
| 312.78              | 3.96                 | 0.52               | 313.31              | 5.81                 | 3.06               |
| 312.79              | 4.05                 | 0.56               | 313.32              | 5.77                 | <b>3.06</b>        |
| 312.80              | 4.14                 | 0.60               | 313.33              | 5.73                 | 3.06               |
| 312.81              | 4.23                 | 0.65               | 313.34              | 5.67                 | 3.05               |
| 312.82              | 4.31                 | 0.69               | 313.35              | 5.60                 | 3.03               |
| 312.83              | 4.39                 | 0.74               | 313.36              | 5.51                 | 2.99               |
| 312.84              | 4.47                 | 0.79               | 313.37              | 5.31                 | 2.90               |
| 312.85              | 4.54                 | 0.84               |                     |                      |                    |
| 312.86              | 4.62                 | 0.89               |                     |                      |                    |
| 312.87              | 4.69                 | 0.94               |                     |                      |                    |
| 312.88              | 4.76                 | 1.00               |                     |                      |                    |
| 312.89              | 4.82                 | 1.05               |                     |                      |                    |
| 312.90              | 4.89                 | 1.10               |                     |                      |                    |
| 312.91              | 4.95                 | 1.16               |                     |                      |                    |
| 312.92              | 5.01                 | 1.21               |                     |                      |                    |
| 312.93              | 5.07                 | 1.27               |                     |                      |                    |
| 312.94              | 5.13                 | 1.33               |                     |                      |                    |
| 312.95              | 5.19                 | 1.39               |                     |                      |                    |
| 312.96              | 5.24                 | 1.44               |                     |                      |                    |
| 312.97              | 5.29                 | 1.50               |                     |                      |                    |
| 312.98              | 5.34                 | 1.56               |                     |                      |                    |
| 312.99              | 5.39                 | 1.62               |                     |                      |                    |
| 313.00              | 5.43                 | 1.68               |                     |                      |                    |
| 313.01              | 5.48                 | 1.74               |                     |                      |                    |
| 313.02              | 5.52                 | 1.80               |                     |                      |                    |
| 313.03              | 5.56                 | 1.85               |                     |                      |                    |
| 313.04              | 5.60                 | 1.91               |                     |                      |                    |
| 313.05              | 5.64                 | 1.97               |                     |                      |                    |
| 313.06              | 5.67                 | 2.03               |                     |                      |                    |

**Stage-Area-Storage for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.54              | 0.0                 | 0                       | 313.07              | 0.4                 | 12                      |
| 312.55              | 0.0                 | 0                       | 313.08              | 0.4                 | 12                      |
| 312.56              | 0.0                 | 0                       | 313.09              | 0.4                 | 13                      |
| 312.57              | 0.0                 | 0                       | 313.10              | 0.4                 | 13                      |
| 312.58              | 0.0                 | 0                       | 313.11              | 0.4                 | 13                      |
| 312.59              | 0.0                 | 0                       | 313.12              | 0.4                 | 13                      |
| 312.60              | 0.0                 | 1                       | 313.13              | 0.4                 | 14                      |
| 312.61              | 0.0                 | 1                       | 313.14              | 0.4                 | 14                      |
| 312.62              | 0.0                 | 1                       | 313.15              | 0.4                 | 14                      |
| 312.63              | 0.0                 | 1                       | 313.16              | 0.4                 | 14                      |
| 312.64              | 0.0                 | 1                       | 313.17              | 0.4                 | 15                      |
| 312.65              | 0.0                 | 1                       | 313.18              | 0.4                 | 15                      |
| 312.66              | 0.0                 | 2                       | 313.19              | 0.5                 | 15                      |
| 312.67              | 0.1                 | 2                       | 313.20              | 0.5                 | 15                      |
| 312.68              | 0.1                 | 2                       | 313.21              | 0.5                 | 16                      |
| 312.69              | 0.1                 | 2                       | 313.22              | 0.5                 | 16                      |
| 312.70              | 0.1                 | 2                       | 313.23              | 0.5                 | 16                      |
| 312.71              | 0.1                 | 3                       | 313.24              | 0.5                 | 16                      |
| 312.72              | 0.1                 | 3                       | 313.25              | 0.5                 | 16                      |
| 312.73              | 0.1                 | 3                       | 313.26              | 0.5                 | 17                      |
| 312.74              | 0.1                 | 3                       | 313.27              | 0.5                 | 17                      |
| 312.75              | 0.1                 | 4                       | 313.28              | 0.5                 | 17                      |
| 312.76              | 0.1                 | 4                       | 313.29              | 0.5                 | 17                      |
| 312.77              | 0.1                 | 4                       | 313.30              | 0.5                 | 17                      |
| 312.78              | 0.1                 | 4                       | 313.31              | 0.5                 | 17                      |
| 312.79              | 0.1                 | 5                       | 313.32              | 0.5                 | 18                      |
| 312.80              | 0.1                 | 5                       | 313.33              | 0.5                 | 18                      |
| 312.81              | 0.2                 | 5                       | 313.34              | 0.5                 | 18                      |
| 312.82              | 0.2                 | 5                       | 313.35              | 0.5                 | 18                      |
| 312.83              | 0.2                 | 6                       | 313.36              | 0.5                 | 18                      |
| 312.84              | 0.2                 | 6                       | 313.37              | <b>0.5</b>          | <b>18</b>               |
| 312.85              | 0.2                 | 6                       |                     |                     |                         |
| 312.86              | 0.2                 | 6                       |                     |                     |                         |
| 312.87              | 0.2                 | 7                       |                     |                     |                         |
| 312.88              | 0.2                 | 7                       |                     |                     |                         |
| 312.89              | 0.2                 | 7                       |                     |                     |                         |
| 312.90              | 0.2                 | 7                       |                     |                     |                         |
| 312.91              | 0.2                 | 8                       |                     |                     |                         |
| 312.92              | 0.2                 | 8                       |                     |                     |                         |
| 312.93              | 0.3                 | 8                       |                     |                     |                         |
| 312.94              | 0.3                 | 9                       |                     |                     |                         |
| 312.95              | 0.3                 | 9                       |                     |                     |                         |
| 312.96              | 0.3                 | 9                       |                     |                     |                         |
| 312.97              | 0.3                 | 9                       |                     |                     |                         |
| 312.98              | 0.3                 | 10                      |                     |                     |                         |
| 312.99              | 0.3                 | 10                      |                     |                     |                         |
| 313.00              | 0.3                 | 10                      |                     |                     |                         |
| 313.01              | 0.3                 | 10                      |                     |                     |                         |
| 313.02              | 0.3                 | 11                      |                     |                     |                         |
| 313.03              | 0.3                 | 11                      |                     |                     |                         |
| 313.04              | 0.3                 | 11                      |                     |                     |                         |
| 313.05              | 0.3                 | 12                      |                     |                     |                         |
| 313.06              | 0.4                 | 12                      |                     |                     |                         |

**Summary for Reach 5R: Proposed RRv Swale**

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 2.78" for 25-yr event  
 Inflow = 1.07 cfs @ 11.99 hrs, Volume= 0.055 af  
 Outflow = 1.03 cfs @ 12.01 hrs, Volume= 0.055 af, Atten= 4%, Lag= 1.2 min  
 Routed to Reach 4R : Proposed 10" Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.22 fps, Min. Travel Time= 1.9 min  
 Avg. Velocity = 0.30 fps, Avg. Travel Time= 7.5 min

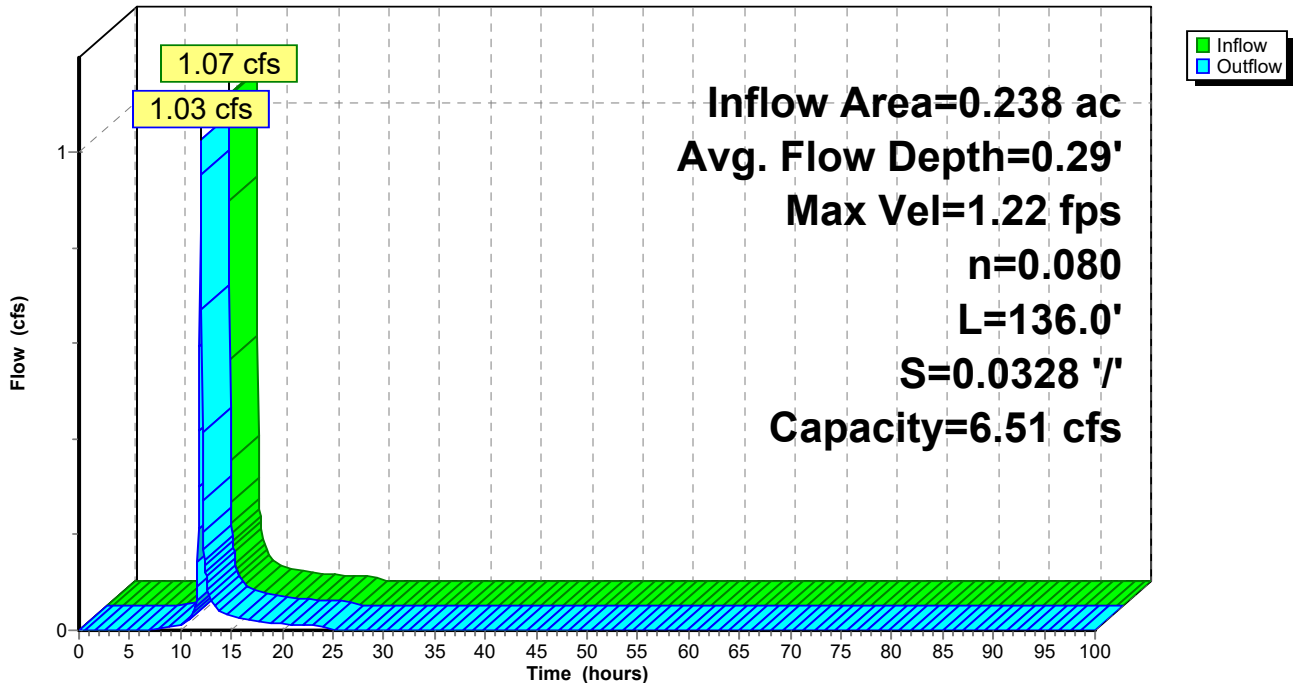
Peak Storage= 115 cf @ 12.01 hrs  
 Average Depth at Peak Storage= 0.29' , Surface Width= 3.76'  
 Bank-Full Depth= 0.75' Flow Area= 3.2 sf, Capacity= 6.51 cfs

2.00' x 0.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 6.50'  
 Length= 136.0' Slope= 0.0328 '/  
 Inlet Invert= 317.00', Outlet Invert= 312.54'

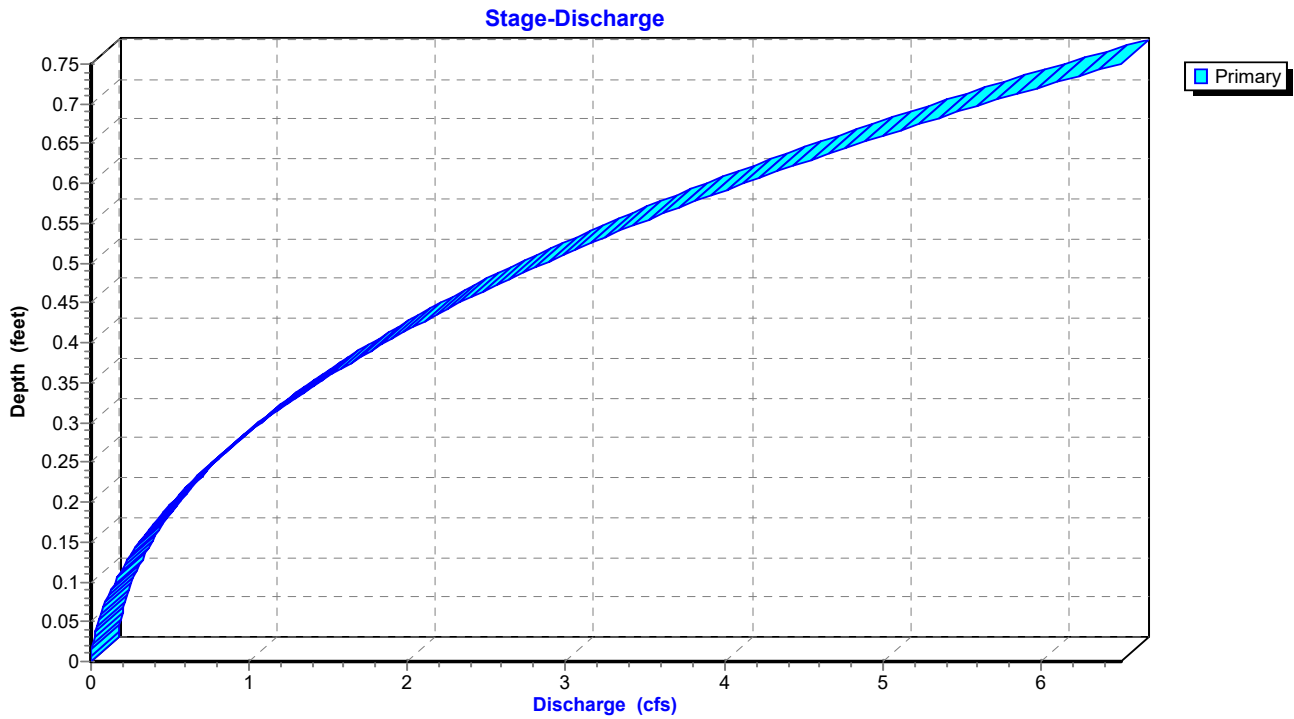


**Reach 5R: Proposed RRv Swale**

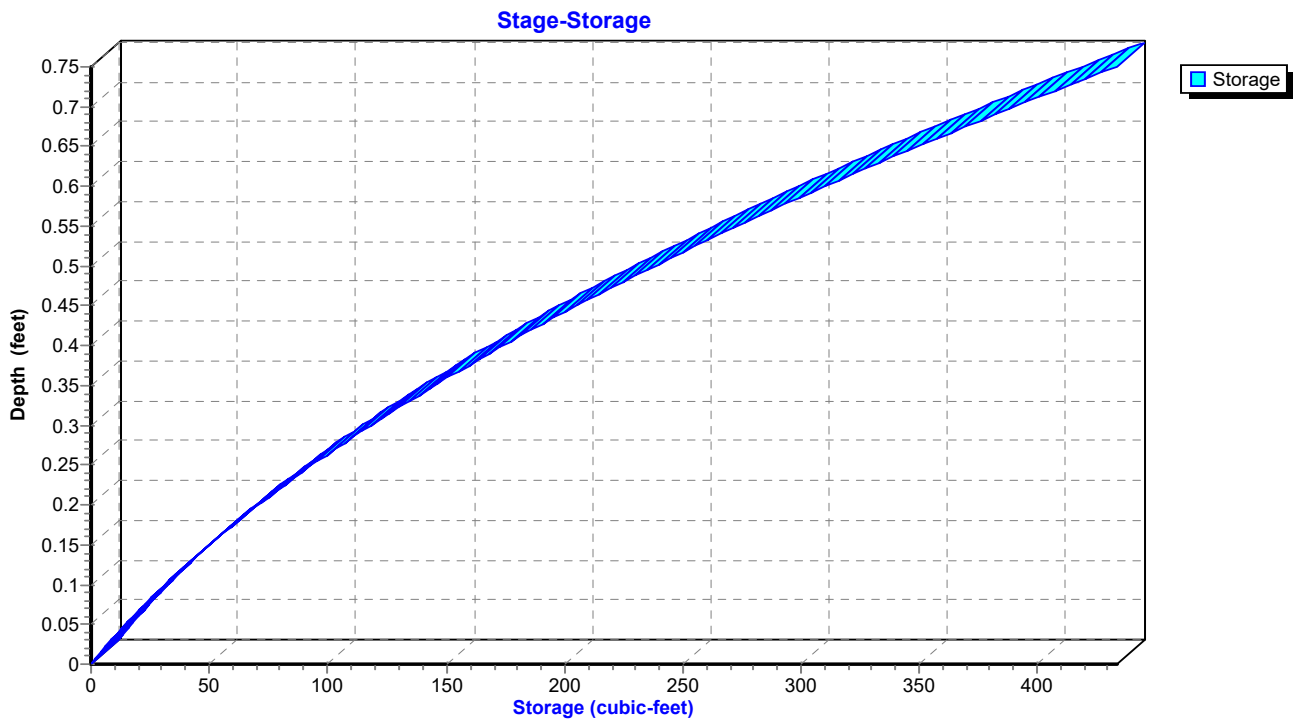
Hydrograph



### Reach 5R: Proposed RRv Swale



### Reach 5R: Proposed RRv Swale





**Hydrograph for Reach 5R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 7.50         | 0.00         | 1                    | 317.00           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>6</b>             | <b>317.02</b>    | <b>0.01</b>   |
| 12.50        | <b>0.10</b>  | <b>26</b>            | <b>317.08</b>    | <b>0.11</b>   |
| 15.00        | 0.03         | 11                   | 317.04           | 0.03          |
| 17.50        | 0.02         | 8                    | 317.03           | 0.02          |
| 20.00        | 0.01         | 7                    | 317.02           | 0.01          |
| 22.50        | 0.01         | 6                    | 317.02           | 0.01          |
| 25.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 317.00           | 0.00          |

**Stage-Discharge for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 317.00              | 0.00                 | 0.00               | 317.53              | 1.69                 | 3.21               |
| 317.01              | 0.15                 | 0.00               | 317.54              | 1.71                 | 3.33               |
| 317.02              | 0.24                 | 0.01               | 317.55              | 1.72                 | 3.46               |
| 317.03              | 0.31                 | 0.02               | 317.56              | 1.74                 | 3.58               |
| 317.04              | 0.38                 | 0.03               | 317.57              | 1.76                 | 3.71               |
| 317.05              | 0.43                 | 0.05               | 317.58              | 1.77                 | 3.85               |
| 317.06              | 0.49                 | 0.06               | 317.59              | 1.79                 | 3.98               |
| 317.07              | 0.53                 | 0.08               | 317.60              | 1.81                 | 4.12               |
| 317.08              | 0.58                 | 0.10               | 317.61              | 1.82                 | 4.26               |
| 317.09              | 0.62                 | 0.13               | 317.62              | 1.84                 | 4.40               |
| 317.10              | 0.66                 | 0.15               | 317.63              | 1.85                 | 4.55               |
| 317.11              | 0.70                 | 0.18               | 317.64              | 1.87                 | 4.69               |
| 317.12              | 0.74                 | 0.21               | 317.65              | 1.89                 | 4.84               |
| 317.13              | 0.77                 | 0.24               | 317.66              | 1.90                 | 5.00               |
| 317.14              | 0.81                 | 0.27               | 317.67              | 1.92                 | 5.15               |
| 317.15              | 0.84                 | 0.31               | 317.68              | 1.93                 | 5.31               |
| 317.16              | 0.87                 | 0.35               | 317.69              | 1.95                 | 5.48               |
| 317.17              | 0.90                 | 0.38               | 317.70              | 1.97                 | 5.64               |
| 317.18              | 0.93                 | 0.43               | 317.71              | 1.98                 | 5.81               |
| 317.19              | 0.96                 | 0.47               | 317.72              | 2.00                 | 5.98               |
| 317.20              | 0.99                 | 0.51               | 317.73              | 2.01                 | 6.15               |
| 317.21              | 1.02                 | 0.56               | 317.74              | 2.03                 | 6.33               |
| 317.22              | 1.04                 | 0.61               | 317.75              | <b>2.04</b>          | <b>6.51</b>        |
| 317.23              | 1.07                 | 0.66               |                     |                      |                    |
| 317.24              | 1.09                 | 0.71               |                     |                      |                    |
| 317.25              | 1.12                 | 0.77               |                     |                      |                    |
| 317.26              | 1.14                 | 0.83               |                     |                      |                    |
| 317.27              | 1.17                 | 0.89               |                     |                      |                    |
| 317.28              | 1.19                 | 0.95               |                     |                      |                    |
| 317.29              | 1.21                 | 1.01               |                     |                      |                    |
| 317.30              | 1.24                 | 1.08               |                     |                      |                    |
| 317.31              | 1.26                 | 1.14               |                     |                      |                    |
| 317.32              | 1.28                 | 1.21               |                     |                      |                    |
| 317.33              | 1.30                 | 1.29               |                     |                      |                    |
| 317.34              | 1.33                 | 1.36               |                     |                      |                    |
| 317.35              | 1.35                 | 1.44               |                     |                      |                    |
| 317.36              | 1.37                 | 1.52               |                     |                      |                    |
| 317.37              | 1.39                 | 1.60               |                     |                      |                    |
| 317.38              | 1.41                 | 1.68               |                     |                      |                    |
| 317.39              | 1.43                 | 1.77               |                     |                      |                    |
| 317.40              | 1.45                 | 1.85               |                     |                      |                    |
| 317.41              | 1.47                 | 1.94               |                     |                      |                    |
| 317.42              | 1.49                 | 2.04               |                     |                      |                    |
| 317.43              | 1.51                 | 2.13               |                     |                      |                    |
| 317.44              | 1.53                 | 2.23               |                     |                      |                    |
| 317.45              | 1.54                 | 2.33               |                     |                      |                    |
| 317.46              | 1.56                 | 2.43               |                     |                      |                    |
| 317.47              | 1.58                 | 2.53               |                     |                      |                    |
| 317.48              | 1.60                 | 2.64               |                     |                      |                    |
| 317.49              | 1.62                 | 2.75               |                     |                      |                    |
| 317.50              | 1.64                 | 2.86               |                     |                      |                    |
| 317.51              | 1.65                 | 2.98               |                     |                      |                    |
| 317.52              | 1.67                 | 3.09               |                     |                      |                    |

**Stage-Area-Storage for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 317.00              | 0.0                 | 0                       | 317.53              | 1.9                 | 259                     |
| 317.01              | 0.0                 | 3                       | 317.54              | 2.0                 | 266                     |
| 317.02              | 0.0                 | 6                       | 317.55              | 2.0                 | 273                     |
| 317.03              | 0.1                 | 9                       | 317.56              | 2.1                 | 280                     |
| 317.04              | 0.1                 | 12                      | 317.57              | 2.1                 | 288                     |
| 317.05              | 0.1                 | 15                      | 317.58              | 2.2                 | 295                     |
| 317.06              | 0.1                 | 18                      | 317.59              | 2.2                 | 303                     |
| 317.07              | 0.2                 | 21                      | 317.60              | 2.3                 | 310                     |
| 317.08              | 0.2                 | 24                      | 317.61              | 2.3                 | 318                     |
| 317.09              | 0.2                 | 28                      | 317.62              | 2.4                 | 325                     |
| 317.10              | 0.2                 | 31                      | 317.63              | 2.5                 | 333                     |
| 317.11              | 0.3                 | 35                      | 317.64              | 2.5                 | 341                     |
| 317.12              | 0.3                 | 39                      | 317.65              | 2.6                 | 349                     |
| 317.13              | 0.3                 | 42                      | 317.66              | 2.6                 | 357                     |
| 317.14              | 0.3                 | 46                      | 317.67              | 2.7                 | 365                     |
| 317.15              | 0.4                 | 50                      | 317.68              | 2.7                 | 374                     |
| 317.16              | 0.4                 | 54                      | 317.69              | 2.8                 | 382                     |
| 317.17              | 0.4                 | 58                      | 317.70              | 2.9                 | 390                     |
| 317.18              | 0.5                 | 62                      | 317.71              | 2.9                 | 399                     |
| 317.19              | 0.5                 | 66                      | 317.72              | 3.0                 | 407                     |
| 317.20              | 0.5                 | 71                      | 317.73              | 3.1                 | 416                     |
| 317.21              | 0.6                 | 75                      | 317.74              | 3.1                 | 425                     |
| 317.22              | 0.6                 | 80                      | 317.75              | <b>3.2</b>          | <b>434</b>              |
| 317.23              | 0.6                 | 84                      |                     |                     |                         |
| 317.24              | 0.7                 | 89                      |                     |                     |                         |
| 317.25              | 0.7                 | 94                      |                     |                     |                         |
| 317.26              | 0.7                 | 98                      |                     |                     |                         |
| 317.27              | 0.8                 | 103                     |                     |                     |                         |
| 317.28              | 0.8                 | 108                     |                     |                     |                         |
| 317.29              | 0.8                 | 113                     |                     |                     |                         |
| 317.30              | 0.9                 | 118                     |                     |                     |                         |
| 317.31              | 0.9                 | 124                     |                     |                     |                         |
| 317.32              | 0.9                 | 129                     |                     |                     |                         |
| 317.33              | 1.0                 | 134                     |                     |                     |                         |
| 317.34              | 1.0                 | 140                     |                     |                     |                         |
| 317.35              | 1.1                 | 145                     |                     |                     |                         |
| 317.36              | 1.1                 | 151                     |                     |                     |                         |
| 317.37              | 1.2                 | 157                     |                     |                     |                         |
| 317.38              | 1.2                 | 162                     |                     |                     |                         |
| 317.39              | 1.2                 | 168                     |                     |                     |                         |
| 317.40              | 1.3                 | 174                     |                     |                     |                         |
| 317.41              | 1.3                 | 180                     |                     |                     |                         |
| 317.42              | 1.4                 | 186                     |                     |                     |                         |
| 317.43              | 1.4                 | 192                     |                     |                     |                         |
| 317.44              | 1.5                 | 199                     |                     |                     |                         |
| 317.45              | 1.5                 | 205                     |                     |                     |                         |
| 317.46              | 1.6                 | 211                     |                     |                     |                         |
| 317.47              | 1.6                 | 218                     |                     |                     |                         |
| 317.48              | 1.7                 | 225                     |                     |                     |                         |
| 317.49              | 1.7                 | 231                     |                     |                     |                         |
| 317.50              | 1.8                 | 238                     |                     |                     |                         |
| 317.51              | 1.8                 | 245                     |                     |                     |                         |
| 317.52              | 1.9                 | 252                     |                     |                     |                         |

### Summary for Reach 6R: 12" Culvert Pond Discharge

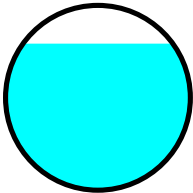
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 2.86" for 25-yr event  
Inflow = 3.34 cfs @ 12.13 hrs, Volume= 0.375 af  
Outflow = 3.33 cfs @ 12.13 hrs, Volume= 0.375 af, Atten= 0%, Lag= 0.0 min  
Routed to Pond 2ST : Existing Sediment Trap

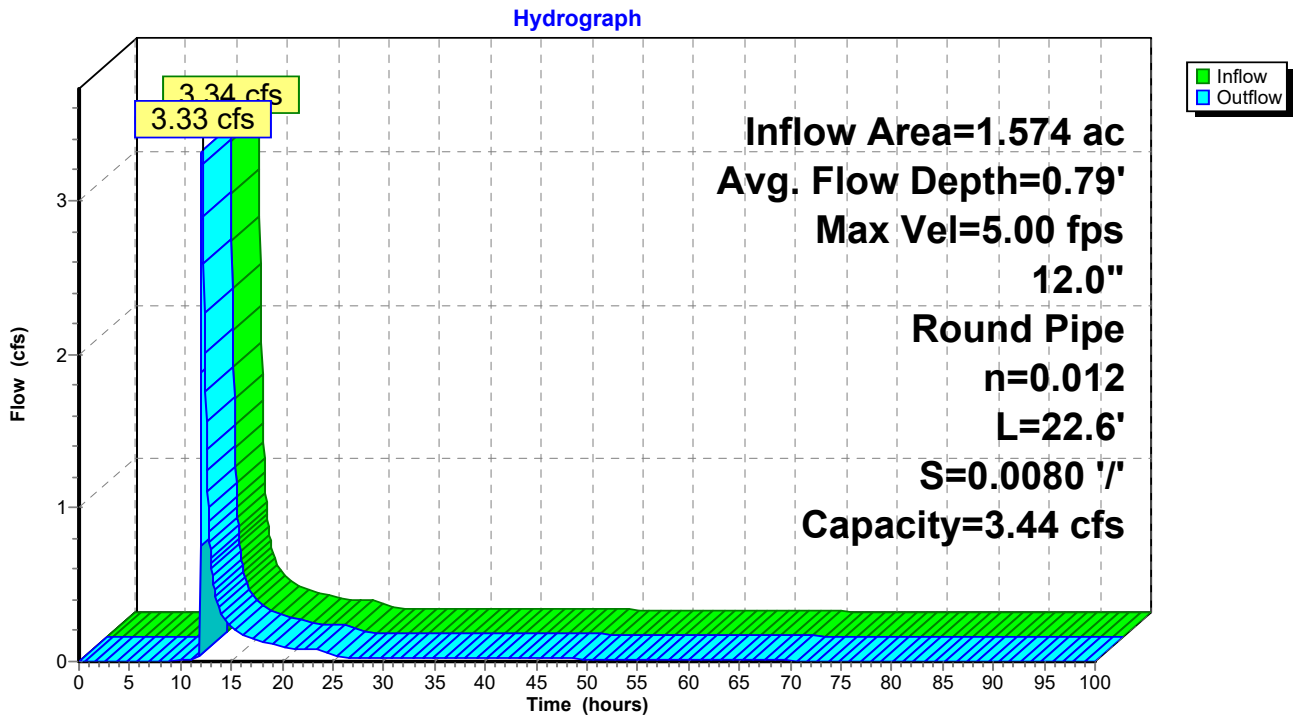
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 5.00 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.07 fps, Avg. Travel Time= 0.4 min

Peak Storage= 15 cf @ 12.13 hrs  
Average Depth at Peak Storage= 0.79' , Surface Width= 0.81'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.44 cfs

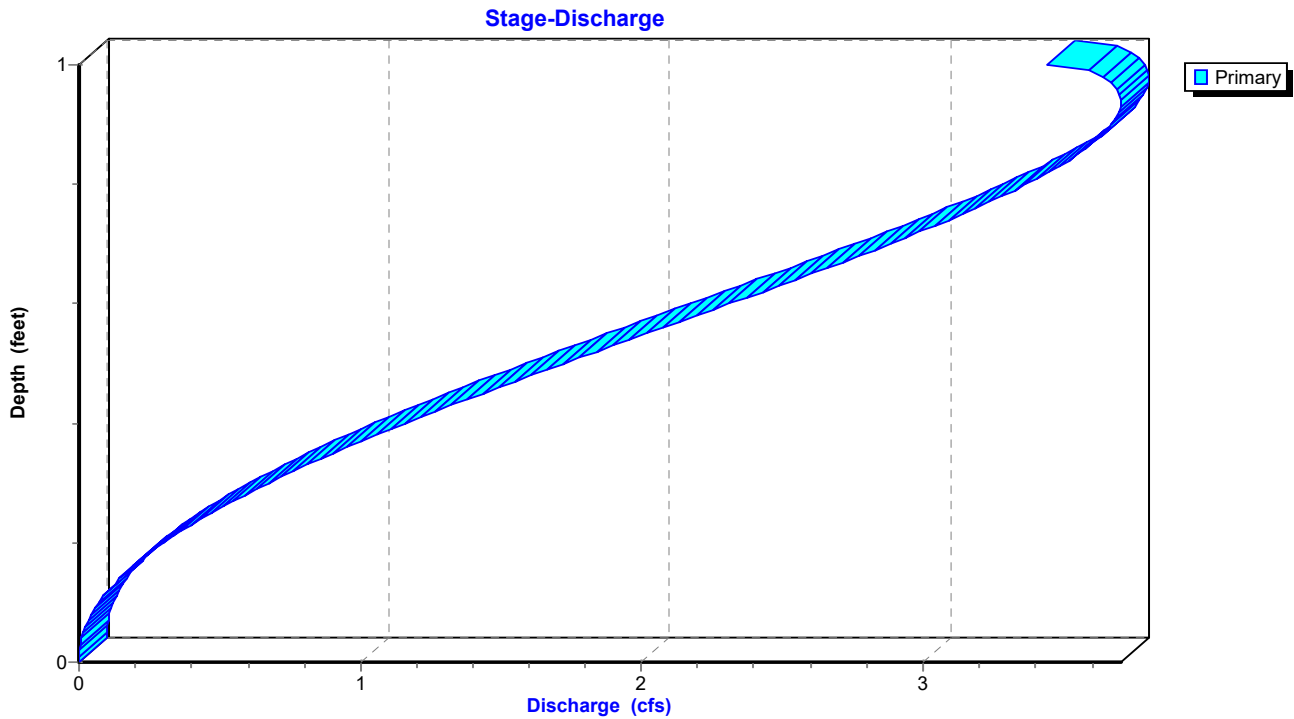
12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 22.6' Slope= 0.0080 '/  
Inlet Invert= 309.83', Outlet Invert= 309.65'



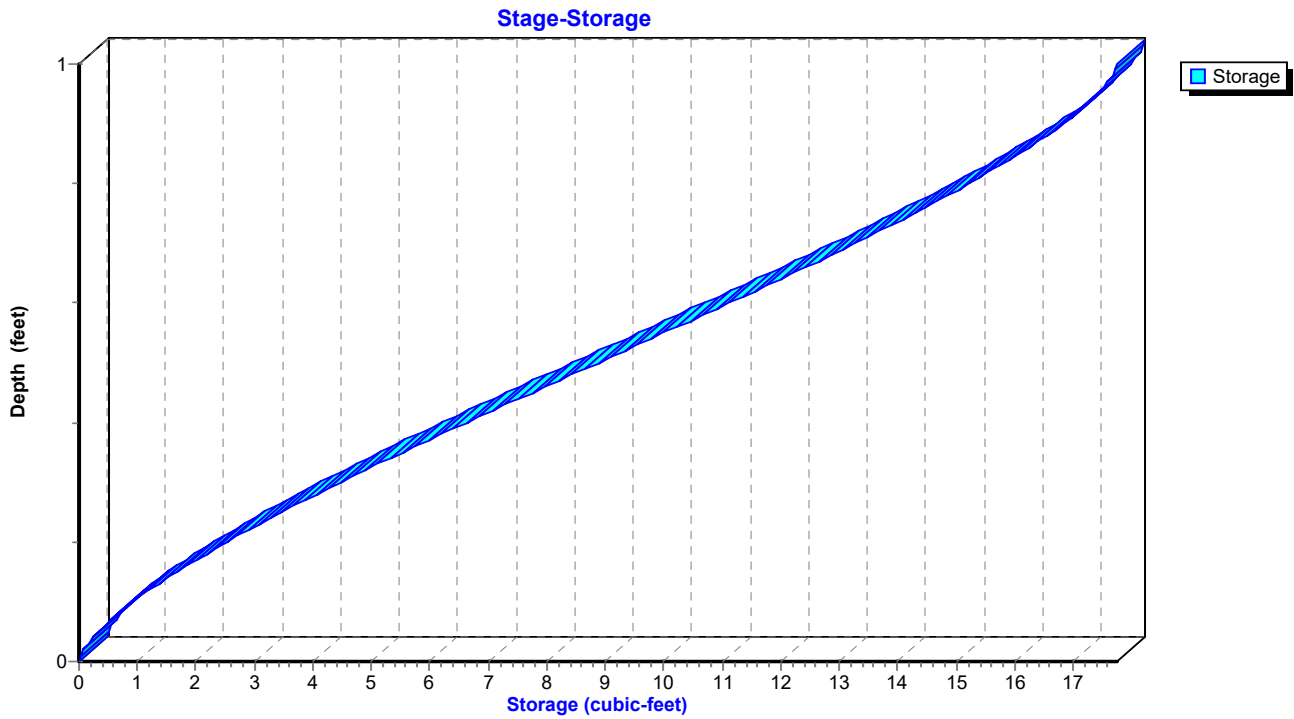
### Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



**Hydrograph for Reach 6R: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 2.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 5.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 7.50         | 0.00         | 0                    | 309.84           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>0</b>             | <b>309.87</b>    | <b>0.01</b>   |
| 12.50        | <b>1.55</b>  | <b>8</b>             | <b>310.30</b>    | <b>1.56</b>   |
| 15.00        | 0.22         | 2                    | 310.00           | 0.22          |
| 17.50        | 0.14         | 1                    | 309.97           | 0.14          |
| 20.00        | 0.10         | 1                    | 309.95           | 0.10          |
| 22.50        | 0.08         | 1                    | 309.93           | 0.08          |
| 25.00        | 0.04         | 1                    | 309.91           | 0.04          |
| 27.50        | 0.03         | 0                    | 309.89           | 0.03          |
| 30.00        | 0.03         | 0                    | 309.89           | 0.03          |
| 32.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 35.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 37.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 40.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 42.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 45.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 47.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 50.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 52.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 55.00        | 0.01         | 0                    | 309.88           | 0.01          |
| 57.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 60.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 62.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 65.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 67.50        | 0.01         | 0                    | 309.86           | 0.01          |
| 70.00        | 0.01         | 0                    | 309.86           | 0.01          |
| 72.50        | 0.00         | 0                    | 309.86           | 0.00          |
| 75.00        | 0.00         | 0                    | 309.85           | 0.00          |
| 77.50        | 0.00         | 0                    | 309.85           | 0.00          |
| 80.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 82.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 85.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 87.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 90.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 92.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 95.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 97.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 100.00       | 0.00         | 0                    | 309.83           | 0.00          |

**Stage-Discharge for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 309.83              | 0.00                 | 0.00               | 310.36              | 4.49                 | 1.90               |
| 309.84              | 0.39                 | 0.00               | 310.37              | 4.53                 | 1.96               |
| 309.85              | 0.62                 | 0.00               | 310.38              | 4.56                 | 2.02               |
| 309.86              | 0.81                 | 0.01               | 310.39              | 4.59                 | 2.08               |
| 309.87              | 0.97                 | 0.01               | 310.40              | 4.62                 | 2.14               |
| 309.88              | 1.13                 | 0.02               | 310.41              | 4.65                 | 2.20               |
| 309.89              | 1.27                 | 0.02               | 310.42              | 4.68                 | 2.26               |
| 309.90              | 1.40                 | 0.03               | 310.43              | 4.70                 | 2.31               |
| 309.91              | 1.53                 | 0.04               | 310.44              | 4.73                 | 2.37               |
| 309.92              | 1.65                 | 0.06               | 310.45              | 4.75                 | 2.43               |
| 309.93              | 1.76                 | 0.07               | 310.46              | 4.78                 | 2.49               |
| 309.94              | 1.87                 | 0.09               | 310.47              | 4.80                 | 2.55               |
| 309.95              | 1.97                 | 0.11               | 310.48              | 4.82                 | 2.61               |
| 309.96              | 2.07                 | 0.12               | 310.49              | 4.84                 | 2.66               |
| 309.97              | 2.17                 | 0.15               | 310.50              | 4.86                 | 2.72               |
| 309.98              | 2.27                 | 0.17               | 310.51              | 4.88                 | 2.77               |
| 309.99              | 2.36                 | 0.19               | 310.52              | 4.90                 | 2.83               |
| 310.00              | 2.45                 | 0.22               | 310.53              | 4.91                 | 2.88               |
| 310.01              | 2.53                 | 0.24               | 310.54              | 4.93                 | 2.94               |
| 310.02              | 2.62                 | 0.27               | 310.55              | 4.94                 | 2.99               |
| 310.03              | 2.70                 | 0.30               | 310.56              | 4.95                 | 3.04               |
| 310.04              | 2.78                 | 0.33               | 310.57              | 4.96                 | 3.09               |
| 310.05              | 2.85                 | 0.37               | 310.58              | 4.97                 | 3.14               |
| 310.06              | 2.93                 | 0.40               | 310.59              | 4.98                 | 3.19               |
| 310.07              | 3.00                 | 0.44               | 310.60              | 4.99                 | 3.24               |
| 310.08              | 3.07                 | 0.47               | 310.61              | 4.99                 | 3.28               |
| 310.09              | 3.14                 | 0.51               | 310.62              | 5.00                 | 3.32               |
| 310.10              | 3.21                 | 0.55               | 310.63              | 5.00                 | 3.37               |
| 310.11              | 3.28                 | 0.59               | 310.64              | <b>5.00</b>          | 3.41               |
| 310.12              | 3.34                 | 0.63               | 310.65              | 5.00                 | 3.45               |
| 310.13              | 3.40                 | 0.67               | 310.66              | 5.00                 | 3.48               |
| 310.14              | 3.47                 | 0.72               | 310.67              | 4.99                 | 3.52               |
| 310.15              | 3.53                 | 0.76               | 310.68              | 4.99                 | 3.55               |
| 310.16              | 3.58                 | 0.81               | 310.69              | 4.98                 | 3.58               |
| 310.17              | 3.64                 | 0.86               | 310.70              | 4.97                 | 3.61               |
| 310.18              | 3.70                 | 0.91               | 310.71              | 4.96                 | 3.63               |
| 310.19              | 3.75                 | 0.95               | 310.72              | 4.95                 | 3.65               |
| 310.20              | 3.80                 | 1.01               | 310.73              | 4.93                 | 3.67               |
| 310.21              | 3.86                 | 1.06               | 310.74              | 4.91                 | 3.69               |
| 310.22              | 3.91                 | 1.11               | 310.75              | 4.89                 | 3.70               |
| 310.23              | 3.96                 | 1.16               | 310.76              | 4.87                 | 3.70               |
| 310.24              | 4.00                 | 1.21               | 310.77              | 4.84                 | <b>3.71</b>        |
| 310.25              | 4.05                 | 1.27               | 310.78              | 4.80                 | 3.70               |
| 310.26              | 4.10                 | 1.32               | 310.79              | 4.76                 | 3.69               |
| 310.27              | 4.14                 | 1.38               | 310.80              | 4.72                 | 3.67               |
| 310.28              | 4.19                 | 1.43               | 310.81              | 4.66                 | 3.64               |
| 310.29              | 4.23                 | 1.49               | 310.82              | 4.58                 | 3.59               |
| 310.30              | 4.27                 | 1.55               | 310.83              | 4.39                 | 3.44               |
| 310.31              | 4.31                 | 1.61               |                     |                      |                    |
| 310.32              | 4.35                 | 1.66               |                     |                      |                    |
| 310.33              | 4.39                 | 1.72               |                     |                      |                    |
| 310.34              | 4.42                 | 1.78               |                     |                      |                    |
| 310.35              | 4.46                 | 1.84               |                     |                      |                    |



**Stage-Area-Storage for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 309.83              | 0.0                 | 0                       | 310.36              | 0.4                 | 10                      |
| 309.84              | 0.0                 | 0                       | 310.37              | 0.4                 | 10                      |
| 309.85              | 0.0                 | 0                       | 310.38              | 0.4                 | 10                      |
| 309.86              | 0.0                 | 0                       | 310.39              | 0.5                 | 10                      |
| 309.87              | 0.0                 | 0                       | 310.40              | 0.5                 | 10                      |
| 309.88              | 0.0                 | 0                       | 310.41              | 0.5                 | 11                      |
| 309.89              | 0.0                 | 0                       | 310.42              | 0.5                 | 11                      |
| 309.90              | 0.0                 | 1                       | 310.43              | 0.5                 | 11                      |
| 309.91              | 0.0                 | 1                       | 310.44              | 0.5                 | 11                      |
| 309.92              | 0.0                 | 1                       | 310.45              | 0.5                 | 12                      |
| 309.93              | 0.0                 | 1                       | 310.46              | 0.5                 | 12                      |
| 309.94              | 0.0                 | 1                       | 310.47              | 0.5                 | 12                      |
| 309.95              | 0.1                 | 1                       | 310.48              | 0.5                 | 12                      |
| 309.96              | 0.1                 | 1                       | 310.49              | 0.5                 | 12                      |
| 309.97              | 0.1                 | 2                       | 310.50              | 0.6                 | 13                      |
| 309.98              | 0.1                 | 2                       | 310.51              | 0.6                 | 13                      |
| 309.99              | 0.1                 | 2                       | 310.52              | 0.6                 | 13                      |
| 310.00              | 0.1                 | 2                       | 310.53              | 0.6                 | 13                      |
| 310.01              | 0.1                 | 2                       | 310.54              | 0.6                 | 13                      |
| 310.02              | 0.1                 | 2                       | 310.55              | 0.6                 | 14                      |
| 310.03              | 0.1                 | 3                       | 310.56              | 0.6                 | 14                      |
| 310.04              | 0.1                 | 3                       | 310.57              | 0.6                 | 14                      |
| 310.05              | 0.1                 | 3                       | 310.58              | 0.6                 | 14                      |
| 310.06              | 0.1                 | 3                       | 310.59              | 0.6                 | 14                      |
| 310.07              | 0.1                 | 3                       | 310.60              | 0.6                 | 15                      |
| 310.08              | 0.2                 | 3                       | 310.61              | 0.7                 | 15                      |
| 310.09              | 0.2                 | 4                       | 310.62              | 0.7                 | 15                      |
| 310.10              | 0.2                 | 4                       | 310.63              | 0.7                 | 15                      |
| 310.11              | 0.2                 | 4                       | 310.64              | 0.7                 | 15                      |
| 310.12              | 0.2                 | 4                       | 310.65              | 0.7                 | 16                      |
| 310.13              | 0.2                 | 4                       | 310.66              | 0.7                 | 16                      |
| 310.14              | 0.2                 | 5                       | 310.67              | 0.7                 | 16                      |
| 310.15              | 0.2                 | 5                       | 310.68              | 0.7                 | 16                      |
| 310.16              | 0.2                 | 5                       | 310.69              | 0.7                 | 16                      |
| 310.17              | 0.2                 | 5                       | 310.70              | 0.7                 | 16                      |
| 310.18              | 0.2                 | 6                       | 310.71              | 0.7                 | 17                      |
| 310.19              | 0.3                 | 6                       | 310.72              | 0.7                 | 17                      |
| 310.20              | 0.3                 | 6                       | 310.73              | 0.7                 | 17                      |
| 310.21              | 0.3                 | 6                       | 310.74              | 0.8                 | 17                      |
| 310.22              | 0.3                 | 6                       | 310.75              | 0.8                 | 17                      |
| 310.23              | 0.3                 | 7                       | 310.76              | 0.8                 | 17                      |
| 310.24              | 0.3                 | 7                       | 310.77              | 0.8                 | 17                      |
| 310.25              | 0.3                 | 7                       | 310.78              | 0.8                 | 17                      |
| 310.26              | 0.3                 | 7                       | 310.79              | 0.8                 | 18                      |
| 310.27              | 0.3                 | 8                       | 310.80              | 0.8                 | 18                      |
| 310.28              | 0.3                 | 8                       | 310.81              | 0.8                 | 18                      |
| 310.29              | 0.4                 | 8                       | 310.82              | 0.8                 | 18                      |
| 310.30              | 0.4                 | 8                       | 310.83              | <b>0.8</b>          | <b>18</b>               |
| 310.31              | 0.4                 | 8                       |                     |                     |                         |
| 310.32              | 0.4                 | 9                       |                     |                     |                         |
| 310.33              | 0.4                 | 9                       |                     |                     |                         |
| 310.34              | 0.4                 | 9                       |                     |                     |                         |
| 310.35              | 0.4                 | 9                       |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.182 ac, 9.18% Impervious, Inflow Depth = 0.72" for 25-yr event  
 Inflow = 2.73 cfs @ 12.05 hrs, Volume= 0.190 af  
 Outflow = 0.10 cfs @ 18.67 hrs, Volume= 0.050 af, Atten= 96%, Lag= 397.5 min  
 Primary = 0.10 cfs @ 18.67 hrs, Volume= 0.050 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 316.53' @ 18.67 hrs Surf.Area= 0.162 ac Storage= 0.338 af (0.145 af above start)

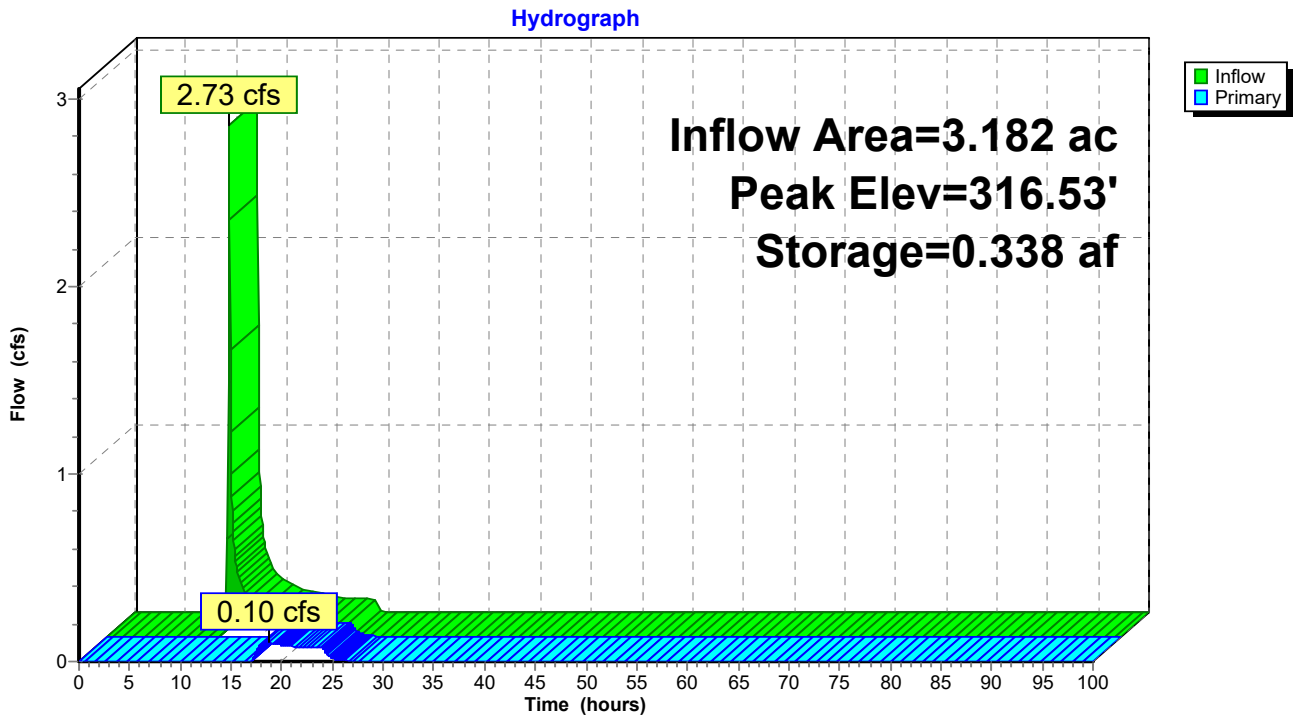
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 354.2 min ( 1,262.7 - 908.5 )

| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |  |
|------------------|-------------------|---------------|--|-----------------------|------------------|--|
| #1               | 313.83'           | 0.443 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |  |
| 313.83           | 0.088             | 271.6         | 0.000  | 0.000                 | 0.088            |  |
| 314.00           | 0.107             | 290.3         | 0.017  | 0.017                 | 0.107            |  |
| 315.50           | 0.128             | 309.9         | 0.176  | 0.193                 | 0.131            |  |
| 316.00           | 0.139             | 319.8         | 0.067  | 0.259                 | 0.143            |  |
| 316.50           | 0.154             | 348.8         | 0.073  | 0.333                 | 0.179            |  |
| 317.00           | 0.295             | 446.8         | 0.110  | 0.443                 | 0.321            |  |

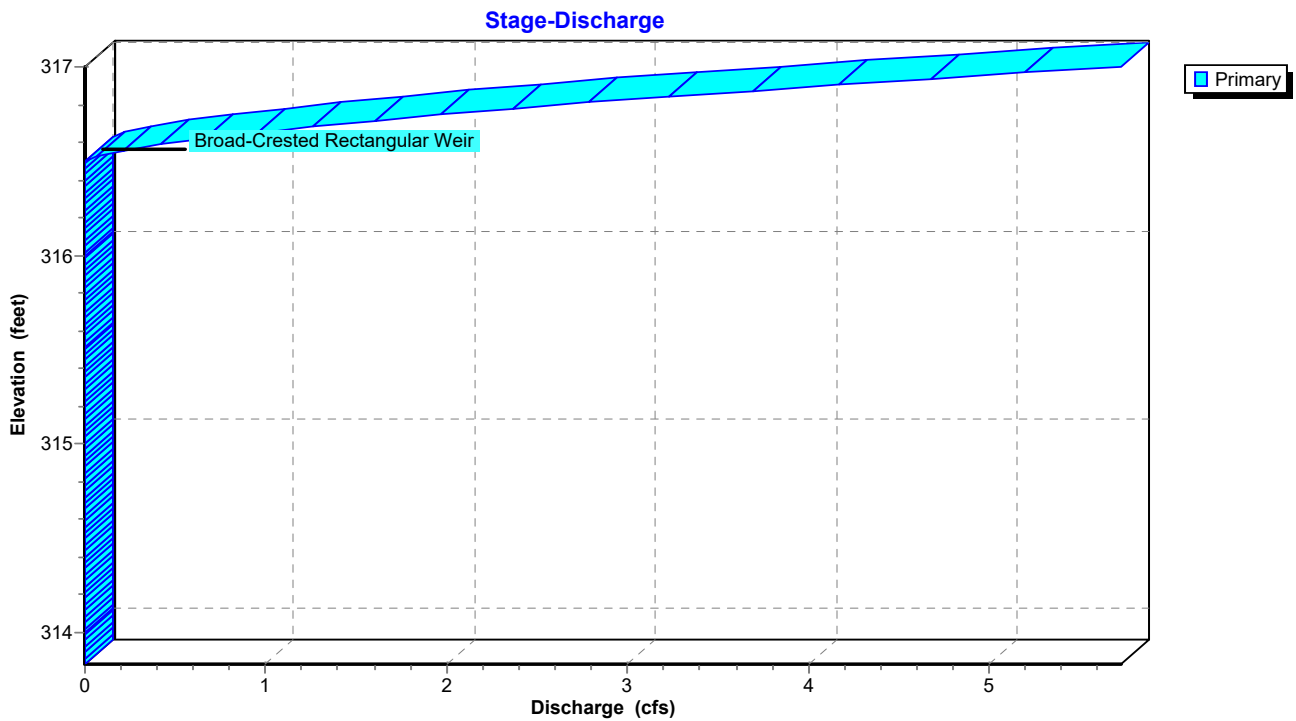
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60             |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.10 cfs @ 18.67 hrs HW=316.53' TW=316.05' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.10 cfs @ 0.49 fps)

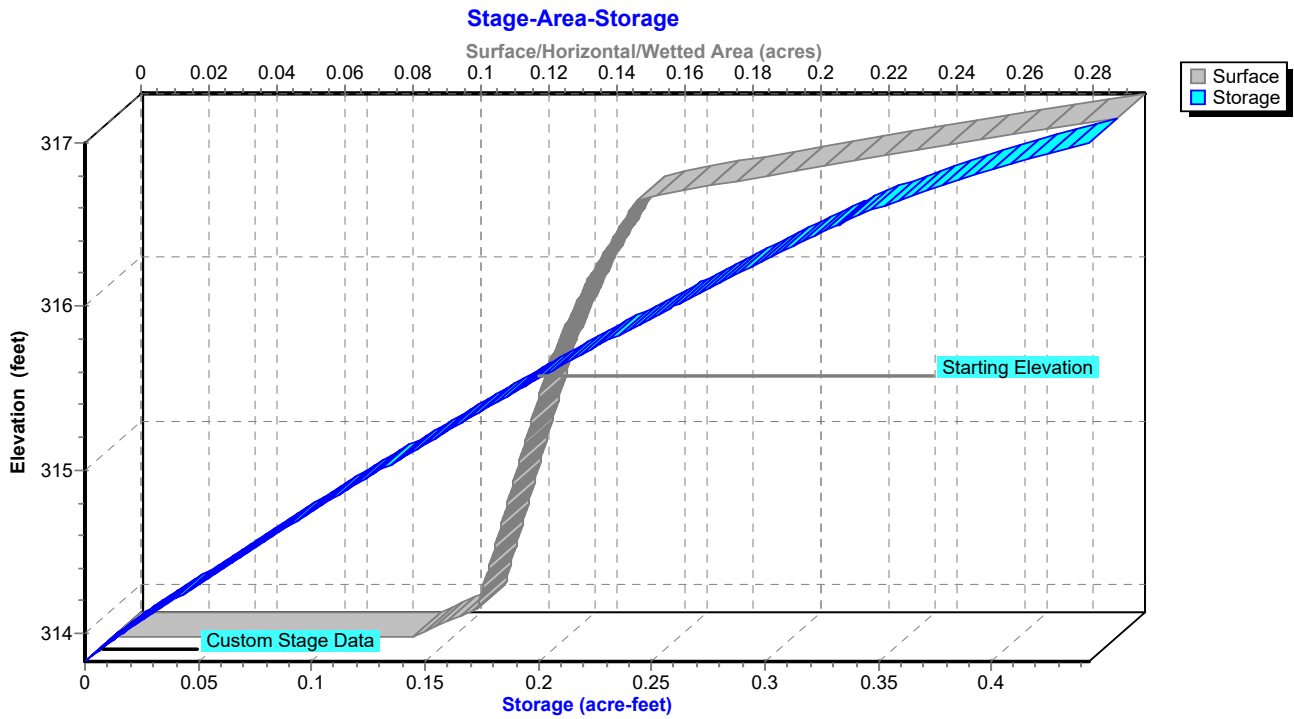
**Pond 1ST: Existing Sediment Trap**



**Pond 1ST: Existing Sediment Trap**



### Pond 1ST: Existing Sediment Trap



**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 2.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 5.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 7.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.193               | 315.50           | 0.00          |
| 12.50        | <b>0.52</b>  | 0.257               | 315.99           | 0.00          |
| 15.00        | 0.17         | 0.309               | 316.35           | 0.00          |
| 17.50        | 0.11         | <b>0.336</b>        | <b>316.52</b>    | <b>0.05</b>   |
| 20.00        | 0.08         | <b>0.337</b>        | <b>316.53</b>    | <b>0.09</b>   |
| 22.50        | 0.07         | 0.337               | 316.53           | 0.08          |
| 25.00        | 0.00         | 0.334               | 316.51           | 0.02          |
| 27.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 30.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 32.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 35.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 37.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 40.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 42.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 45.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 47.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 50.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 52.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 55.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 57.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 60.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 62.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 65.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 67.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 70.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 72.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 75.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 77.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 80.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 82.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 85.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 87.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 90.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 92.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 95.00        | 0.00         | 0.333               | 316.50           | 0.00          |
| 97.50        | 0.00         | 0.333               | 316.50           | 0.00          |
| 100.00       | 0.00         | 0.333               | 316.50           | 0.00          |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

[63] Warning: Exceeded Reach 6R INLET depth by 0.34' @ 99.95 hrs

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth = 1.25" for 25-yr event  
 Inflow = 4.93 cfs @ 12.06 hrs, Volume= 0.560 af  
 Outflow = 2.26 cfs @ 12.42 hrs, Volume= 0.414 af, Atten= 54%, Lag= 21.3 min  
 Primary = 2.26 cfs @ 12.42 hrs, Volume= 0.414 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.36' @ 12.42 hrs Surf.Area= 0.099 ac Storage= 0.175 af (0.164 af above start)

Plug-Flow detention time= 474.9 min calculated for 0.403 af (72% of inflow)  
 Center-of-Mass det. time= 153.9 min ( 1,268.6 - 1,114.7 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 307.00' | 0.248 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

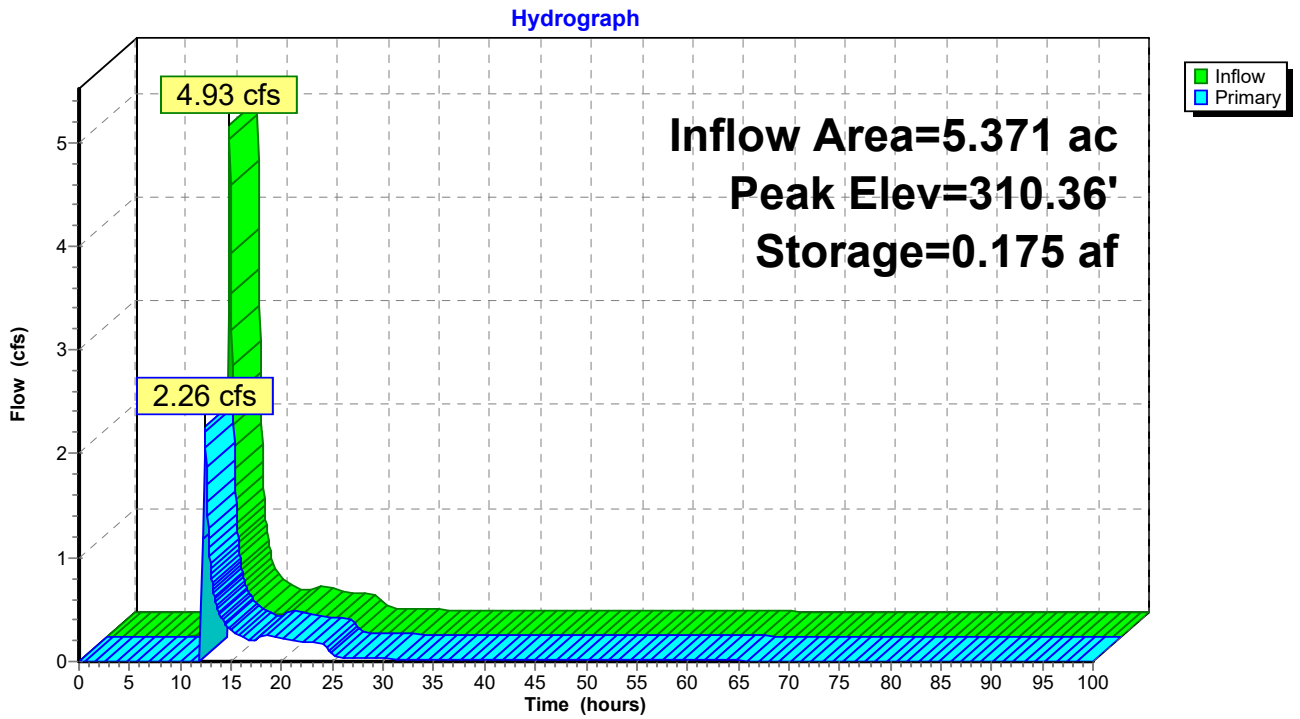
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 307.00           | 0.019             | 188.4         | 0.000                 | 0.000                 | 0.019            |
| 307.50           | 0.026             | 206.4         | 0.011                 | 0.011                 | 0.032            |
| 308.00           | 0.036             | 232.2         | 0.015                 | 0.027                 | 0.053            |
| 309.00           | 0.057             | 269.3         | 0.046                 | 0.073                 | 0.087            |
| 310.00           | 0.083             | 316.3         | 0.070                 | 0.142                 | 0.138            |
| 311.00           | 0.131             | 434.9         | 0.106                 | 0.248                 | 0.301            |

| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

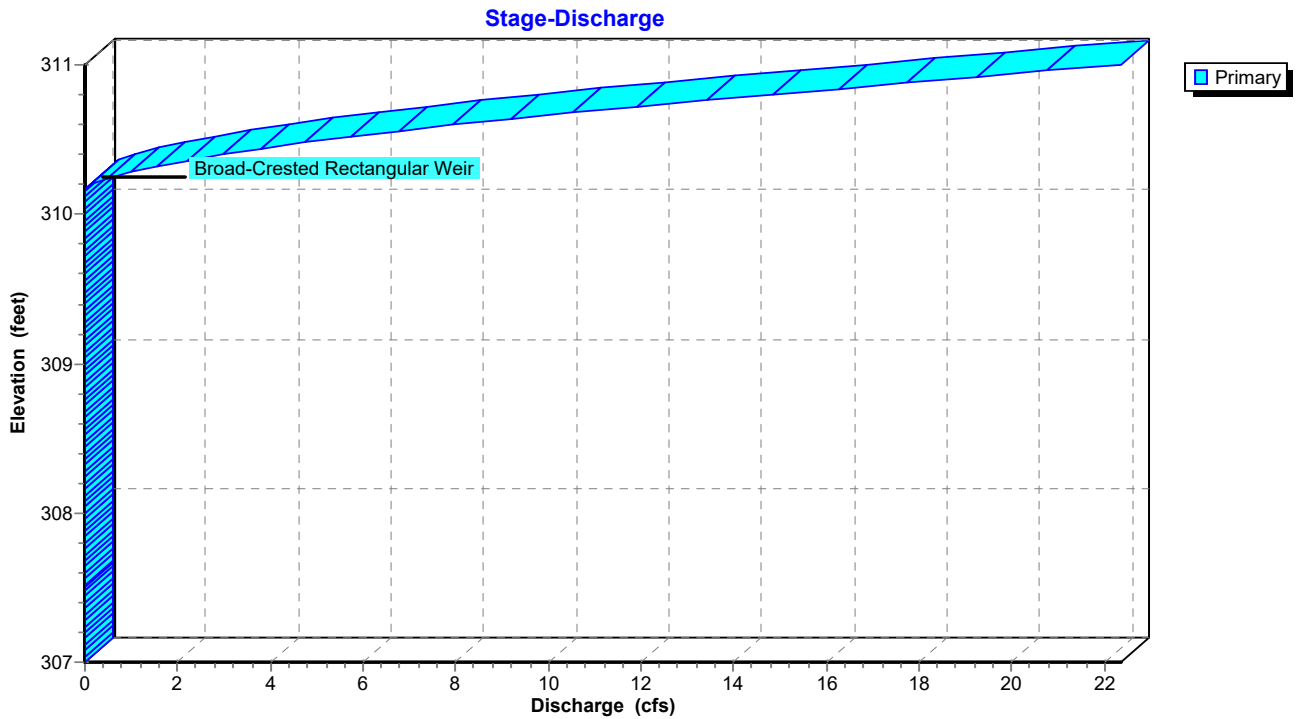
**Primary OutFlow** Max=2.22 cfs @ 12.42 hrs HW=310.36' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.22 cfs @ 1.06 fps)



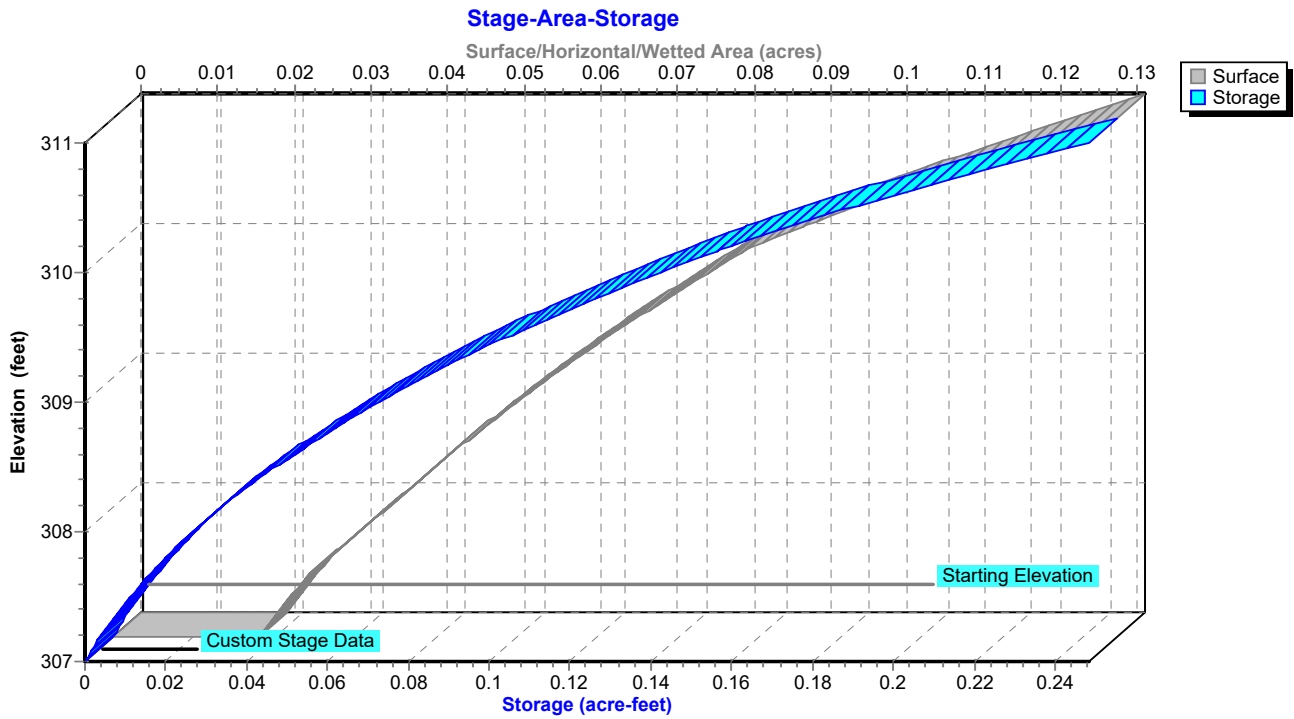
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 2.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 5.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 7.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 10.00        | <b>0.03</b>  | <b>0.014</b>        | <b>307.61</b>    | <b>0.00</b>   |
| 12.50        | <b>1.82</b>  | <b>0.174</b>        | <b>310.35</b>    | <b>2.06</b>   |
| 15.00        | 0.29         | 0.162               | 310.22           | 0.30          |
| 17.50        | 0.22         | 0.161               | 310.21           | 0.21          |
| 20.00        | 0.22         | 0.161               | 310.21           | 0.22          |
| 22.50        | 0.18         | 0.160               | 310.21           | 0.19          |
| 25.00        | 0.06         | 0.159               | 310.19           | 0.07          |
| 27.50        | 0.03         | 0.158               | 310.18           | 0.03          |
| 30.00        | 0.03         | 0.158               | 310.18           | 0.03          |
| 32.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 35.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 37.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 40.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 42.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 45.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 47.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 50.00        | 0.02         | 0.158               | 310.18           | 0.02          |
| 52.50        | 0.02         | 0.158               | 310.18           | 0.02          |
| 55.00        | 0.01         | 0.158               | 310.18           | 0.01          |
| 57.50        | 0.01         | 0.158               | 310.18           | 0.01          |
| 60.00        | 0.01         | 0.158               | 310.18           | 0.01          |
| 62.50        | 0.01         | 0.158               | 310.18           | 0.01          |
| 65.00        | 0.01         | 0.157               | 310.17           | 0.01          |
| 67.50        | 0.01         | 0.157               | 310.17           | 0.01          |
| 70.00        | 0.01         | 0.157               | 310.17           | 0.01          |
| 72.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 75.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 77.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 80.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 82.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 85.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 87.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 90.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 92.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 95.00        | 0.00         | 0.157               | 310.17           | 0.00          |
| 97.50        | 0.00         | 0.157               | 310.17           | 0.00          |
| 100.00       | 0.00         | 0.157               | 310.17           | 0.00          |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

**Summary for Pond 3P: Proposed Stormwater Pond**

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.30' @ 12.20 hrs

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 2.88" for 25-yr event  
 Inflow = 6.68 cfs @ 12.01 hrs, Volume= 0.378 af  
 Outflow = 3.69 cfs @ 12.13 hrs, Volume= 0.378 af, Atten= 45%, Lag= 7.3 min  
 Primary = 3.34 cfs @ 12.13 hrs, Volume= 0.375 af  
 Routed to Reach 6R : 12" Culvert Pond Discharge  
 Secondary = 0.35 cfs @ 12.13 hrs, Volume= 0.003 af  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 309.83' Surf.Area= 1,843 sf Storage= 1,307 cf  
 Peak Elev= 311.73' @ 12.13 hrs Surf.Area= 8,178 sf Storage= 7,269 cf (5,962 cf above start)

Plug-Flow detention time= 462.2 min calculated for 0.348 af (92% of inflow)  
 Center-of-Mass det. time= 378.3 min ( 1,196.6 - 818.3 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 311.25' | 8,217 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 308.00' | 3,905 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 307.25' | 1,412 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 13,534 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 311.25           | 3,844             | 283.0         | 0                      | 0                      | 3,844            |
| 312.00           | 4,629             | 305.0         | 3,173                  | 3,173                  | 4,897            |
| 312.95           | 6,020             | 367.0         | 5,044                  | 8,217                  | 8,228            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 308.00           | 58                | 51.0          | 0                      | 0                      | 58               |
| 309.00           | 305               | 90.0          | 165                    | 165                    | 501              |
| 310.00           | 1,751             | 173.0         | 929                    | 1,094                  | 2,243            |
| 311.00           | 2,543             | 203.0         | 2,135                  | 3,229                  | 3,160            |
| 311.25           | 2,867             | 219.0         | 676                    | 3,905                  | 3,700            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 307.25           | 22                | 18.0          | 0                      | 0                      | 22               |
| 308.00           | 103               | 36.0          | 43                     | 43                     | 102              |
| 309.00           | 241               | 56.0          | 167                    | 210                    | 255              |
| 310.00           | 465               | 78.0          | 347                    | 557                    | 499              |
| 311.00           | 814               | 105.0         | 631                    | 1,189                  | 903              |
| 311.25           | 976               | 119.0         | 223                    | 1,412                  | 1,154            |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 311.68' | <b>15.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65<br>2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |
| #2     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #3     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #4     | Primary   | 309.83' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

**Primary OutFlow** Max=3.32 cfs @ 12.13 hrs HW=311.72' TW=310.62' (Dynamic Tailwater)

↳ **2=Orifice/Grate** (Orifice Controls 1.64 cfs @ 3.05 fps)

↳ **3=Orifice/Grate** (Orifice Controls 1.64 cfs @ 3.05 fps)

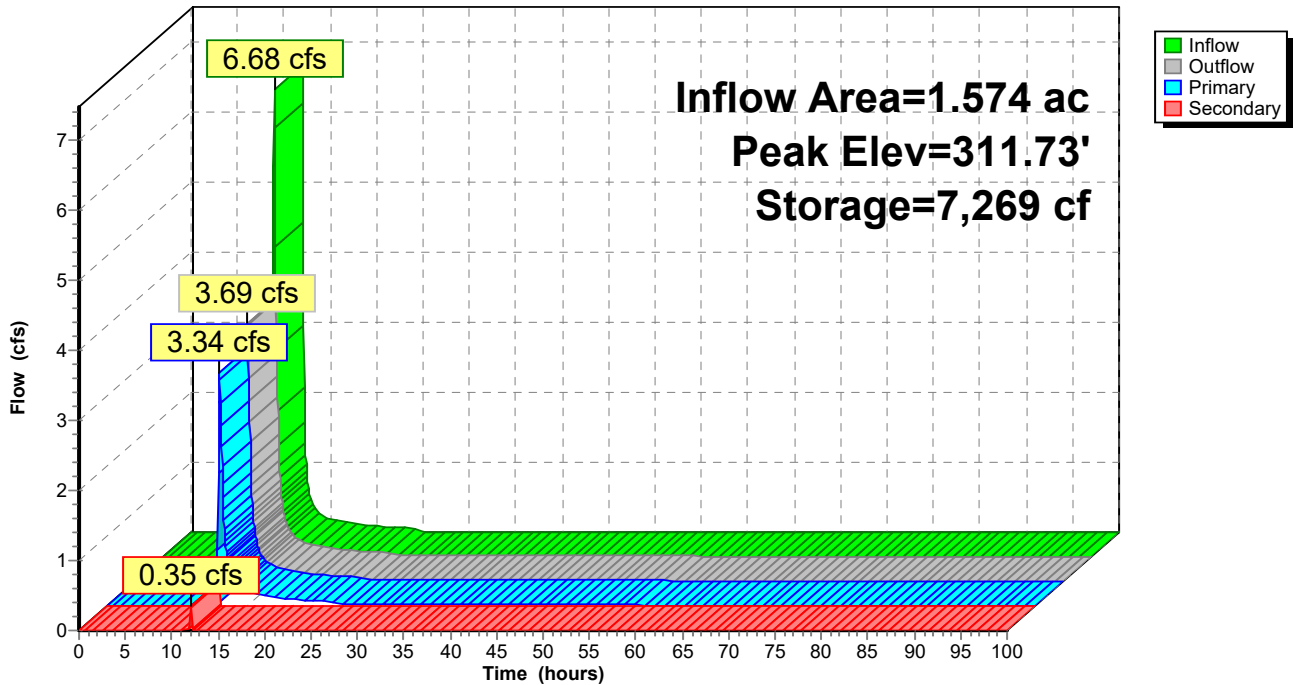
↳ **4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.06 fps)

**Secondary OutFlow** Max=0.31 cfs @ 12.13 hrs HW=311.72' TW=309.71' (Dynamic Tailwater)

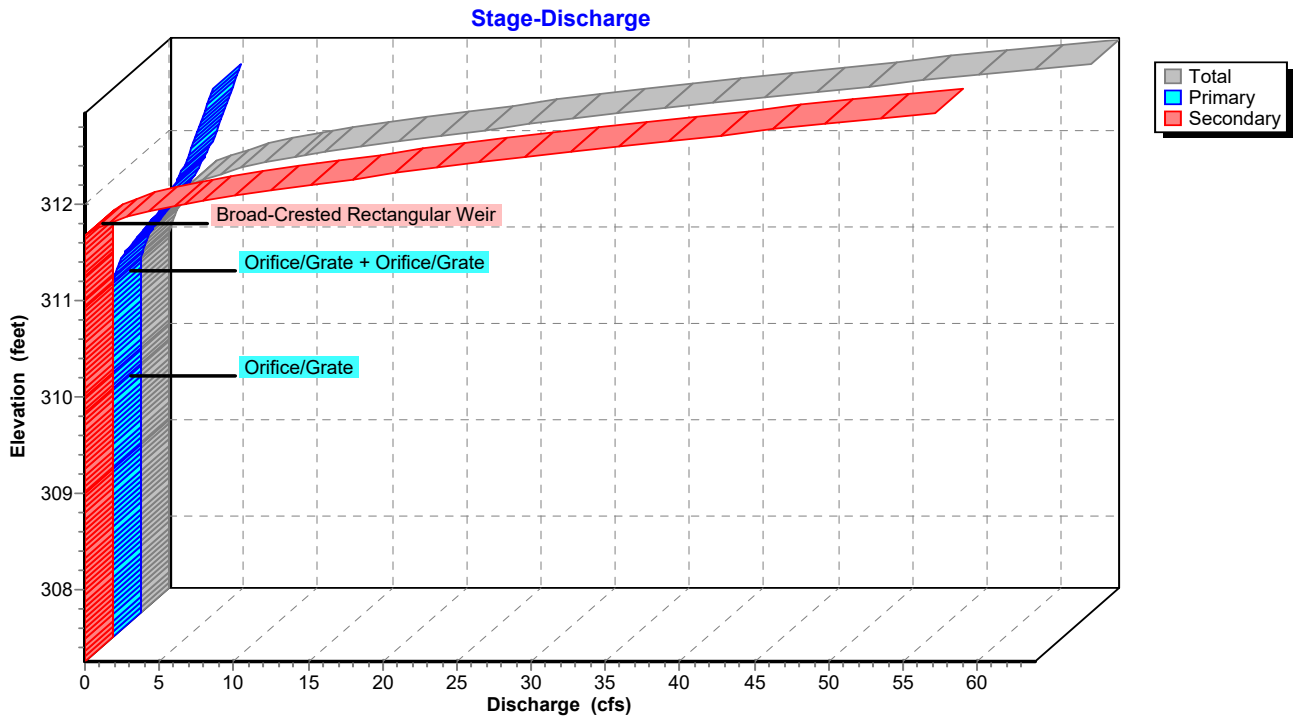
↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.31 cfs @ 0.49 fps)

**Pond 3P: Proposed Stormwater Pond**

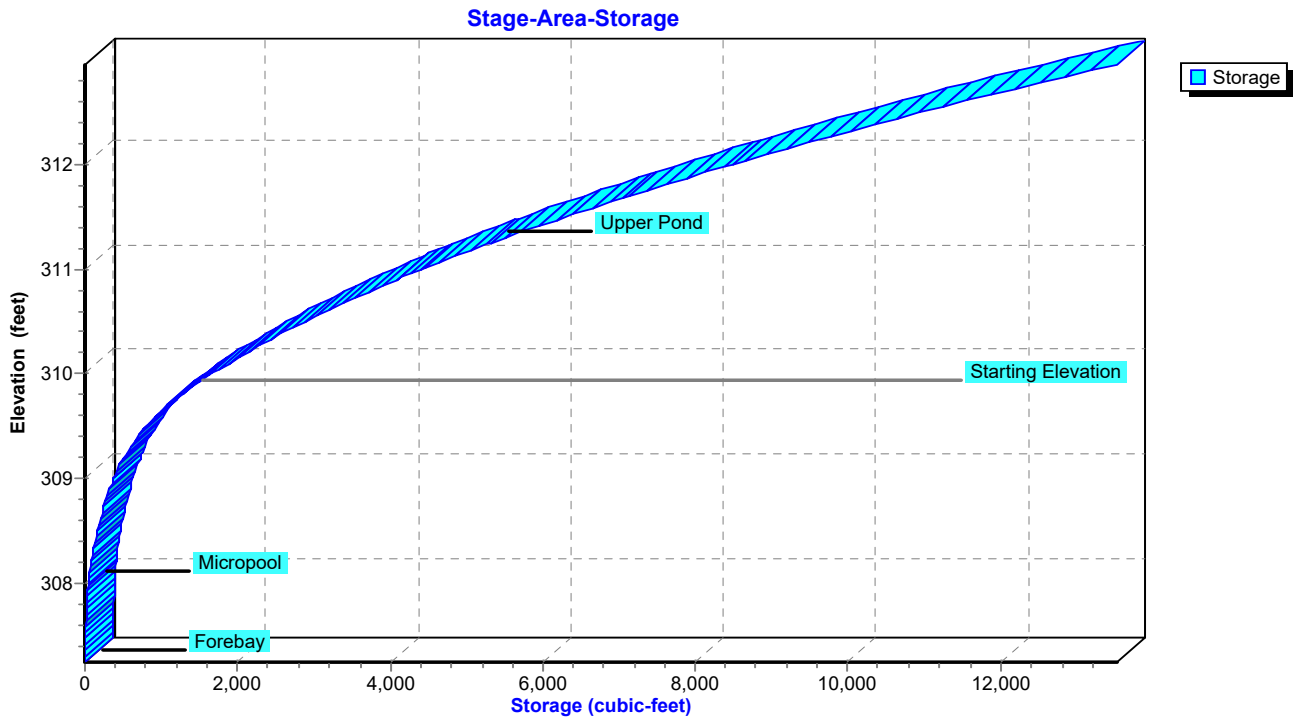
Hydrograph



### Pond 3P: Proposed Stormwater Pond



### Pond 3P: Proposed Stormwater Pond





**Hydrograph for Pond 3P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 2.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.01         | 1,354                | 309.86           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.09</b>  | <b>1,686</b>         | <b>310.02</b>    | <b>0.01</b>   | <b>0.01</b>   | <b>0.00</b>     |
| 12.50        | <b>0.80</b>  | <b>5,900</b>         | <b>311.40</b>    | <b>1.55</b>   | <b>1.55</b>   | <b>0.00</b>     |
| 15.00        | 0.20         | 4,683                | 311.08           | 0.22          | 0.22          | 0.00            |
| 17.50        | 0.13         | 4,544                | 311.04           | 0.14          | 0.14          | 0.00            |
| 20.00        | 0.09         | 4,464                | 311.01           | 0.10          | 0.10          | 0.00            |
| 22.50        | 0.08         | 4,421                | 311.00           | 0.08          | 0.08          | 0.00            |
| 25.00        | 0.00         | 4,282                | 310.96           | 0.04          | 0.04          | 0.00            |
| 27.50        | 0.00         | 4,036                | 310.88           | 0.03          | 0.03          | 0.00            |
| 30.00        | 0.00         | 3,805                | 310.81           | 0.03          | 0.03          | 0.00            |
| 32.50        | 0.00         | 3,583                | 310.74           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,370                | 310.67           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 3,166                | 310.60           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,971                | 310.53           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,787                | 310.46           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,612                | 310.40           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,448                | 310.33           | 0.02          | 0.02          | 0.00            |
| 50.00        | 0.00         | 2,295                | 310.27           | 0.02          | 0.02          | 0.00            |
| 52.50        | 0.00         | 2,152                | 310.22           | 0.02          | 0.02          | 0.00            |
| 55.00        | 0.00         | 2,020                | 310.16           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,900                | 310.11           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,791                | 310.06           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,694                | 310.02           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,610                | 309.98           | 0.01          | 0.01          | 0.00            |
| 67.50        | 0.00         | 1,538                | 309.95           | 0.01          | 0.01          | 0.00            |
| 70.00        | 0.00         | 1,480                | 309.92           | 0.01          | 0.01          | 0.00            |
| 72.50        | 0.00         | 1,435                | 309.90           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,405                | 309.88           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,384                | 309.87           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,370                | 309.86           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,360                | 309.86           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,353                | 309.85           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,347                | 309.85           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,343                | 309.85           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,339                | 309.85           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,336                | 309.85           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,334                | 309.84           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,332                | 309.84           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 307.25              | 0.00               | 0.00             | 0.00               | 312.55              | 38.45              | 5.83             | 32.62              |
| 307.35              | 0.00               | 0.00             | 0.00               | 312.65              | 44.47              | 6.06             | 38.40              |
| 307.45              | 0.00               | 0.00             | 0.00               | 312.75              | 50.72              | 6.29             | 44.44              |
| 307.55              | 0.00               | 0.00             | 0.00               | 312.85              | 57.22              | 6.51             | 50.71              |
| 307.65              | 0.00               | 0.00             | 0.00               | 312.95              | <b>63.89</b>       | <b>6.72</b>      | <b>57.17</b>       |
| 307.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.95              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.05              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.15              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.25              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.35              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.45              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.55              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.65              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.75              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.85              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 310.95              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 311.05              | 0.16               | 0.16             | 0.00               |                     |                    |                  |                    |
| 311.15              | 0.43               | 0.43             | 0.00               |                     |                    |                  |                    |
| 311.25              | 0.82               | 0.82             | 0.00               |                     |                    |                  |                    |
| 311.35              | 1.30               | 1.30             | 0.00               |                     |                    |                  |                    |
| 311.45              | 1.85               | 1.85             | 0.00               |                     |                    |                  |                    |
| 311.55              | 2.42               | 2.42             | 0.00               |                     |                    |                  |                    |
| 311.65              | 2.98               | 2.98             | 0.00               |                     |                    |                  |                    |
| 311.75              | 4.08               | 3.42             | 0.66               |                     |                    |                  |                    |
| 311.85              | 6.29               | 3.80             | 2.49               |                     |                    |                  |                    |
| 311.95              | 9.24               | 4.15             | 5.09               |                     |                    |                  |                    |
| 312.05              | 12.88              | 4.47             | 8.40               |                     |                    |                  |                    |
| 312.15              | 17.23              | 4.78             | 12.45              |                     |                    |                  |                    |
| 312.25              | 22.30              | 5.06             | 17.24              |                     |                    |                  |                    |
| 312.35              | 27.48              | 5.33             | 22.15              |                     |                    |                  |                    |
| 312.45              | 32.78              | 5.58             | 27.19              |                     |                    |                  |                    |

**Stage-Area-Storage for Pond 3P: Proposed Stormwater Pond**

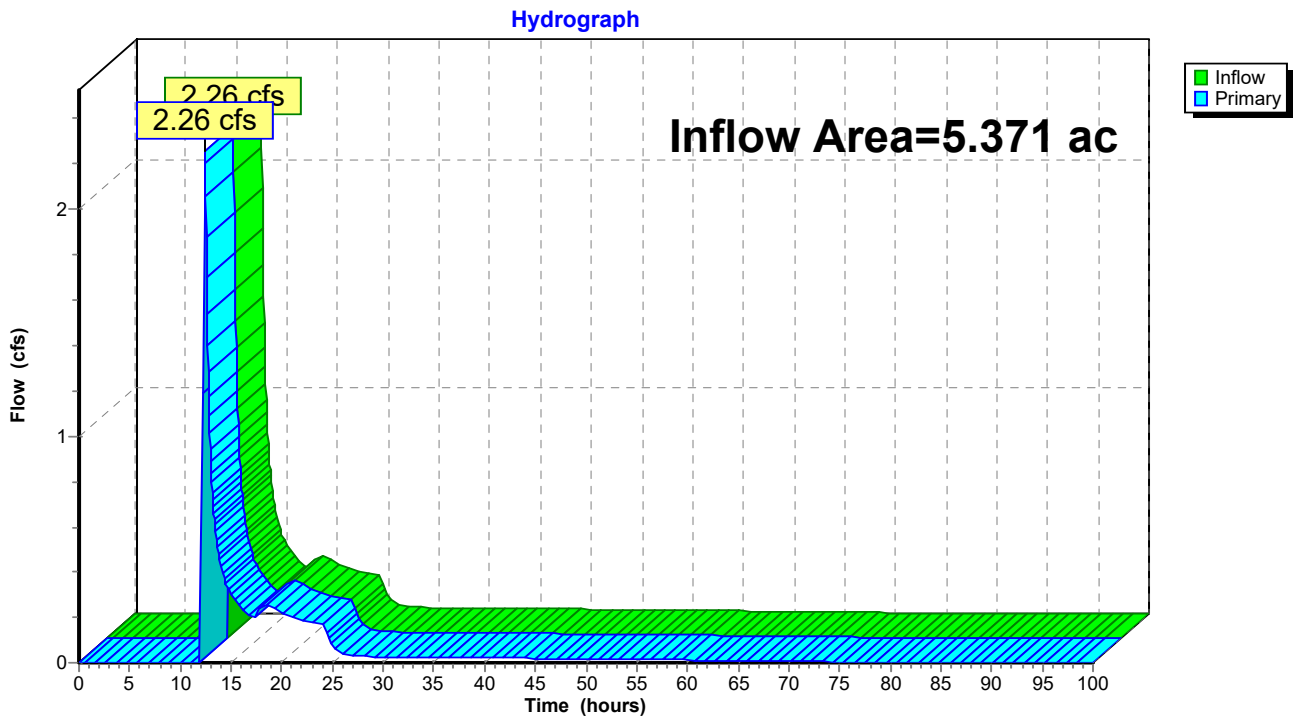
| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
| 307.25              | 0                       | 309.90              | 1,441                   | 312.55              | 11,248                  |
| 307.30              | 1                       | 309.95              | 1,544                   | 312.60              | 11,521                  |
| 307.35              | 3                       | 310.00              | 1,652                   | 312.65              | 11,797                  |
| 307.40              | 4                       | 310.05              | 1,764                   | 312.70              | 12,077                  |
| 307.45              | 6                       | 310.10              | 1,878                   | 312.75              | 12,361                  |
| 307.50              | 8                       | 310.15              | 1,996                   | 312.80              | 12,648                  |
| 307.55              | 10                      | 310.20              | 2,115                   | 312.85              | 12,939                  |
| 307.60              | 13                      | 310.25              | 2,238                   | 312.90              | 13,235                  |
| 307.65              | 15                      | 310.30              | 2,363                   | 312.95              | <b>13,534</b>           |
| 307.70              | 18                      | 310.35              | 2,491                   |                     |                         |
| 307.75              | 22                      | 310.40              | 2,622                   |                     |                         |
| 307.80              | 25                      | 310.45              | 2,756                   |                     |                         |
| 307.85              | 29                      | 310.50              | 2,892                   |                     |                         |
| 307.90              | 34                      | 310.55              | 3,031                   |                     |                         |
| 307.95              | 38                      | 310.60              | 3,173                   |                     |                         |
| 308.00              | 43                      | 310.65              | 3,318                   |                     |                         |
| 308.05              | 52                      | 310.70              | 3,466                   |                     |                         |
| 308.10              | 61                      | 310.75              | 3,617                   |                     |                         |
| 308.15              | 70                      | 310.80              | 3,771                   |                     |                         |
| 308.20              | 81                      | 310.85              | 3,928                   |                     |                         |
| 308.25              | 92                      | 310.90              | 4,088                   |                     |                         |
| 308.30              | 104                     | 310.95              | 4,251                   |                     |                         |
| 308.35              | 117                     | 311.00              | 4,418                   |                     |                         |
| 308.40              | 131                     | 311.05              | 4,588                   |                     |                         |
| 308.45              | 146                     | 311.10              | 4,763                   |                     |                         |
| 308.50              | 161                     | 311.15              | 4,943                   |                     |                         |
| 308.55              | 178                     | 311.20              | 5,127                   |                     |                         |
| 308.60              | 195                     | 311.25              | 5,317                   |                     |                         |
| 308.65              | 214                     | 311.30              | 5,510                   |                     |                         |
| 308.70              | 234                     | 311.35              | 5,706                   |                     |                         |
| 308.75              | 254                     | 311.40              | 5,905                   |                     |                         |
| 308.80              | 276                     | 311.45              | 6,106                   |                     |                         |
| 308.85              | 299                     | 311.50              | 6,309                   |                     |                         |
| 308.90              | 324                     | 311.55              | 6,516                   |                     |                         |
| 308.95              | 349                     | 311.60              | 6,724                   |                     |                         |
| 309.00              | 376                     | 311.65              | 6,936                   |                     |                         |
| 309.05              | 404                     | 311.70              | 7,150                   |                     |                         |
| 309.10              | 436                     | 311.75              | 7,366                   |                     |                         |
| 309.15              | 470                     | 311.80              | 7,586                   |                     |                         |
| 309.20              | 507                     | 311.85              | 7,808                   |                     |                         |
| 309.25              | 548                     | 311.90              | 8,032                   |                     |                         |
| 309.30              | 592                     | 311.95              | 8,260                   |                     |                         |
| 309.35              | 639                     | 312.00              | 8,490                   |                     |                         |
| 309.40              | 691                     | 312.05              | 8,723                   |                     |                         |
| 309.45              | 746                     | 312.10              | 8,960                   |                     |                         |
| 309.50              | 805                     | 312.15              | 9,200                   |                     |                         |
| 309.55              | 868                     | 312.20              | 9,443                   |                     |                         |
| 309.60              | 936                     | 312.25              | 9,690                   |                     |                         |
| 309.65              | 1,008                   | 312.30              | 9,941                   |                     |                         |
| 309.70              | 1,085                   | 312.35              | 10,195                  |                     |                         |
| 309.75              | 1,166                   | 312.40              | 10,453                  |                     |                         |
| 309.80              | 1,253                   | 312.45              | 10,714                  |                     |                         |
| 309.85              | 1,344                   | 312.50              | 10,979                  |                     |                         |

### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth > 0.93" for 25-yr event  
Inflow = 2.26 cfs @ 12.42 hrs, Volume= 0.414 af  
Primary = 2.26 cfs @ 12.42 hrs, Volume= 0.414 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1



**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.02         | 0.00             | 0.02          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 65.00        | 0.01         | 0.00             | 0.01          |
| 13.00        | <b>0.89</b>  | 0.00             | <b>0.89</b>   | 66.00        | 0.01         | 0.00             | 0.01          |
| 14.00        | 0.43         | 0.00             | 0.43          | 67.00        | 0.01         | 0.00             | 0.01          |
| 15.00        | 0.30         | 0.00             | 0.30          | 68.00        | 0.01         | 0.00             | 0.01          |
| 16.00        | 0.24         | 0.00             | 0.24          | 69.00        | 0.01         | 0.00             | 0.01          |
| 17.00        | 0.20         | 0.00             | 0.20          | 70.00        | 0.01         | 0.00             | 0.01          |
| 18.00        | 0.25         | 0.00             | 0.25          | 71.00        | 0.01         | 0.00             | 0.01          |
| 19.00        | 0.25         | 0.00             | 0.25          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.22         | 0.00             | 0.22          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.20         | 0.00             | 0.20          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.19         | 0.00             | 0.19          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.18         | 0.00             | 0.18          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.18         | 0.00             | 0.18          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.07         | 0.00             | 0.07          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.04         | 0.00             | 0.04          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.03         | 0.00             | 0.03          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.03         | 0.00             | 0.03          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.03         | 0.00             | 0.03          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.03         | 0.00             | 0.03          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.03         | 0.00             | 0.03          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.02         | 0.00             | 0.02          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.02         | 0.00             | 0.02          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.02         | 0.00             | 0.02          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 49.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 50.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 51.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 52.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |

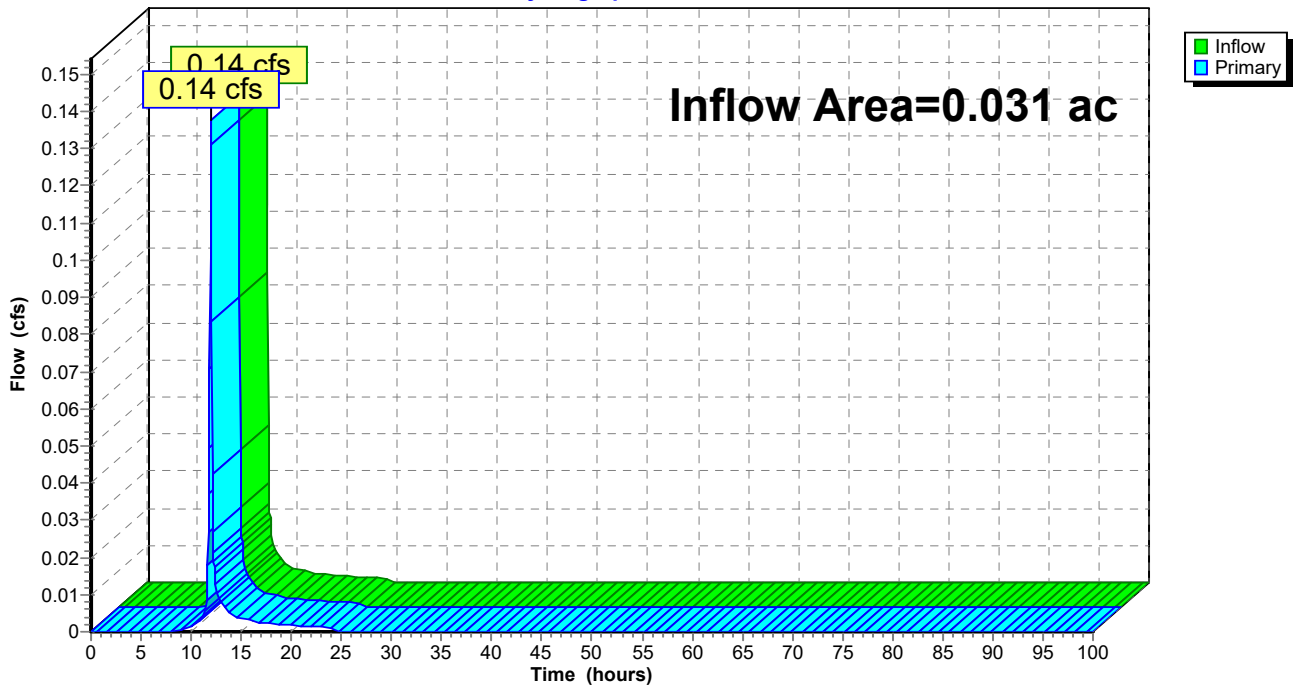
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.031 ac, 3.23% Impervious, Inflow Depth = 2.60" for 25-yr event  
Inflow = 0.14 cfs @ 11.97 hrs, Volume= 0.007 af  
Primary = 0.14 cfs @ 11.97 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.13</b>  | 0.00             | <b>0.13</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.01         | 0.00             | 0.01          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Proposed Stormwater Conditions Final D Soils Fa Type II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |  |
|---|--|
| <b>Subcatchment 1S: Subcat 1</b>            | Runoff Area=3.182 ac 9.18% Impervious Runoff Depth=1.58"<br>Flow Length=499' Tc=10.1 min CN=54 Runoff=7.08 cfs 0.418 af                                      |
| <b>Subcatchment 2aS: Subcat 2a</b>          | Runoff Area=0.830 ac 18.55% Impervious Runoff Depth=4.21"<br>Flow Length=81' Tc=6.7 min CN=82 Runoff=5.76 cfs 0.291 af                                       |
| <b>Subcatchment 2bS: Subcat 2a</b>          | Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=3.79"<br>Flow Length=55' Slope=0.0170 '/' Tc=6.0 min CN=78 Runoff=1.22 cfs 0.060 af                       |
| <b>Subcatchment 2cS: Subcat 2c</b>          | Runoff Area=0.506 ac 47.43% Impervious Runoff Depth=4.86"<br>Flow Length=193' Tc=6.0 min CN=88 Runoff=3.96 cfs 0.205 af                                      |
| <b>Subcatchment 2dS: Subcat 2d</b>          | Runoff Area=0.425 ac 28.00% Impervious Runoff Depth=4.21"<br>Flow Length=156' Tc=7.5 min CN=82 Runoff=2.89 cfs 0.149 af                                      |
| <b>Subcatchment 2eS: Subcat 2e</b>          | Runoff Area=0.238 ac 26.47% Impervious Runoff Depth=4.31"<br>Flow Length=120' Tc=7.9 min CN=83 Runoff=1.63 cfs 0.086 af                                      |
| <b>Subcatchment 3S: Subcat 3</b>            | Runoff Area=0.031 ac 3.23% Impervious Runoff Depth=4.10"<br>Flow Length=13' Slope=0.0779 '/' Tc=6.0 min CN=81 Runoff=0.21 cfs 0.011 af                       |
| <b>Reach 1R: Existing Swale</b>             | Avg. Flow Depth=0.21' Max Vel=2.14 fps Inflow=1.22 cfs 0.338 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=1.19 cfs 0.338 af                |
| <b>Reach 2R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.79' Max Vel=1.44 fps Inflow=5.76 cfs 0.291 af<br>n=0.080 L=390.0' S=0.0154 '/' Capacity=8.93 cfs Outflow=5.01 cfs 0.291 af                 |
| <b>Reach 3R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.97' Max Vel=1.12 fps Inflow=5.44 cfs 0.290 af<br>n=0.100 L=104.0' S=0.0116 '/' Capacity=8.50 cfs Outflow=5.32 cfs 0.290 af                 |
| <b>Reach 4R: Proposed 10" Culvert</b>       | Avg. Flow Depth=0.44' Max Vel=5.35 fps Inflow=1.58 cfs 0.086 af<br>10.0" Round Pipe n=0.010 L=33.0' S=0.0100 '/' Capacity=2.85 cfs Outflow=1.58 cfs 0.086 af |
| <b>Reach 5R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.37' Max Vel=1.38 fps Inflow=1.63 cfs 0.086 af<br>n=0.080 L=136.0' S=0.0328 '/' Capacity=6.51 cfs Outflow=1.58 cfs 0.086 af                 |
| <b>Reach 6R: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=1.00' Max Vel=5.00 fps Inflow=4.14 cfs 0.512 af<br>12.0" Round Pipe n=0.012 L=22.6' S=0.0080 '/' Capacity=3.44 cfs Outflow=3.44 cfs 0.512 af |
| <b>Pond 1ST: Existing Sediment Trap</b>     | Peak Elev=316.65' Storage=0.359 af Inflow=7.08 cfs 0.418 af<br>Outflow=0.94 cfs 0.278 af   |
| <b>Pond 2ST: Existing Sediment Trap</b>     | Peak Elev=310.64' Storage=0.204 af Inflow=11.69 cfs 1.068 af<br>Outflow=9.04 cfs 0.922 af  |
| <b>Pond 3P: Proposed Stormwater Pond</b>    | Peak Elev=311.95' Storage=8,256 cf Inflow=10.26 cfs 0.581 af<br>Primary=4.14 cfs 0.512 af Secondary=5.07 cfs 0.069 af Outflow=9.20 cfs 0.581 af              |



**Link AP1: Analysis Point 1**

Inflow=9.04 cfs 0.922 af  
Primary=9.04 cfs 0.922 af

**Link AP2: Analysis Point 2**

Inflow=0.21 cfs 0.011 af  
Primary=0.21 cfs 0.011 af

**Total Runoff Area = 5.402 ac   Runoff Volume = 1.219 af   Average Runoff Depth = 2.71"**  
**83.91% Pervious = 4.533 ac   16.09% Impervious = 0.869 ac**

**Summary for Subcatchment 1S: Subcat 1**

Runoff = 7.08 cfs @ 12.03 hrs, Volume= 0.418 af, Depth= 1.58"  
 Routed to Pond 1ST : Existing Sediment Trap

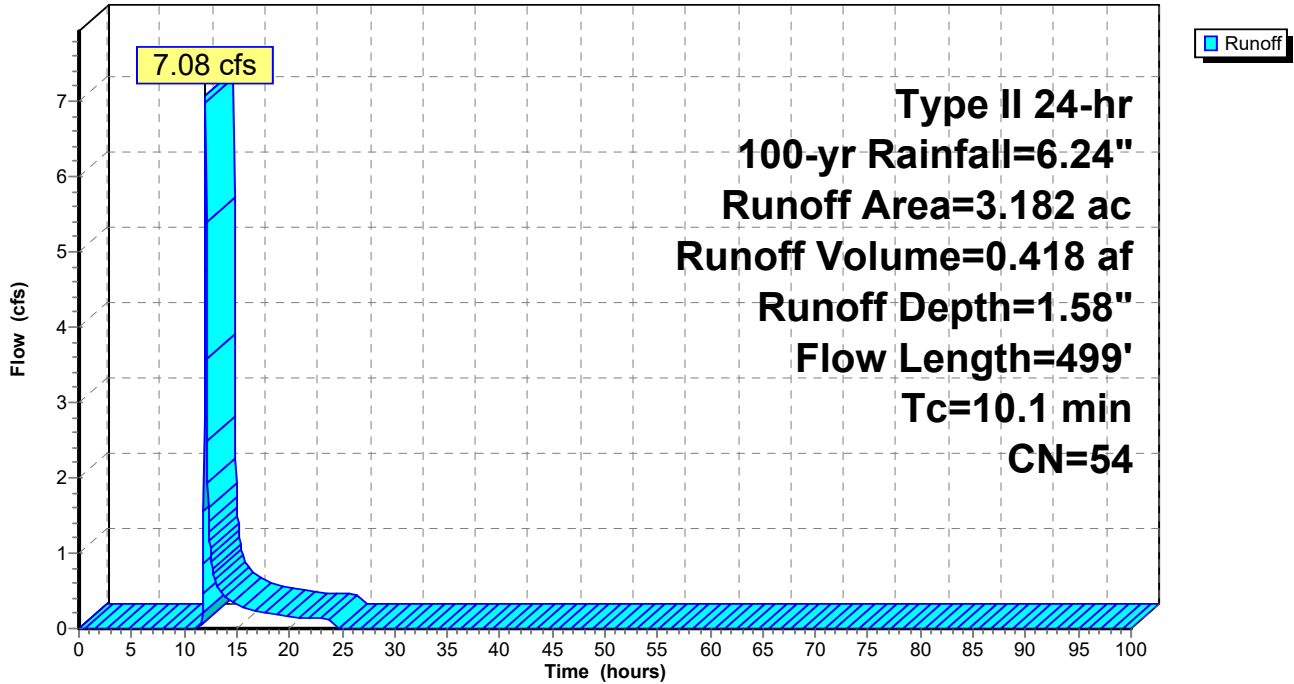
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.022     | 98 | Roofs, HSG A                        |
| 0.005     | 98 | Paved parking, HSG A                |
| 0.127     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.253     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 1.091     | 78 | Meadow, non-grazed, HSG D           |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.182     | 54 | Weighted Average                    |
| 2.890     |    | 90.82% Pervious Area                |
| 0.292     |    | 9.18% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.3      | 69            | 0.0600        | 3.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.1     | 499           | Total         |                   |                |   |

### Subcatchment 1S: Subcat 1

Hydrograph



Hydrograph for Subcatchment 1S: Subcat 1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 1.58            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 1.58            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 1.58            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 1.58            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 1.58            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 1.58            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 1.58            | 0.00         |
| 7.00         | 0.62             | 0.00            | 0.00         | 60.00        | 6.24             | 1.58            | 0.00         |
| 8.00         | 0.75             | 0.00            | 0.00         | 61.00        | 6.24             | 1.58            | 0.00         |
| 9.00         | 0.92             | 0.00            | 0.00         | 62.00        | 6.24             | 1.58            | 0.00         |
| 10.00        | 1.13             | 0.00            | 0.00         | 63.00        | 6.24             | 1.58            | 0.00         |
| 11.00        | 1.47             | 0.00            | 0.00         | 64.00        | 6.24             | 1.58            | 0.00         |
| 12.00        | 4.14             | 0.54            | <b>6.68</b>  | 65.00        | 6.24             | 1.58            | 0.00         |
| 13.00        | 4.82             | 0.83            | <b>0.63</b>  | 66.00        | 6.24             | 1.58            | 0.00         |
| 14.00        | 5.12             | 0.98            | 0.39         | 67.00        | 6.24             | 1.58            | 0.00         |
| 15.00        | 5.33             | 1.08            | 0.31         | 68.00        | 6.24             | 1.58            | 0.00         |
| 16.00        | 5.49             | 1.17            | 0.25         | 69.00        | 6.24             | 1.58            | 0.00         |
| 17.00        | 5.63             | 1.24            | 0.22         | 70.00        | 6.24             | 1.58            | 0.00         |
| 18.00        | 5.75             | 1.30            | 0.20         | 71.00        | 6.24             | 1.58            | 0.00         |
| 19.00        | 5.85             | 1.36            | 0.17         | 72.00        | 6.24             | 1.58            | 0.00         |
| 20.00        | 5.94             | 1.41            | 0.15         | 73.00        | 6.24             | 1.58            | 0.00         |
| 21.00        | 6.02             | 1.45            | 0.14         | 74.00        | 6.24             | 1.58            | 0.00         |
| 22.00        | 6.10             | 1.49            | 0.14         | 75.00        | 6.24             | 1.58            | 0.00         |
| 23.00        | 6.17             | 1.54            | 0.13         | 76.00        | 6.24             | 1.58            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>1.58</b>     | 0.13         | 77.00        | 6.24             | 1.58            | 0.00         |
| 25.00        | 6.24             | 1.58            | 0.00         | 78.00        | 6.24             | 1.58            | 0.00         |
| 26.00        | 6.24             | 1.58            | 0.00         | 79.00        | 6.24             | 1.58            | 0.00         |
| 27.00        | 6.24             | 1.58            | 0.00         | 80.00        | 6.24             | 1.58            | 0.00         |
| 28.00        | 6.24             | 1.58            | 0.00         | 81.00        | 6.24             | 1.58            | 0.00         |
| 29.00        | 6.24             | 1.58            | 0.00         | 82.00        | 6.24             | 1.58            | 0.00         |
| 30.00        | 6.24             | 1.58            | 0.00         | 83.00        | 6.24             | 1.58            | 0.00         |
| 31.00        | 6.24             | 1.58            | 0.00         | 84.00        | 6.24             | 1.58            | 0.00         |
| 32.00        | 6.24             | 1.58            | 0.00         | 85.00        | 6.24             | 1.58            | 0.00         |
| 33.00        | 6.24             | 1.58            | 0.00         | 86.00        | 6.24             | 1.58            | 0.00         |
| 34.00        | 6.24             | 1.58            | 0.00         | 87.00        | 6.24             | 1.58            | 0.00         |
| 35.00        | 6.24             | 1.58            | 0.00         | 88.00        | 6.24             | 1.58            | 0.00         |
| 36.00        | 6.24             | 1.58            | 0.00         | 89.00        | 6.24             | 1.58            | 0.00         |
| 37.00        | 6.24             | 1.58            | 0.00         | 90.00        | 6.24             | 1.58            | 0.00         |
| 38.00        | 6.24             | 1.58            | 0.00         | 91.00        | 6.24             | 1.58            | 0.00         |
| 39.00        | 6.24             | 1.58            | 0.00         | 92.00        | 6.24             | 1.58            | 0.00         |
| 40.00        | 6.24             | 1.58            | 0.00         | 93.00        | 6.24             | 1.58            | 0.00         |
| 41.00        | 6.24             | 1.58            | 0.00         | 94.00        | 6.24             | 1.58            | 0.00         |
| 42.00        | 6.24             | 1.58            | 0.00         | 95.00        | 6.24             | 1.58            | 0.00         |
| 43.00        | 6.24             | 1.58            | 0.00         | 96.00        | 6.24             | 1.58            | 0.00         |
| 44.00        | 6.24             | 1.58            | 0.00         | 97.00        | 6.24             | 1.58            | 0.00         |
| 45.00        | 6.24             | 1.58            | 0.00         | 98.00        | 6.24             | 1.58            | 0.00         |
| 46.00        | 6.24             | 1.58            | 0.00         | 99.00        | 6.24             | 1.58            | 0.00         |
| 47.00        | 6.24             | 1.58            | 0.00         | 100.00       | 6.24             | 1.58            | 0.00         |
| 48.00        | 6.24             | 1.58            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 1.58            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 1.58            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 1.58            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 1.58            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 5.76 cfs @ 11.98 hrs, Volume= 0.291 af, Depth= 4.21"  
 Routed to Reach 2R : Proposed RRv Swale

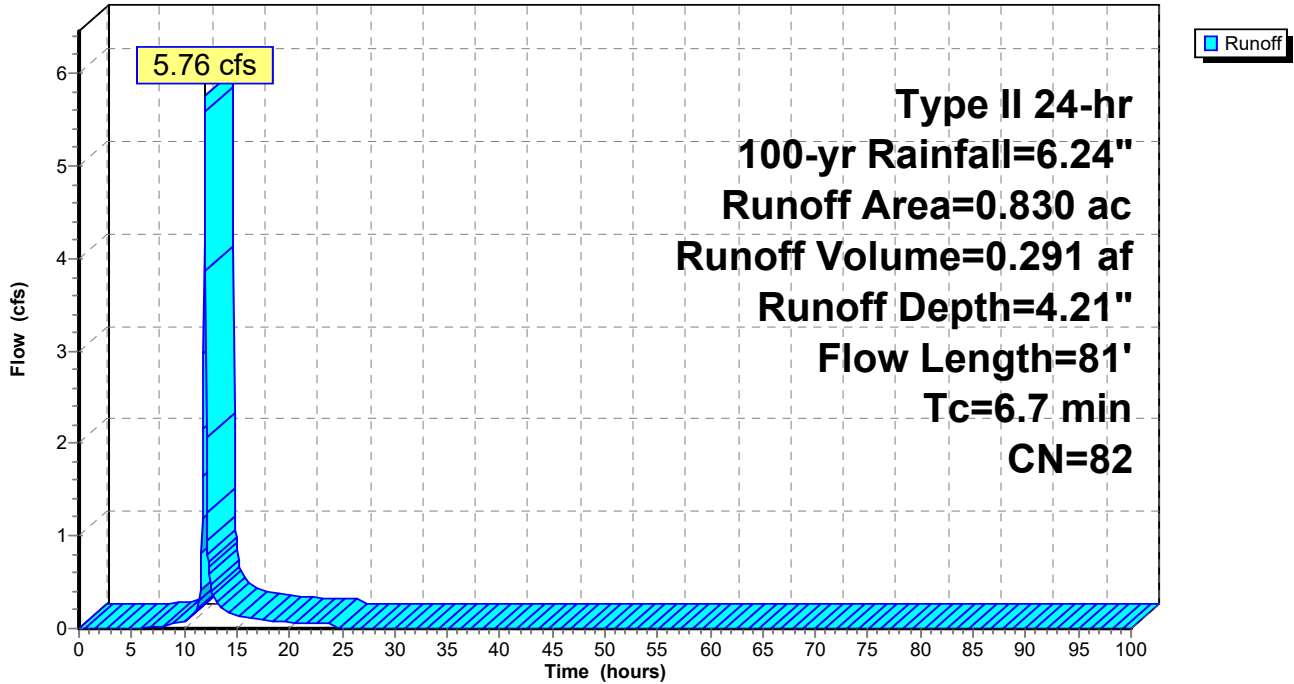
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.480     | 78 | Meadow, non-grazed, HSG D     |
| 0.002     | 71 | Meadow, non-grazed, HSG C     |
| * 0.002   | 98 | Paved parking, HSG D          |
| * 0.152   | 98 | Paved parking, HSG D          |
| 0.194     | 80 | >75% Grass cover, Good, HSG D |
| 0.830     | 82 | Weighted Average              |
| 0.676     |    | 81.45% Pervious Area          |
| 0.154     |    | 18.55% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.2      | 14            | 0.0460        | 1.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59" |
| 1.9      | 20            | 0.0460        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 3.3      | 32            | 0.0310        | 0.16              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 1.3      | 15            | 0.0670        | 0.19              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 6.7      | 81            | Total         |                   |                |   |

### Subcatchment 2aS: Subcat 2a

Hydrograph



**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.21            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.21            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.21            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.21            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.21            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 4.21            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 4.21            | 0.00         |
| 7.00         | 0.62             | 0.01            | 0.01         | 60.00        | 6.24             | 4.21            | 0.00         |
| 8.00         | 0.75             | 0.04            | 0.03         | 61.00        | 6.24             | 4.21            | 0.00         |
| 9.00         | 0.92             | 0.09            | 0.05         | 62.00        | 6.24             | 4.21            | 0.00         |
| 10.00        | 1.13             | 0.17            | 0.08         | 63.00        | 6.24             | 4.21            | 0.00         |
| 11.00        | 1.47             | 0.33            | 0.19         | 64.00        | 6.24             | 4.21            | 0.00         |
| 12.00        | 4.14             | 2.32            | <b>5.58</b>  | 65.00        | 6.24             | 4.21            | 0.00         |
| 13.00        | 4.82             | 2.92            | 0.31         | 66.00        | 6.24             | 4.21            | 0.00         |
| 14.00        | 5.12             | 3.18            | 0.18         | 67.00        | 6.24             | 4.21            | 0.00         |
| 15.00        | 5.33             | 3.37            | 0.14         | 68.00        | 6.24             | 4.21            | 0.00         |
| 16.00        | 5.49             | 3.52            | 0.11         | 69.00        | 6.24             | 4.21            | 0.00         |
| 17.00        | 5.63             | 3.65            | 0.10         | 70.00        | 6.24             | 4.21            | 0.00         |
| 18.00        | 5.75             | 3.76            | 0.09         | 71.00        | 6.24             | 4.21            | 0.00         |
| 19.00        | 5.85             | 3.85            | 0.08         | 72.00        | 6.24             | 4.21            | 0.00         |
| 20.00        | 5.94             | 3.93            | 0.06         | 73.00        | 6.24             | 4.21            | 0.00         |
| 21.00        | 6.02             | 4.01            | 0.06         | 74.00        | 6.24             | 4.21            | 0.00         |
| 22.00        | 6.10             | 4.08            | 0.06         | 75.00        | 6.24             | 4.21            | 0.00         |
| 23.00        | 6.17             | 4.14            | 0.06         | 76.00        | 6.24             | 4.21            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>4.21</b>     | 0.05         | 77.00        | 6.24             | 4.21            | 0.00         |
| 25.00        | 6.24             | 4.21            | 0.00         | 78.00        | 6.24             | 4.21            | 0.00         |
| 26.00        | 6.24             | 4.21            | 0.00         | 79.00        | 6.24             | 4.21            | 0.00         |
| 27.00        | 6.24             | 4.21            | 0.00         | 80.00        | 6.24             | 4.21            | 0.00         |
| 28.00        | 6.24             | 4.21            | 0.00         | 81.00        | 6.24             | 4.21            | 0.00         |
| 29.00        | 6.24             | 4.21            | 0.00         | 82.00        | 6.24             | 4.21            | 0.00         |
| 30.00        | 6.24             | 4.21            | 0.00         | 83.00        | 6.24             | 4.21            | 0.00         |
| 31.00        | 6.24             | 4.21            | 0.00         | 84.00        | 6.24             | 4.21            | 0.00         |
| 32.00        | 6.24             | 4.21            | 0.00         | 85.00        | 6.24             | 4.21            | 0.00         |
| 33.00        | 6.24             | 4.21            | 0.00         | 86.00        | 6.24             | 4.21            | 0.00         |
| 34.00        | 6.24             | 4.21            | 0.00         | 87.00        | 6.24             | 4.21            | 0.00         |
| 35.00        | 6.24             | 4.21            | 0.00         | 88.00        | 6.24             | 4.21            | 0.00         |
| 36.00        | 6.24             | 4.21            | 0.00         | 89.00        | 6.24             | 4.21            | 0.00         |
| 37.00        | 6.24             | 4.21            | 0.00         | 90.00        | 6.24             | 4.21            | 0.00         |
| 38.00        | 6.24             | 4.21            | 0.00         | 91.00        | 6.24             | 4.21            | 0.00         |
| 39.00        | 6.24             | 4.21            | 0.00         | 92.00        | 6.24             | 4.21            | 0.00         |
| 40.00        | 6.24             | 4.21            | 0.00         | 93.00        | 6.24             | 4.21            | 0.00         |
| 41.00        | 6.24             | 4.21            | 0.00         | 94.00        | 6.24             | 4.21            | 0.00         |
| 42.00        | 6.24             | 4.21            | 0.00         | 95.00        | 6.24             | 4.21            | 0.00         |
| 43.00        | 6.24             | 4.21            | 0.00         | 96.00        | 6.24             | 4.21            | 0.00         |
| 44.00        | 6.24             | 4.21            | 0.00         | 97.00        | 6.24             | 4.21            | 0.00         |
| 45.00        | 6.24             | 4.21            | 0.00         | 98.00        | 6.24             | 4.21            | 0.00         |
| 46.00        | 6.24             | 4.21            | 0.00         | 99.00        | 6.24             | 4.21            | 0.00         |
| 47.00        | 6.24             | 4.21            | 0.00         | 100.00       | 6.24             | 4.21            | 0.00         |
| 48.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2bS: Subcat 2a**

Runoff = 1.22 cfs @ 11.97 hrs, Volume= 0.060 af, Depth= 3.79"  
 Routed to Reach 1R : Existing Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

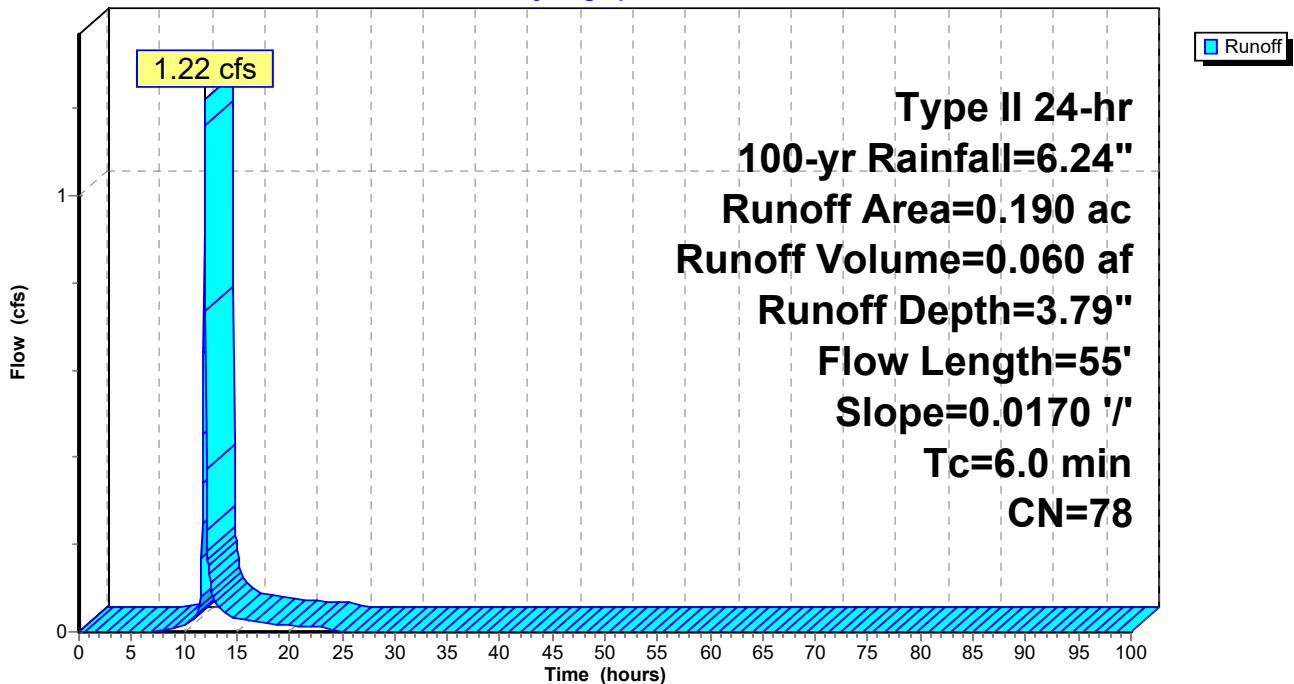
| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.188     | 78 | Meadow, non-grazed, HSG D |
| 0.002     | 71 | Meadow, non-grazed, HSG C |
| 0.190     | 78 | Weighted Average          |
| 0.190     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.0      | 55            | 0.0170                                   | 0.91              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.0      | 55            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 2bS: Subcat 2a**

Hydrograph





**1096 Proposed Stormwater Conditions Final D Soils Fa Type II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2bS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 3.79            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 3.79            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 3.79            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 3.79            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 3.79            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 3.79            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 3.79            | 0.00         |
| 7.00         | 0.62             | 0.00            | 0.00         | 60.00        | 6.24             | 3.79            | 0.00         |
| 8.00         | 0.75             | 0.01            | 0.00         | 61.00        | 6.24             | 3.79            | 0.00         |
| 9.00         | 0.92             | 0.04            | 0.01         | 62.00        | 6.24             | 3.79            | 0.00         |
| 10.00        | 1.13             | 0.09            | 0.01         | 63.00        | 6.24             | 3.79            | 0.00         |
| 11.00        | 1.47             | 0.22            | <b>0.03</b>  | 64.00        | 6.24             | 3.79            | 0.00         |
| 12.00        | 4.14             | 2.00            | <b>1.16</b>  | 65.00        | 6.24             | 3.79            | 0.00         |
| 13.00        | 4.82             | 2.56            | 0.07         | 66.00        | 6.24             | 3.79            | 0.00         |
| 14.00        | 5.12             | 2.81            | 0.04         | 67.00        | 6.24             | 3.79            | 0.00         |
| 15.00        | 5.33             | 2.99            | 0.03         | 68.00        | 6.24             | 3.79            | 0.00         |
| 16.00        | 5.49             | 3.13            | 0.02         | 69.00        | 6.24             | 3.79            | 0.00         |
| 17.00        | 5.63             | 3.25            | 0.02         | 70.00        | 6.24             | 3.79            | 0.00         |
| 18.00        | 5.75             | 3.36            | 0.02         | 71.00        | 6.24             | 3.79            | 0.00         |
| 19.00        | 5.85             | 3.45            | 0.02         | 72.00        | 6.24             | 3.79            | 0.00         |
| 20.00        | 5.94             | 3.53            | 0.01         | 73.00        | 6.24             | 3.79            | 0.00         |
| 21.00        | 6.02             | 3.60            | 0.01         | 74.00        | 6.24             | 3.79            | 0.00         |
| 22.00        | 6.10             | 3.66            | 0.01         | 75.00        | 6.24             | 3.79            | 0.00         |
| 23.00        | 6.17             | 3.73            | 0.01         | 76.00        | 6.24             | 3.79            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>3.79</b>     | 0.01         | 77.00        | 6.24             | 3.79            | 0.00         |
| 25.00        | 6.24             | 3.79            | 0.00         | 78.00        | 6.24             | 3.79            | 0.00         |
| 26.00        | 6.24             | 3.79            | 0.00         | 79.00        | 6.24             | 3.79            | 0.00         |
| 27.00        | 6.24             | 3.79            | 0.00         | 80.00        | 6.24             | 3.79            | 0.00         |
| 28.00        | 6.24             | 3.79            | 0.00         | 81.00        | 6.24             | 3.79            | 0.00         |
| 29.00        | 6.24             | 3.79            | 0.00         | 82.00        | 6.24             | 3.79            | 0.00         |
| 30.00        | 6.24             | 3.79            | 0.00         | 83.00        | 6.24             | 3.79            | 0.00         |
| 31.00        | 6.24             | 3.79            | 0.00         | 84.00        | 6.24             | 3.79            | 0.00         |
| 32.00        | 6.24             | 3.79            | 0.00         | 85.00        | 6.24             | 3.79            | 0.00         |
| 33.00        | 6.24             | 3.79            | 0.00         | 86.00        | 6.24             | 3.79            | 0.00         |
| 34.00        | 6.24             | 3.79            | 0.00         | 87.00        | 6.24             | 3.79            | 0.00         |
| 35.00        | 6.24             | 3.79            | 0.00         | 88.00        | 6.24             | 3.79            | 0.00         |
| 36.00        | 6.24             | 3.79            | 0.00         | 89.00        | 6.24             | 3.79            | 0.00         |
| 37.00        | 6.24             | 3.79            | 0.00         | 90.00        | 6.24             | 3.79            | 0.00         |
| 38.00        | 6.24             | 3.79            | 0.00         | 91.00        | 6.24             | 3.79            | 0.00         |
| 39.00        | 6.24             | 3.79            | 0.00         | 92.00        | 6.24             | 3.79            | 0.00         |
| 40.00        | 6.24             | 3.79            | 0.00         | 93.00        | 6.24             | 3.79            | 0.00         |
| 41.00        | 6.24             | 3.79            | 0.00         | 94.00        | 6.24             | 3.79            | 0.00         |
| 42.00        | 6.24             | 3.79            | 0.00         | 95.00        | 6.24             | 3.79            | 0.00         |
| 43.00        | 6.24             | 3.79            | 0.00         | 96.00        | 6.24             | 3.79            | 0.00         |
| 44.00        | 6.24             | 3.79            | 0.00         | 97.00        | 6.24             | 3.79            | 0.00         |
| 45.00        | 6.24             | 3.79            | 0.00         | 98.00        | 6.24             | 3.79            | 0.00         |
| 46.00        | 6.24             | 3.79            | 0.00         | 99.00        | 6.24             | 3.79            | 0.00         |
| 47.00        | 6.24             | 3.79            | 0.00         | 100.00       | 6.24             | 3.79            | 0.00         |
| 48.00        | 6.24             | 3.79            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 3.79            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 3.79            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 3.79            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 3.79            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2cS: Subcat 2c**

Runoff = 3.96 cfs @ 11.96 hrs, Volume= 0.205 af, Depth= 4.86"  
 Routed to Reach 3R : Proposed RRv Swale

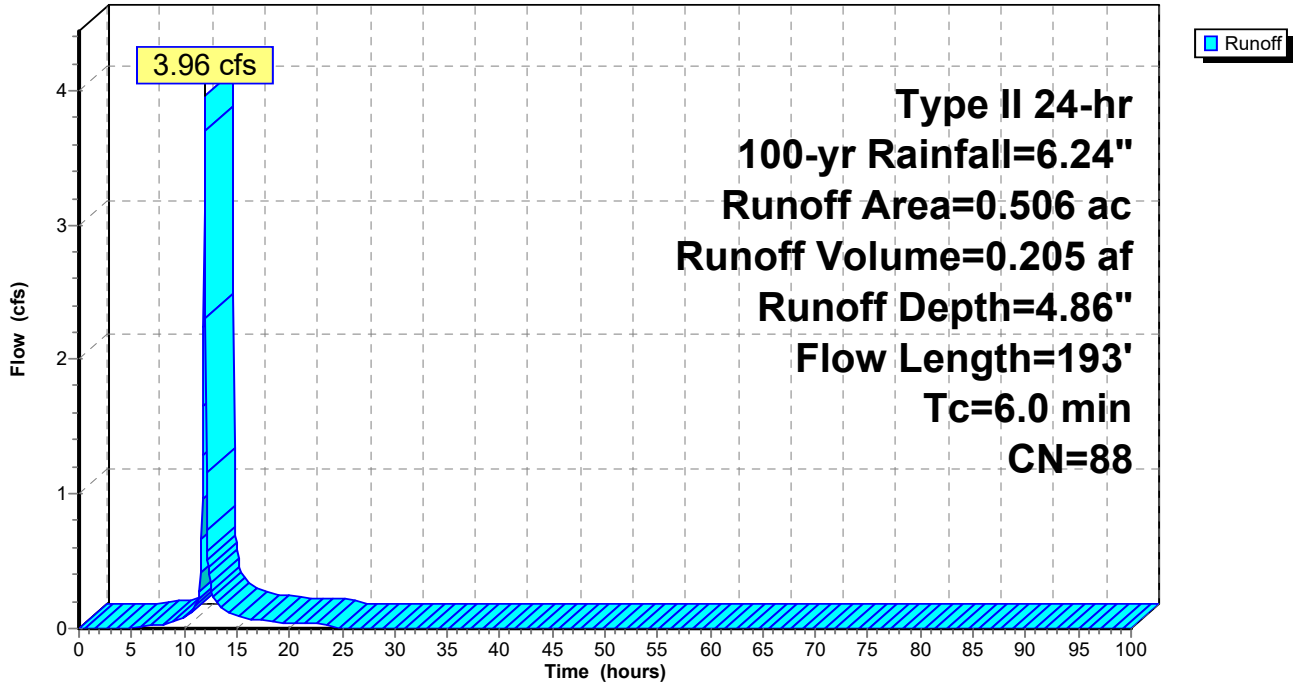
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.143     | 78 | Meadow, non-grazed, HSG D     |
| 0.030     | 71 | Meadow, non-grazed, HSG C     |
| * 0.023   | 89 | Gravel surface, HSG D         |
| * 0.056   | 98 | Paved parking, HSGD           |
| * 0.023   | 98 | Roofs, HSG D                  |
| * 0.113   | 98 | Paved parking, HSG D          |
| 0.070     | 80 | >75% Grass cover, Good, HSG D |
| 0.048     | 98 | Water Surface, HSG D          |
| 0.506     | 88 | Weighted Average              |
| 0.266     |    | 52.57% Pervious Area          |
| 0.240     |    | 47.43% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 0.7      | 45            | 0.0200                                   | 1.05              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.6      | 36            | 0.0200                                   | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 2.9      | 19            | 0.0200                                   | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.1      | 6             | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.0      | 6             | 0.0200                                   | 2.87              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.5      | 43            | 0.0470                                   | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 5.4      | 193           | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

### Subcatchment 2cS: Subcat 2c

Hydrograph



**Hydrograph for Subcatchment 2cS: Subcat 2c**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.86            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.86            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.86            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.86            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.86            | 0.00         |
| 5.00         | 0.39             | 0.01            | 0.01         | 58.00        | 6.24             | 4.86            | 0.00         |
| 6.00         | 0.50             | 0.03            | 0.01         | 59.00        | 6.24             | 4.86            | 0.00         |
| 7.00         | 0.62             | 0.07            | 0.02         | 60.00        | 6.24             | 4.86            | 0.00         |
| 8.00         | 0.75             | 0.12            | 0.03         | 61.00        | 6.24             | 4.86            | 0.00         |
| 9.00         | 0.92             | 0.21            | 0.05         | 62.00        | 6.24             | 4.86            | 0.00         |
| 10.00        | 1.13             | 0.33            | 0.08         | 63.00        | 6.24             | 4.86            | 0.00         |
| 11.00        | 1.47             | 0.56            | <b>0.15</b>  | 64.00        | 6.24             | 4.86            | 0.00         |
| 12.00        | 4.14             | 2.86            | <b>3.70</b>  | 65.00        | 6.24             | 4.86            | 0.00         |
| 13.00        | 4.82             | 3.50            | 0.20         | 66.00        | 6.24             | 4.86            | 0.00         |
| 14.00        | 5.12             | 3.78            | 0.12         | 67.00        | 6.24             | 4.86            | 0.00         |
| 15.00        | 5.33             | 3.98            | 0.09         | 68.00        | 6.24             | 4.86            | 0.00         |
| 16.00        | 5.49             | 4.14            | 0.07         | 69.00        | 6.24             | 4.86            | 0.00         |
| 17.00        | 5.63             | 4.27            | 0.06         | 70.00        | 6.24             | 4.86            | 0.00         |
| 18.00        | 5.75             | 4.38            | 0.06         | 71.00        | 6.24             | 4.86            | 0.00         |
| 19.00        | 5.85             | 4.48            | 0.05         | 72.00        | 6.24             | 4.86            | 0.00         |
| 20.00        | 5.94             | 4.57            | 0.04         | 73.00        | 6.24             | 4.86            | 0.00         |
| 21.00        | 6.02             | 4.65            | 0.04         | 74.00        | 6.24             | 4.86            | 0.00         |
| 22.00        | 6.10             | 4.72            | 0.04         | 75.00        | 6.24             | 4.86            | 0.00         |
| 23.00        | 6.17             | 4.79            | 0.04         | 76.00        | 6.24             | 4.86            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>4.86</b>     | 0.03         | 77.00        | 6.24             | 4.86            | 0.00         |
| 25.00        | 6.24             | 4.86            | 0.00         | 78.00        | 6.24             | 4.86            | 0.00         |
| 26.00        | 6.24             | 4.86            | 0.00         | 79.00        | 6.24             | 4.86            | 0.00         |
| 27.00        | 6.24             | 4.86            | 0.00         | 80.00        | 6.24             | 4.86            | 0.00         |
| 28.00        | 6.24             | 4.86            | 0.00         | 81.00        | 6.24             | 4.86            | 0.00         |
| 29.00        | 6.24             | 4.86            | 0.00         | 82.00        | 6.24             | 4.86            | 0.00         |
| 30.00        | 6.24             | 4.86            | 0.00         | 83.00        | 6.24             | 4.86            | 0.00         |
| 31.00        | 6.24             | 4.86            | 0.00         | 84.00        | 6.24             | 4.86            | 0.00         |
| 32.00        | 6.24             | 4.86            | 0.00         | 85.00        | 6.24             | 4.86            | 0.00         |
| 33.00        | 6.24             | 4.86            | 0.00         | 86.00        | 6.24             | 4.86            | 0.00         |
| 34.00        | 6.24             | 4.86            | 0.00         | 87.00        | 6.24             | 4.86            | 0.00         |
| 35.00        | 6.24             | 4.86            | 0.00         | 88.00        | 6.24             | 4.86            | 0.00         |
| 36.00        | 6.24             | 4.86            | 0.00         | 89.00        | 6.24             | 4.86            | 0.00         |
| 37.00        | 6.24             | 4.86            | 0.00         | 90.00        | 6.24             | 4.86            | 0.00         |
| 38.00        | 6.24             | 4.86            | 0.00         | 91.00        | 6.24             | 4.86            | 0.00         |
| 39.00        | 6.24             | 4.86            | 0.00         | 92.00        | 6.24             | 4.86            | 0.00         |
| 40.00        | 6.24             | 4.86            | 0.00         | 93.00        | 6.24             | 4.86            | 0.00         |
| 41.00        | 6.24             | 4.86            | 0.00         | 94.00        | 6.24             | 4.86            | 0.00         |
| 42.00        | 6.24             | 4.86            | 0.00         | 95.00        | 6.24             | 4.86            | 0.00         |
| 43.00        | 6.24             | 4.86            | 0.00         | 96.00        | 6.24             | 4.86            | 0.00         |
| 44.00        | 6.24             | 4.86            | 0.00         | 97.00        | 6.24             | 4.86            | 0.00         |
| 45.00        | 6.24             | 4.86            | 0.00         | 98.00        | 6.24             | 4.86            | 0.00         |
| 46.00        | 6.24             | 4.86            | 0.00         | 99.00        | 6.24             | 4.86            | 0.00         |
| 47.00        | 6.24             | 4.86            | 0.00         | 100.00       | 6.24             | 4.86            | 0.00         |
| 48.00        | 6.24             | 4.86            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.86            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.86            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.86            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.86            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2dS: Subcat 2d**

Runoff = 2.89 cfs @ 11.99 hrs, Volume= 0.149 af, Depth= 4.21"  
 Routed to Pond 2ST : Existing Sediment Trap

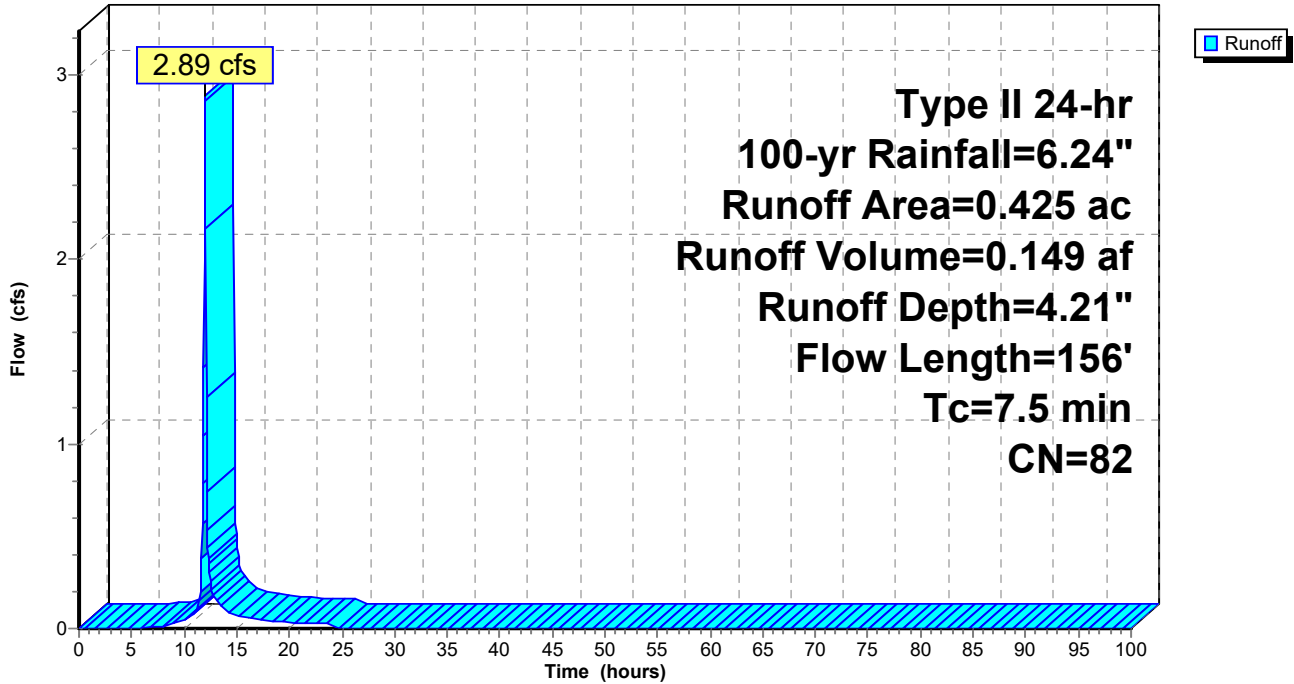
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.089     | 78 | Meadow, non-grazed, HSG D |
| 0.160     | 71 | Meadow, non-grazed, HSG C |
| * 0.013   | 98 | Water Surface, HSG D      |
| 0.106     | 98 | Water Surface, HSG C      |
| * 0.017   | 89 | Gravel surface, HSG D     |
| * 0.040   | 89 | Gravel surface, HSG C     |
| 0.425     | 82 | Weighted Average          |
| 0.306     |    | 72.00% Pervious Area      |
| 0.119     |    | 28.00% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 7.0      | 91            | 0.0380        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.1      | 8             | 0.0420        | 1.00              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.1      | 14            | 0.0420        | 3.30              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.2      | 29            | 0.0290        | 2.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.5      | 156           | Total         |                   |                |   |

Subcatchment 2dS: Subcat 2d

Hydrograph



**Hydrograph for Subcatchment 2dS: Subcat 2d**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.21            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.21            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.21            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.21            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.21            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 4.21            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 4.21            | 0.00         |
| 7.00         | 0.62             | 0.01            | 0.01         | 60.00        | 6.24             | 4.21            | 0.00         |
| 8.00         | 0.75             | 0.04            | 0.01         | 61.00        | 6.24             | 4.21            | 0.00         |
| 9.00         | 0.92             | 0.09            | 0.03         | 62.00        | 6.24             | 4.21            | 0.00         |
| 10.00        | 1.13             | 0.17            | 0.04         | 63.00        | 6.24             | 4.21            | 0.00         |
| 11.00        | 1.47             | 0.33            | 0.09         | 64.00        | 6.24             | 4.21            | 0.00         |
| 12.00        | 4.14             | 2.32            | <b>2.85</b>  | 65.00        | 6.24             | 4.21            | 0.00         |
| 13.00        | 4.82             | 2.92            | 0.16         | 66.00        | 6.24             | 4.21            | 0.00         |
| 14.00        | 5.12             | 3.18            | 0.09         | 67.00        | 6.24             | 4.21            | 0.00         |
| 15.00        | 5.33             | 3.37            | 0.07         | 68.00        | 6.24             | 4.21            | 0.00         |
| 16.00        | 5.49             | 3.52            | 0.06         | 69.00        | 6.24             | 4.21            | 0.00         |
| 17.00        | 5.63             | 3.65            | 0.05         | 70.00        | 6.24             | 4.21            | 0.00         |
| 18.00        | 5.75             | 3.76            | 0.04         | 71.00        | 6.24             | 4.21            | 0.00         |
| 19.00        | 5.85             | 3.85            | 0.04         | 72.00        | 6.24             | 4.21            | 0.00         |
| 20.00        | 5.94             | 3.93            | 0.03         | 73.00        | 6.24             | 4.21            | 0.00         |
| 21.00        | 6.02             | 4.01            | 0.03         | 74.00        | 6.24             | 4.21            | 0.00         |
| 22.00        | 6.10             | 4.08            | 0.03         | 75.00        | 6.24             | 4.21            | 0.00         |
| 23.00        | 6.17             | 4.14            | 0.03         | 76.00        | 6.24             | 4.21            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>4.21</b>     | 0.03         | 77.00        | 6.24             | 4.21            | 0.00         |
| 25.00        | 6.24             | 4.21            | 0.00         | 78.00        | 6.24             | 4.21            | 0.00         |
| 26.00        | 6.24             | 4.21            | 0.00         | 79.00        | 6.24             | 4.21            | 0.00         |
| 27.00        | 6.24             | 4.21            | 0.00         | 80.00        | 6.24             | 4.21            | 0.00         |
| 28.00        | 6.24             | 4.21            | 0.00         | 81.00        | 6.24             | 4.21            | 0.00         |
| 29.00        | 6.24             | 4.21            | 0.00         | 82.00        | 6.24             | 4.21            | 0.00         |
| 30.00        | 6.24             | 4.21            | 0.00         | 83.00        | 6.24             | 4.21            | 0.00         |
| 31.00        | 6.24             | 4.21            | 0.00         | 84.00        | 6.24             | 4.21            | 0.00         |
| 32.00        | 6.24             | 4.21            | 0.00         | 85.00        | 6.24             | 4.21            | 0.00         |
| 33.00        | 6.24             | 4.21            | 0.00         | 86.00        | 6.24             | 4.21            | 0.00         |
| 34.00        | 6.24             | 4.21            | 0.00         | 87.00        | 6.24             | 4.21            | 0.00         |
| 35.00        | 6.24             | 4.21            | 0.00         | 88.00        | 6.24             | 4.21            | 0.00         |
| 36.00        | 6.24             | 4.21            | 0.00         | 89.00        | 6.24             | 4.21            | 0.00         |
| 37.00        | 6.24             | 4.21            | 0.00         | 90.00        | 6.24             | 4.21            | 0.00         |
| 38.00        | 6.24             | 4.21            | 0.00         | 91.00        | 6.24             | 4.21            | 0.00         |
| 39.00        | 6.24             | 4.21            | 0.00         | 92.00        | 6.24             | 4.21            | 0.00         |
| 40.00        | 6.24             | 4.21            | 0.00         | 93.00        | 6.24             | 4.21            | 0.00         |
| 41.00        | 6.24             | 4.21            | 0.00         | 94.00        | 6.24             | 4.21            | 0.00         |
| 42.00        | 6.24             | 4.21            | 0.00         | 95.00        | 6.24             | 4.21            | 0.00         |
| 43.00        | 6.24             | 4.21            | 0.00         | 96.00        | 6.24             | 4.21            | 0.00         |
| 44.00        | 6.24             | 4.21            | 0.00         | 97.00        | 6.24             | 4.21            | 0.00         |
| 45.00        | 6.24             | 4.21            | 0.00         | 98.00        | 6.24             | 4.21            | 0.00         |
| 46.00        | 6.24             | 4.21            | 0.00         | 99.00        | 6.24             | 4.21            | 0.00         |
| 47.00        | 6.24             | 4.21            | 0.00         | 100.00       | 6.24             | 4.21            | 0.00         |
| 48.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.21            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2eS: Subcat 2e**

Runoff = 1.63 cfs @ 11.99 hrs, Volume= 0.086 af, Depth= 4.31"  
 Routed to Reach 5R : Proposed RRv Swale

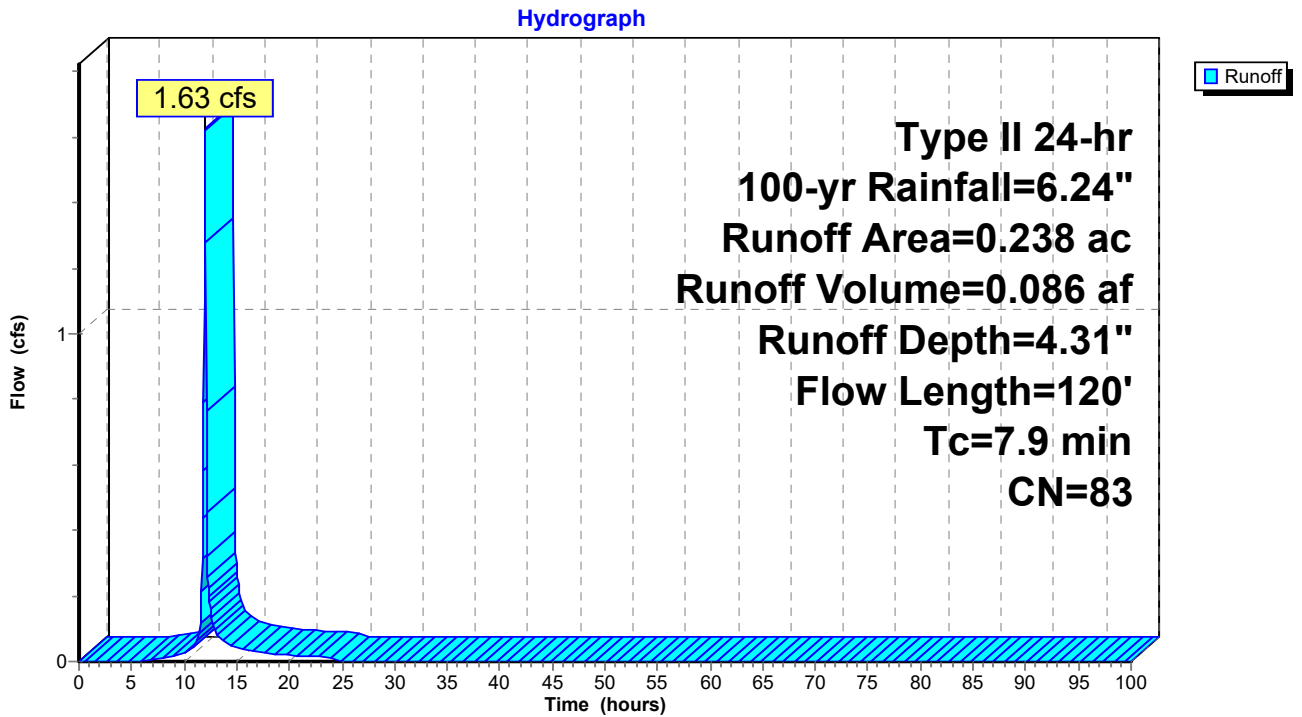
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.175     | 78 | Meadow, non-grazed, HSG D |
| * 0.063   | 98 | Paved parking, HSG D      |
| 0.238     | 83 | Weighted Average          |
| 0.175     |    | 73.53% Pervious Area      |
| 0.063     |    | 26.47% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 2.3      | 17            | 0.0286        | 0.12              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.9      | 11            | 0.0201        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.4      | 25            | 0.0200        | 0.94              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.9      | 52            | 0.0192        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 15            | 0.0194        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 7.9      | 120           | Total         |                   |                |   |



Subcatchment 2eS: Subcat 2e



**Hydrograph for Subcatchment 2eS: Subcat 2e**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.31            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.31            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.31            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.31            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.31            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 4.31            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 4.31            | 0.00         |
| 7.00         | 0.62             | 0.02            | 0.00         | 60.00        | 6.24             | 4.31            | 0.00         |
| 8.00         | 0.75             | 0.05            | 0.01         | 61.00        | 6.24             | 4.31            | 0.00         |
| 9.00         | 0.92             | 0.10            | 0.02         | 62.00        | 6.24             | 4.31            | 0.00         |
| 10.00        | 1.13             | 0.19            | 0.03         | 63.00        | 6.24             | 4.31            | 0.00         |
| 11.00        | 1.47             | 0.36            | 0.06         | 64.00        | 6.24             | 4.31            | 0.00         |
| 12.00        | 4.14             | 2.41            | <b>1.62</b>  | 65.00        | 6.24             | 4.31            | 0.00         |
| 13.00        | 4.82             | 3.01            | 0.09         | 66.00        | 6.24             | 4.31            | 0.00         |
| 14.00        | 5.12             | 3.28            | 0.05         | 67.00        | 6.24             | 4.31            | 0.00         |
| 15.00        | 5.33             | 3.47            | 0.04         | 68.00        | 6.24             | 4.31            | 0.00         |
| 16.00        | 5.49             | 3.62            | 0.03         | 69.00        | 6.24             | 4.31            | 0.00         |
| 17.00        | 5.63             | 3.75            | 0.03         | 70.00        | 6.24             | 4.31            | 0.00         |
| 18.00        | 5.75             | 3.86            | 0.03         | 71.00        | 6.24             | 4.31            | 0.00         |
| 19.00        | 5.85             | 3.95            | 0.02         | 72.00        | 6.24             | 4.31            | 0.00         |
| 20.00        | 5.94             | 4.04            | 0.02         | 73.00        | 6.24             | 4.31            | 0.00         |
| 21.00        | 6.02             | 4.11            | 0.02         | 74.00        | 6.24             | 4.31            | 0.00         |
| 22.00        | 6.10             | 4.18            | 0.02         | 75.00        | 6.24             | 4.31            | 0.00         |
| 23.00        | 6.17             | 4.25            | 0.02         | 76.00        | 6.24             | 4.31            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>4.31</b>     | 0.02         | 77.00        | 6.24             | 4.31            | 0.00         |
| 25.00        | 6.24             | 4.31            | 0.00         | 78.00        | 6.24             | 4.31            | 0.00         |
| 26.00        | 6.24             | 4.31            | 0.00         | 79.00        | 6.24             | 4.31            | 0.00         |
| 27.00        | 6.24             | 4.31            | 0.00         | 80.00        | 6.24             | 4.31            | 0.00         |
| 28.00        | 6.24             | 4.31            | 0.00         | 81.00        | 6.24             | 4.31            | 0.00         |
| 29.00        | 6.24             | 4.31            | 0.00         | 82.00        | 6.24             | 4.31            | 0.00         |
| 30.00        | 6.24             | 4.31            | 0.00         | 83.00        | 6.24             | 4.31            | 0.00         |
| 31.00        | 6.24             | 4.31            | 0.00         | 84.00        | 6.24             | 4.31            | 0.00         |
| 32.00        | 6.24             | 4.31            | 0.00         | 85.00        | 6.24             | 4.31            | 0.00         |
| 33.00        | 6.24             | 4.31            | 0.00         | 86.00        | 6.24             | 4.31            | 0.00         |
| 34.00        | 6.24             | 4.31            | 0.00         | 87.00        | 6.24             | 4.31            | 0.00         |
| 35.00        | 6.24             | 4.31            | 0.00         | 88.00        | 6.24             | 4.31            | 0.00         |
| 36.00        | 6.24             | 4.31            | 0.00         | 89.00        | 6.24             | 4.31            | 0.00         |
| 37.00        | 6.24             | 4.31            | 0.00         | 90.00        | 6.24             | 4.31            | 0.00         |
| 38.00        | 6.24             | 4.31            | 0.00         | 91.00        | 6.24             | 4.31            | 0.00         |
| 39.00        | 6.24             | 4.31            | 0.00         | 92.00        | 6.24             | 4.31            | 0.00         |
| 40.00        | 6.24             | 4.31            | 0.00         | 93.00        | 6.24             | 4.31            | 0.00         |
| 41.00        | 6.24             | 4.31            | 0.00         | 94.00        | 6.24             | 4.31            | 0.00         |
| 42.00        | 6.24             | 4.31            | 0.00         | 95.00        | 6.24             | 4.31            | 0.00         |
| 43.00        | 6.24             | 4.31            | 0.00         | 96.00        | 6.24             | 4.31            | 0.00         |
| 44.00        | 6.24             | 4.31            | 0.00         | 97.00        | 6.24             | 4.31            | 0.00         |
| 45.00        | 6.24             | 4.31            | 0.00         | 98.00        | 6.24             | 4.31            | 0.00         |
| 46.00        | 6.24             | 4.31            | 0.00         | 99.00        | 6.24             | 4.31            | 0.00         |
| 47.00        | 6.24             | 4.31            | 0.00         | 100.00       | 6.24             | 4.31            | 0.00         |
| 48.00        | 6.24             | 4.31            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.31            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.31            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.31            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.31            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.011 af, Depth= 4.10"  
 Routed to Link AP2 : Analysis Point 2

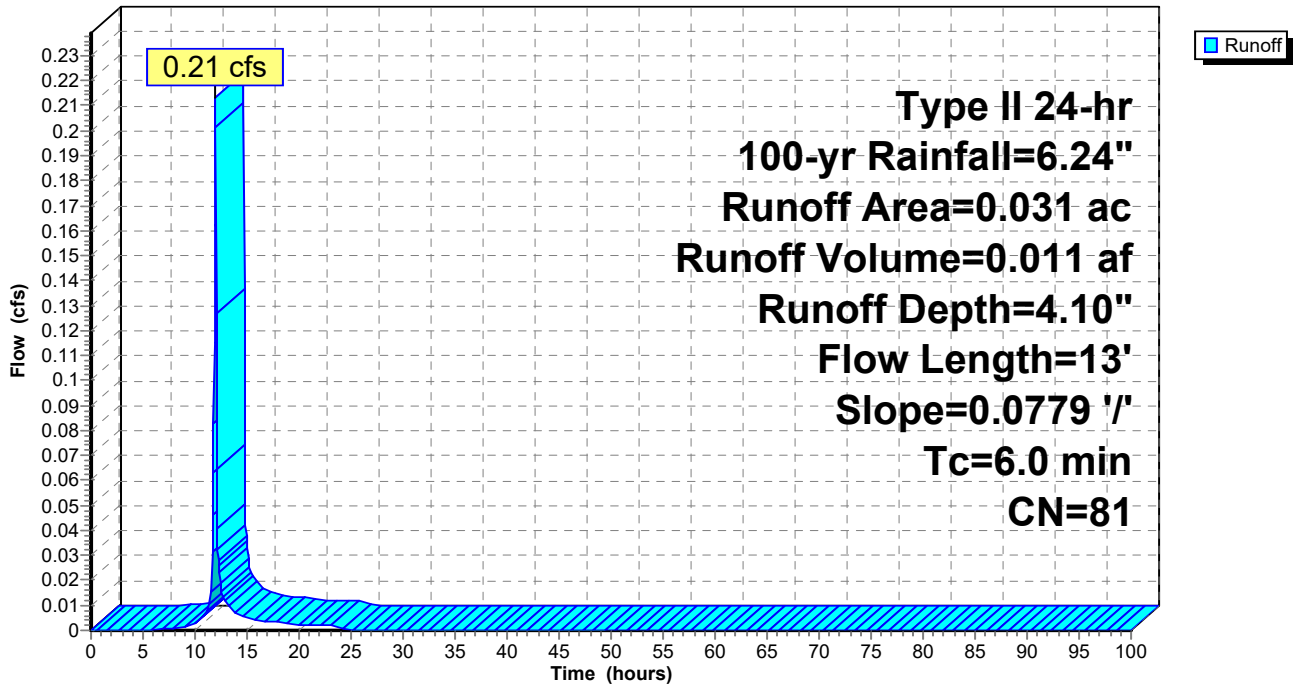
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.001     | 98 | Paved roads w/curbs & sewers, HSG D |
| 0.030     | 80 | >75% Grass cover, Good, HSG D       |
| 0.031     | 81 | Weighted Average                    |
| 0.030     |    | 96.77% Pervious Area                |
| 0.001     |    | 3.23% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.2      | 13            | 0.0779                                   | 0.18              |                | Sheet Flow, Hydro Flow<br>Grass: Short n= 0.150 P2= 2.59" |
| 1.2      | 13            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



Hydrograph for Subcatchment 3S: Subcat 3

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 4.10            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 4.10            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 4.10            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 4.10            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 4.10            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 4.10            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 4.10            | 0.00         |
| 7.00         | 0.62             | 0.01            | 0.00         | 60.00        | 6.24             | 4.10            | 0.00         |
| 8.00         | 0.75             | 0.03            | 0.00         | 61.00        | 6.24             | 4.10            | 0.00         |
| 9.00         | 0.92             | 0.07            | 0.00         | 62.00        | 6.24             | 4.10            | 0.00         |
| 10.00        | 1.13             | 0.15            | 0.00         | 63.00        | 6.24             | 4.10            | 0.00         |
| 11.00        | 1.47             | 0.30            | 0.01         | 64.00        | 6.24             | 4.10            | 0.00         |
| 12.00        | 4.14             | 2.24            | 0.20         | 65.00        | 6.24             | 4.10            | 0.00         |
| 13.00        | 4.82             | 2.82            | 0.01         | 66.00        | 6.24             | 4.10            | 0.00         |
| 14.00        | 5.12             | 3.09            | 0.01         | 67.00        | 6.24             | 4.10            | 0.00         |
| 15.00        | 5.33             | 3.27            | 0.01         | 68.00        | 6.24             | 4.10            | 0.00         |
| 16.00        | 5.49             | 3.42            | 0.00         | 69.00        | 6.24             | 4.10            | 0.00         |
| 17.00        | 5.63             | 3.55            | 0.00         | 70.00        | 6.24             | 4.10            | 0.00         |
| 18.00        | 5.75             | 3.65            | 0.00         | 71.00        | 6.24             | 4.10            | 0.00         |
| 19.00        | 5.85             | 3.75            | 0.00         | 72.00        | 6.24             | 4.10            | 0.00         |
| 20.00        | 5.94             | 3.83            | 0.00         | 73.00        | 6.24             | 4.10            | 0.00         |
| 21.00        | 6.02             | 3.90            | 0.00         | 74.00        | 6.24             | 4.10            | 0.00         |
| 22.00        | 6.10             | 3.97            | 0.00         | 75.00        | 6.24             | 4.10            | 0.00         |
| 23.00        | 6.17             | 4.04            | 0.00         | 76.00        | 6.24             | 4.10            | 0.00         |
| 24.00        | 6.24             | 4.10            | 0.00         | 77.00        | 6.24             | 4.10            | 0.00         |
| 25.00        | 6.24             | 4.10            | 0.00         | 78.00        | 6.24             | 4.10            | 0.00         |
| 26.00        | 6.24             | 4.10            | 0.00         | 79.00        | 6.24             | 4.10            | 0.00         |
| 27.00        | 6.24             | 4.10            | 0.00         | 80.00        | 6.24             | 4.10            | 0.00         |
| 28.00        | 6.24             | 4.10            | 0.00         | 81.00        | 6.24             | 4.10            | 0.00         |
| 29.00        | 6.24             | 4.10            | 0.00         | 82.00        | 6.24             | 4.10            | 0.00         |
| 30.00        | 6.24             | 4.10            | 0.00         | 83.00        | 6.24             | 4.10            | 0.00         |
| 31.00        | 6.24             | 4.10            | 0.00         | 84.00        | 6.24             | 4.10            | 0.00         |
| 32.00        | 6.24             | 4.10            | 0.00         | 85.00        | 6.24             | 4.10            | 0.00         |
| 33.00        | 6.24             | 4.10            | 0.00         | 86.00        | 6.24             | 4.10            | 0.00         |
| 34.00        | 6.24             | 4.10            | 0.00         | 87.00        | 6.24             | 4.10            | 0.00         |
| 35.00        | 6.24             | 4.10            | 0.00         | 88.00        | 6.24             | 4.10            | 0.00         |
| 36.00        | 6.24             | 4.10            | 0.00         | 89.00        | 6.24             | 4.10            | 0.00         |
| 37.00        | 6.24             | 4.10            | 0.00         | 90.00        | 6.24             | 4.10            | 0.00         |
| 38.00        | 6.24             | 4.10            | 0.00         | 91.00        | 6.24             | 4.10            | 0.00         |
| 39.00        | 6.24             | 4.10            | 0.00         | 92.00        | 6.24             | 4.10            | 0.00         |
| 40.00        | 6.24             | 4.10            | 0.00         | 93.00        | 6.24             | 4.10            | 0.00         |
| 41.00        | 6.24             | 4.10            | 0.00         | 94.00        | 6.24             | 4.10            | 0.00         |
| 42.00        | 6.24             | 4.10            | 0.00         | 95.00        | 6.24             | 4.10            | 0.00         |
| 43.00        | 6.24             | 4.10            | 0.00         | 96.00        | 6.24             | 4.10            | 0.00         |
| 44.00        | 6.24             | 4.10            | 0.00         | 97.00        | 6.24             | 4.10            | 0.00         |
| 45.00        | 6.24             | 4.10            | 0.00         | 98.00        | 6.24             | 4.10            | 0.00         |
| 46.00        | 6.24             | 4.10            | 0.00         | 99.00        | 6.24             | 4.10            | 0.00         |
| 47.00        | 6.24             | 4.10            | 0.00         | 100.00       | 6.24             | 4.10            | 0.00         |
| 48.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 4.10            | 0.00         |              |                  |                 |              |

**Summary for Reach 1R: Existing Swale**

Inflow Area = 3.372 ac, 8.66% Impervious, Inflow Depth = 1.20" for 100-yr event  
 Inflow = 1.22 cfs @ 11.97 hrs, Volume= 0.338 af  
 Outflow = 1.19 cfs @ 11.99 hrs, Volume= 0.338 af, Atten= 2%, Lag= 1.3 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 2.14 fps, Min. Travel Time= 1.9 min  
 Avg. Velocity = 0.70 fps, Avg. Travel Time= 5.8 min

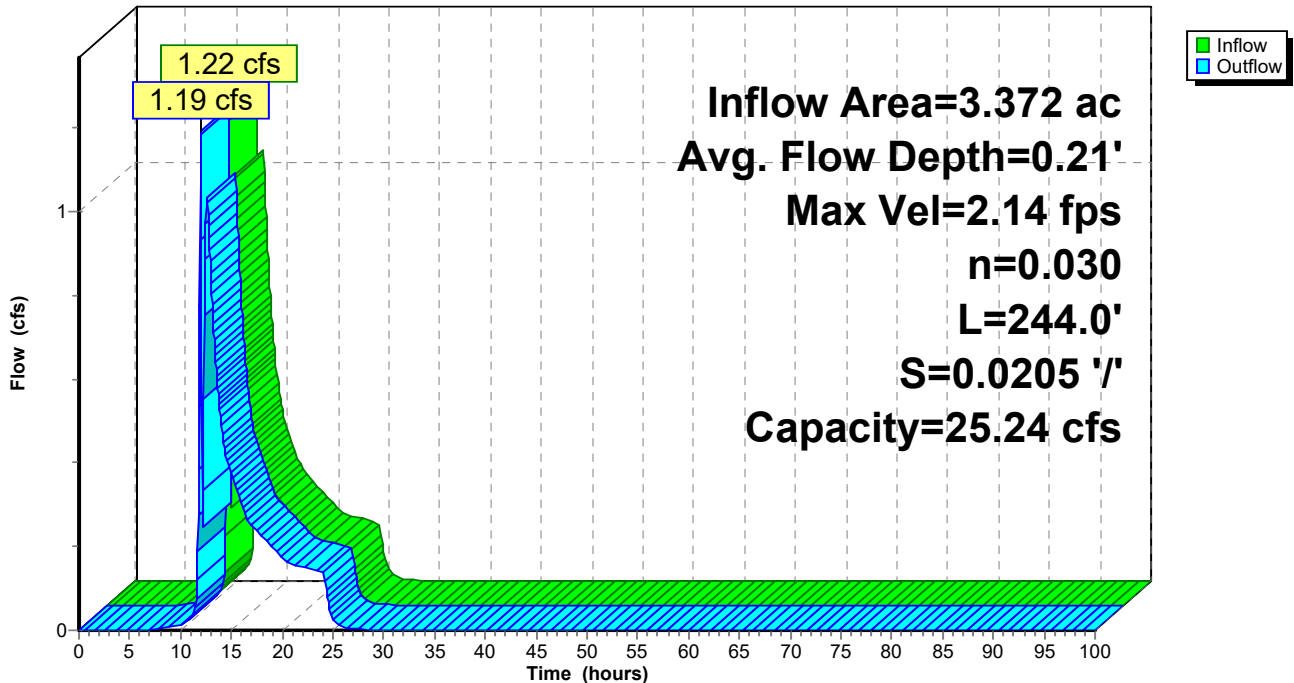
Peak Storage= 136 cf @ 11.99 hrs  
 Average Depth at Peak Storage= 0.21' , Surface Width= 3.27'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 ' / ' Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 ' / '  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

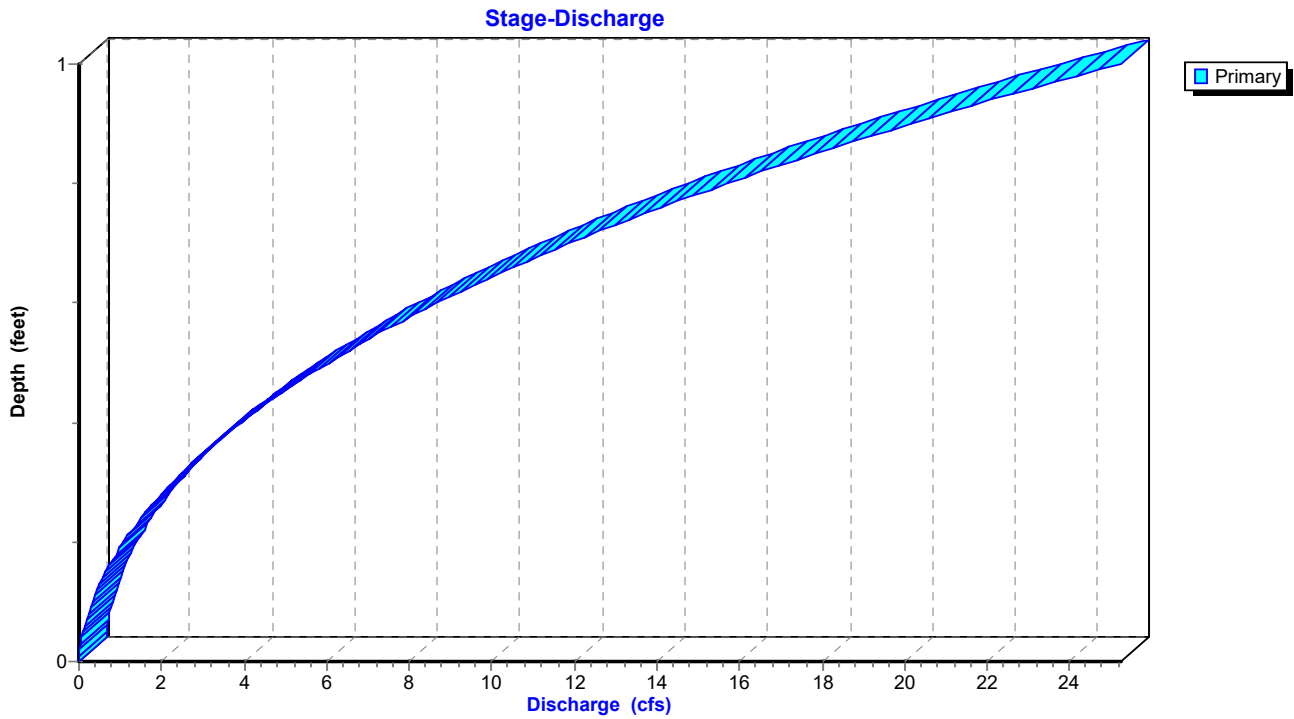


**Reach 1R: Existing Swale**

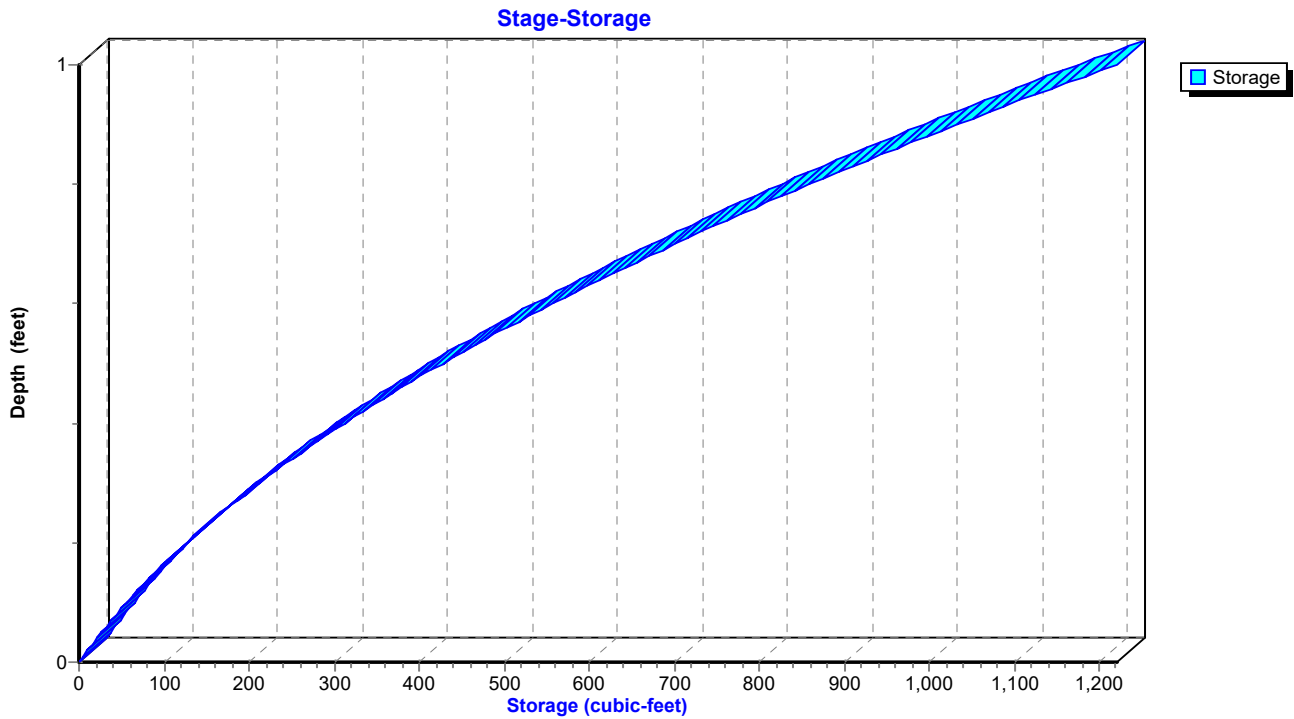
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 1                    | 316.00           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>7</b>             | <b>316.01</b>    | <b>0.01</b>   |
| 12.50        | <b>1.03</b>  | <b>122</b>           | <b>316.19</b>    | <b>1.02</b>   |
| 15.00        | 0.37         | 61                   | 316.11           | 0.37          |
| 17.50        | 0.24         | 46                   | 316.08           | 0.24          |
| 20.00        | 0.17         | 38                   | 316.07           | 0.17          |
| 22.50        | 0.15         | 34                   | 316.06           | 0.15          |
| 25.00        | 0.03         | 12                   | 316.02           | 0.03          |
| 27.50        | 0.00         | 2                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |



**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Reach 2R: Proposed RRv Swale**

Inflow Area = 0.830 ac, 18.55% Impervious, Inflow Depth = 4.21" for 100-yr event  
 Inflow = 5.76 cfs @ 11.98 hrs, Volume= 0.291 af  
 Outflow = 5.01 cfs @ 12.02 hrs, Volume= 0.291 af, Atten= 13%, Lag= 2.5 min  
 Routed to Pond 3P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.44 fps, Min. Travel Time= 4.5 min  
 Avg. Velocity = 0.36 fps, Avg. Travel Time= 18.3 min

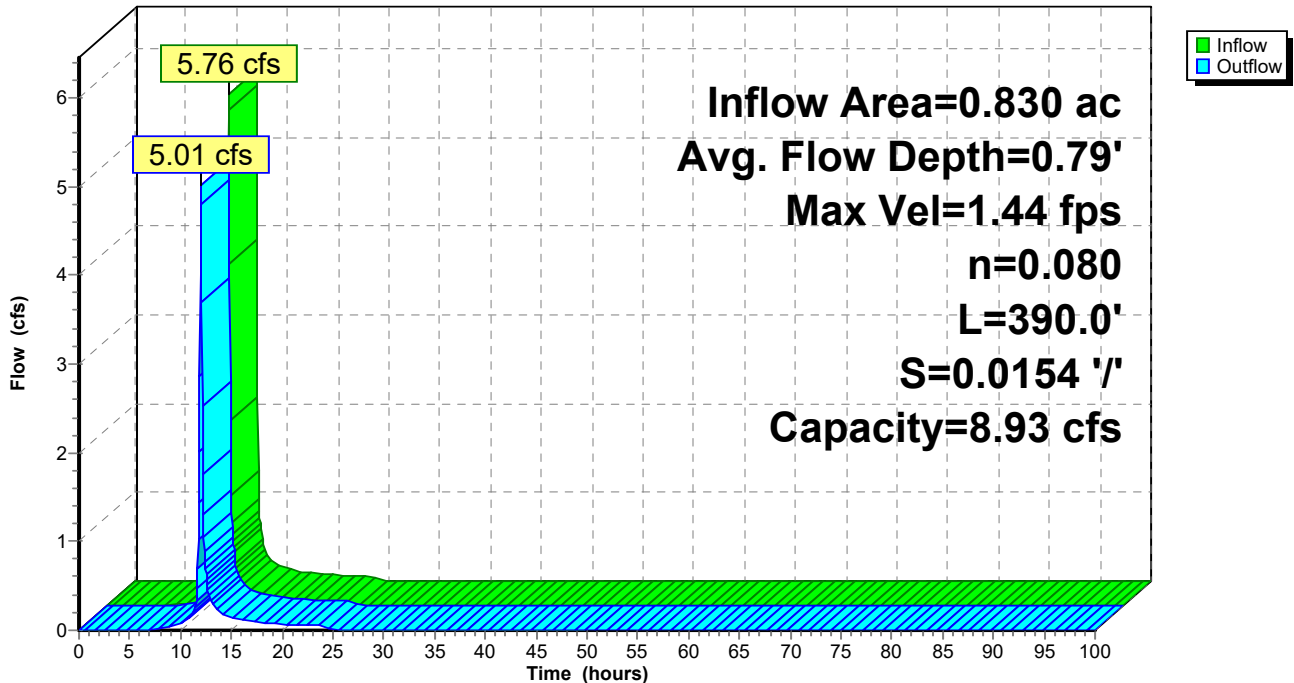
Peak Storage= 1,356 cf @ 12.02 hrs  
 Average Depth at Peak Storage= 0.79' , Surface Width= 6.76'  
 Bank-Full Depth= 1.04' Flow Area= 5.3 sf, Capacity= 8.93 cfs

2.00' x 1.04' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 8.24'  
 Length= 390.0' Slope= 0.0154 ' / '  
 Inlet Invert= 318.00', Outlet Invert= 312.00'

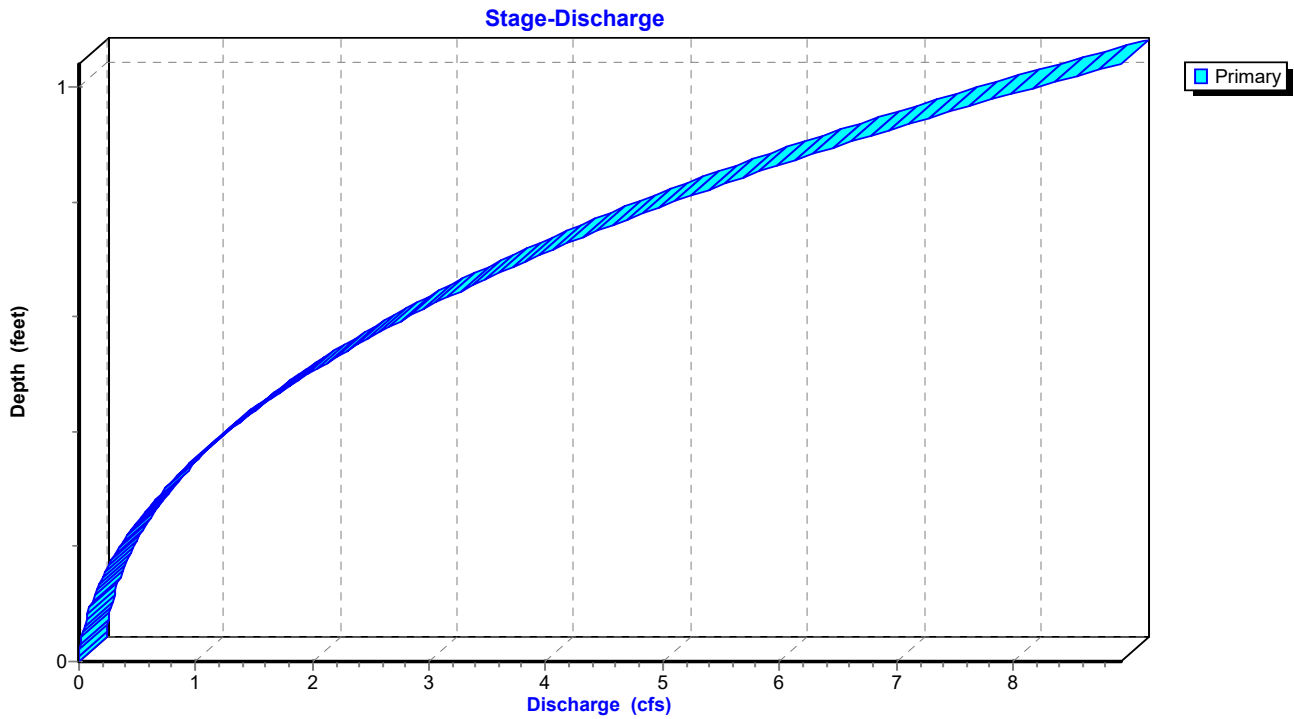


**Reach 2R: Proposed RRv Swale**

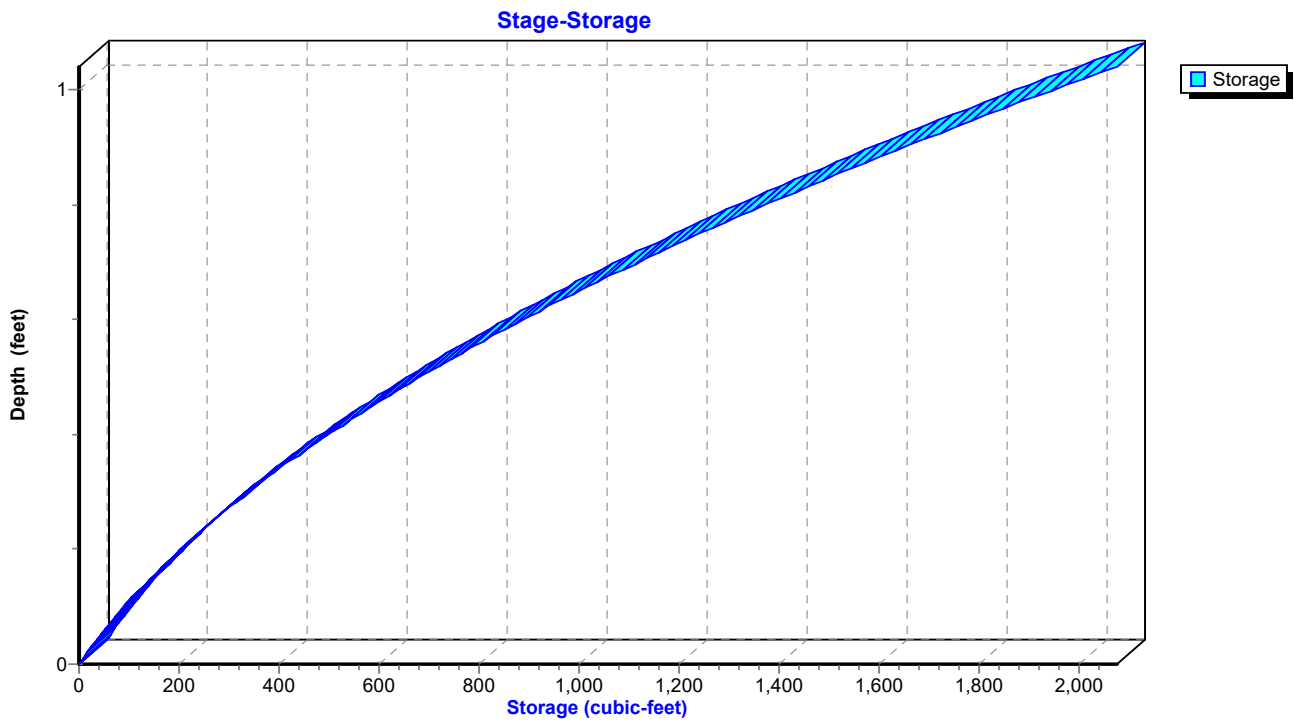
Hydrograph



### Reach 2R: Proposed RRv Swale



### Reach 2R: Proposed RRv Swale



**Hydrograph for Reach 2R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 7.50         | 0.02         | 27                   | 318.03           | 0.02          |
| 10.00        | <b>0.08</b>  | <b>72</b>            | <b>318.08</b>    | <b>0.07</b>   |
| 12.50        | <b>0.51</b>  | <b>302</b>           | <b>318.27</b>    | <b>0.62</b>   |
| 15.00        | 0.14         | 114                  | 318.12           | 0.15          |
| 17.50        | 0.09         | 84                   | 318.09           | 0.09          |
| 20.00        | 0.06         | 66                   | 318.08           | 0.07          |
| 22.50        | 0.06         | 61                   | 318.07           | 0.06          |
| 25.00        | 0.00         | 10                   | 318.01           | 0.00          |
| 27.50        | 0.00         | 1                    | 318.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 318.00           | 0.00          |

**Stage-Discharge for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 318.00              | 0.00                 | 0.00               | 318.53              | 1.16                 | 2.20               |
| 318.01              | 0.10                 | 0.00               | 318.54              | 1.17                 | 2.28               |
| 318.02              | 0.17                 | 0.01               | 318.55              | 1.18                 | 2.37               |
| 318.03              | 0.22                 | 0.01               | 318.56              | 1.19                 | 2.46               |
| 318.04              | 0.26                 | 0.02               | 318.57              | 1.20                 | 2.54               |
| 318.05              | 0.30                 | 0.03               | 318.58              | 1.21                 | 2.63               |
| 318.06              | 0.33                 | 0.04               | 318.59              | 1.23                 | 2.73               |
| 318.07              | 0.37                 | 0.06               | 318.60              | 1.24                 | 2.82               |
| 318.08              | 0.40                 | 0.07               | 318.61              | 1.25                 | 2.92               |
| 318.09              | 0.43                 | 0.09               | 318.62              | 1.26                 | 3.01               |
| 318.10              | 0.45                 | 0.10               | 318.63              | 1.27                 | 3.11               |
| 318.11              | 0.48                 | 0.12               | 318.64              | 1.28                 | 3.22               |
| 318.12              | 0.50                 | 0.14               | 318.65              | 1.29                 | 3.32               |
| 318.13              | 0.53                 | 0.16               | 318.66              | 1.30                 | 3.42               |
| 318.14              | 0.55                 | 0.19               | 318.67              | 1.31                 | 3.53               |
| 318.15              | 0.57                 | 0.21               | 318.68              | 1.32                 | 3.64               |
| 318.16              | 0.60                 | 0.24               | 318.69              | 1.34                 | 3.75               |
| 318.17              | 0.62                 | 0.26               | 318.70              | 1.35                 | 3.86               |
| 318.18              | 0.64                 | 0.29               | 318.71              | 1.36                 | 3.98               |
| 318.19              | 0.66                 | 0.32               | 318.72              | 1.37                 | 4.09               |
| 318.20              | 0.68                 | 0.35               | 318.73              | 1.38                 | 4.21               |
| 318.21              | 0.70                 | 0.38               | 318.74              | 1.39                 | 4.33               |
| 318.22              | 0.71                 | 0.42               | 318.75              | 1.40                 | 4.46               |
| 318.23              | 0.73                 | 0.45               | 318.76              | 1.41                 | 4.58               |
| 318.24              | 0.75                 | 0.49               | 318.77              | 1.42                 | 4.71               |
| 318.25              | 0.77                 | 0.53               | 318.78              | 1.43                 | 4.84               |
| 318.26              | 0.78                 | 0.57               | 318.79              | 1.44                 | 4.97               |
| 318.27              | 0.80                 | 0.61               | 318.80              | 1.45                 | 5.10               |
| 318.28              | 0.82                 | 0.65               | 318.81              | 1.46                 | 5.23               |
| 318.29              | 0.83                 | 0.69               | 318.82              | 1.47                 | 5.37               |
| 318.30              | 0.85                 | 0.74               | 318.83              | 1.48                 | 5.51               |
| 318.31              | 0.86                 | 0.78               | 318.84              | 1.49                 | 5.65               |
| 318.32              | 0.88                 | 0.83               | 318.85              | 1.50                 | 5.79               |
| 318.33              | 0.89                 | 0.88               | 318.86              | 1.51                 | 5.94               |
| 318.34              | 0.91                 | 0.93               | 318.87              | 1.52                 | 6.09               |
| 318.35              | 0.92                 | 0.98               | 318.88              | 1.53                 | 6.24               |
| 318.36              | 0.94                 | 1.04               | 318.89              | 1.54                 | 6.39               |
| 318.37              | 0.95                 | 1.09               | 318.90              | 1.55                 | 6.54               |
| 318.38              | 0.96                 | 1.15               | 318.91              | 1.56                 | 6.70               |
| 318.39              | 0.98                 | 1.21               | 318.92              | 1.57                 | 6.86               |
| 318.40              | 0.99                 | 1.27               | 318.93              | 1.57                 | 7.02               |
| 318.41              | 1.01                 | 1.33               | 318.94              | 1.58                 | 7.18               |
| 318.42              | 1.02                 | 1.40               | 318.95              | 1.59                 | 7.34               |
| 318.43              | 1.03                 | 1.46               | 318.96              | 1.60                 | 7.51               |
| 318.44              | 1.04                 | 1.53               | 318.97              | 1.61                 | 7.68               |
| 318.45              | 1.06                 | 1.59               | 318.98              | 1.62                 | 7.85               |
| 318.46              | 1.07                 | 1.66               | 318.99              | 1.63                 | 8.02               |
| 318.47              | 1.08                 | 1.74               | 319.00              | 1.64                 | 8.20               |
| 318.48              | 1.10                 | 1.81               | 319.01              | 1.65                 | 8.38               |
| 318.49              | 1.11                 | 1.88               | 319.02              | 1.66                 | 8.56               |
| 318.50              | 1.12                 | 1.96               | 319.03              | 1.67                 | 8.74               |
| 318.51              | 1.13                 | 2.04               | 319.04              | <b>1.68</b>          | <b>8.93</b>        |
| 318.52              | 1.14                 | 2.12               |                     |                      |                    |

**Stage-Area-Storage for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 318.00              | 0.0                 | 0                       | 318.53              | 1.9                 | 742                     |
| 318.01              | 0.0                 | 8                       | 318.54              | 2.0                 | 762                     |
| 318.02              | 0.0                 | 16                      | 318.55              | 2.0                 | 783                     |
| 318.03              | 0.1                 | 24                      | 318.56              | 2.1                 | 804                     |
| 318.04              | 0.1                 | 33                      | 318.57              | 2.1                 | 825                     |
| 318.05              | 0.1                 | 42                      | 318.58              | 2.2                 | 846                     |
| 318.06              | 0.1                 | 51                      | 318.59              | 2.2                 | 868                     |
| 318.07              | 0.2                 | 60                      | 318.60              | 2.3                 | 889                     |
| 318.08              | 0.2                 | 70                      | 318.61              | 2.3                 | 911                     |
| 318.09              | 0.2                 | 80                      | 318.62              | 2.4                 | 933                     |
| 318.10              | 0.2                 | 90                      | 318.63              | 2.5                 | 956                     |
| 318.11              | 0.3                 | 100                     | 318.64              | 2.5                 | 978                     |
| 318.12              | 0.3                 | 110                     | 318.65              | 2.6                 | 1,001                   |
| 318.13              | 0.3                 | 121                     | 318.66              | 2.6                 | 1,024                   |
| 318.14              | 0.3                 | 132                     | 318.67              | 2.7                 | 1,048                   |
| 318.15              | 0.4                 | 143                     | 318.68              | 2.7                 | 1,071                   |
| 318.16              | 0.4                 | 155                     | 318.69              | 2.8                 | 1,095                   |
| 318.17              | 0.4                 | 166                     | 318.70              | 2.9                 | 1,119                   |
| 318.18              | 0.5                 | 178                     | 318.71              | 2.9                 | 1,144                   |
| 318.19              | 0.5                 | 190                     | 318.72              | 3.0                 | 1,168                   |
| 318.20              | 0.5                 | 203                     | 318.73              | 3.1                 | 1,193                   |
| 318.21              | 0.6                 | 215                     | 318.74              | 3.1                 | 1,218                   |
| 318.22              | 0.6                 | 228                     | 318.75              | 3.2                 | 1,243                   |
| 318.23              | 0.6                 | 241                     | 318.76              | 3.3                 | 1,269                   |
| 318.24              | 0.7                 | 255                     | 318.77              | 3.3                 | 1,294                   |
| 318.25              | 0.7                 | 268                     | 318.78              | 3.4                 | 1,320                   |
| 318.26              | 0.7                 | 282                     | 318.79              | 3.5                 | 1,346                   |
| 318.27              | 0.8                 | 296                     | 318.80              | 3.5                 | 1,373                   |
| 318.28              | 0.8                 | 310                     | 318.81              | 3.6                 | 1,399                   |
| 318.29              | 0.8                 | 325                     | 318.82              | 3.7                 | 1,426                   |
| 318.30              | 0.9                 | 339                     | 318.83              | 3.7                 | 1,453                   |
| 318.31              | 0.9                 | 354                     | 318.84              | 3.8                 | 1,481                   |
| 318.32              | 0.9                 | 369                     | 318.85              | 3.9                 | 1,508                   |
| 318.33              | 1.0                 | 385                     | 318.86              | 3.9                 | 1,536                   |
| 318.34              | 1.0                 | 400                     | 318.87              | 4.0                 | 1,564                   |
| 318.35              | 1.1                 | 416                     | 318.88              | 4.1                 | 1,592                   |
| 318.36              | 1.1                 | 432                     | 318.89              | 4.2                 | 1,621                   |
| 318.37              | 1.2                 | 449                     | 318.90              | 4.2                 | 1,650                   |
| 318.38              | 1.2                 | 465                     | 318.91              | 4.3                 | 1,679                   |
| 318.39              | 1.2                 | 482                     | 318.92              | 4.4                 | 1,708                   |
| 318.40              | 1.3                 | 499                     | 318.93              | 4.5                 | 1,737                   |
| 318.41              | 1.3                 | 517                     | 318.94              | 4.5                 | 1,767                   |
| 318.42              | 1.4                 | 534                     | 318.95              | 4.6                 | 1,797                   |
| 318.43              | 1.4                 | 552                     | 318.96              | 4.7                 | 1,827                   |
| 318.44              | 1.5                 | 570                     | 318.97              | 4.8                 | 1,857                   |
| 318.45              | 1.5                 | 588                     | 318.98              | 4.8                 | 1,888                   |
| 318.46              | 1.6                 | 606                     | 318.99              | 4.9                 | 1,919                   |
| 318.47              | 1.6                 | 625                     | 319.00              | 5.0                 | 1,950                   |
| 318.48              | 1.7                 | 644                     | 319.01              | 5.1                 | 1,981                   |
| 318.49              | 1.7                 | 663                     | 319.02              | 5.2                 | 2,013                   |
| 318.50              | 1.8                 | 683                     | 319.03              | 5.2                 | 2,045                   |
| 318.51              | 1.8                 | 702                     | 319.04              | <b>5.3</b>          | <b>2,077</b>            |
| 318.52              | 1.9                 | 722                     |                     |                     |                         |

### Summary for Reach 3R: Proposed RRv Swale

[63] Warning: Exceeded Reach 4R INLET depth by 0.20' @ 12.00 hrs

Inflow Area = 0.744 ac, 40.73% Impervious, Inflow Depth = 4.68" for 100-yr event  
Inflow = 5.44 cfs @ 11.98 hrs, Volume= 0.290 af  
Outflow = 5.32 cfs @ 11.99 hrs, Volume= 0.290 af, Atten= 2%, Lag= 1.1 min  
Routed to Pond 3P : Proposed Stormwater Pond

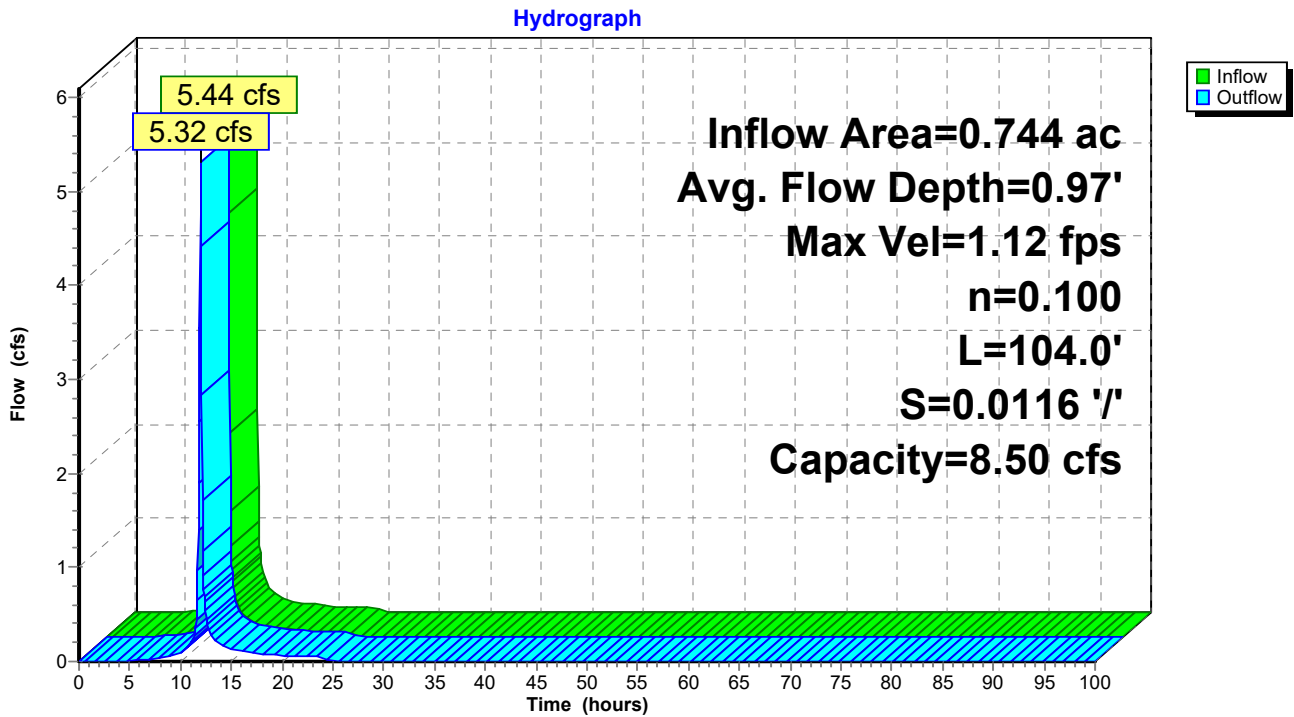
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 1.12 fps, Min. Travel Time= 1.5 min  
Avg. Velocity= 0.30 fps, Avg. Travel Time= 5.7 min

Peak Storage= 494 cf @ 11.99 hrs  
Average Depth at Peak Storage= 0.97' , Surface Width= 7.81'  
Bank-Full Depth= 1.20' Flow Area= 6.7 sf, Capacity= 8.50 cfs

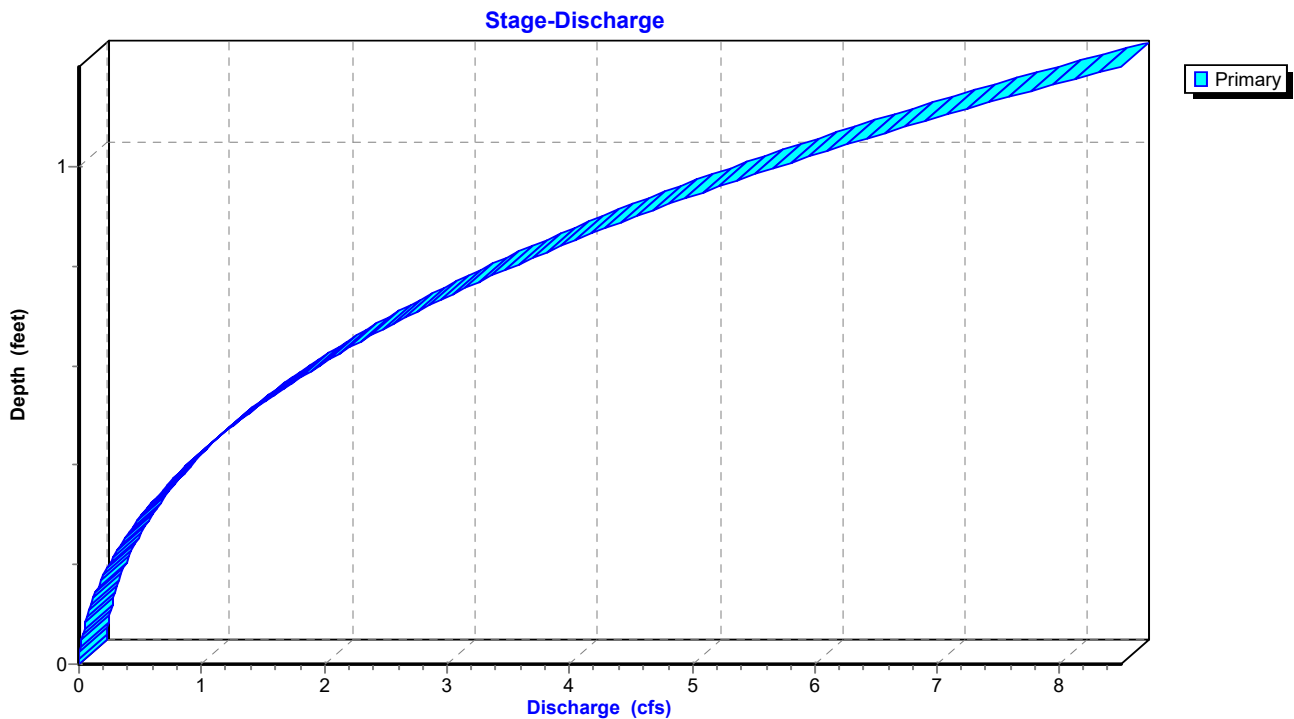
2.00' x 1.20' deep channel, n= 0.100 Earth, dense brush, high stage  
Side Slope Z-value= 3.0 '/' Top Width= 9.20'  
Length= 104.0' Slope= 0.0116 '/'  
Inlet Invert= 312.21', Outlet Invert= 311.00'



Reach 3R: Proposed RRv Swale

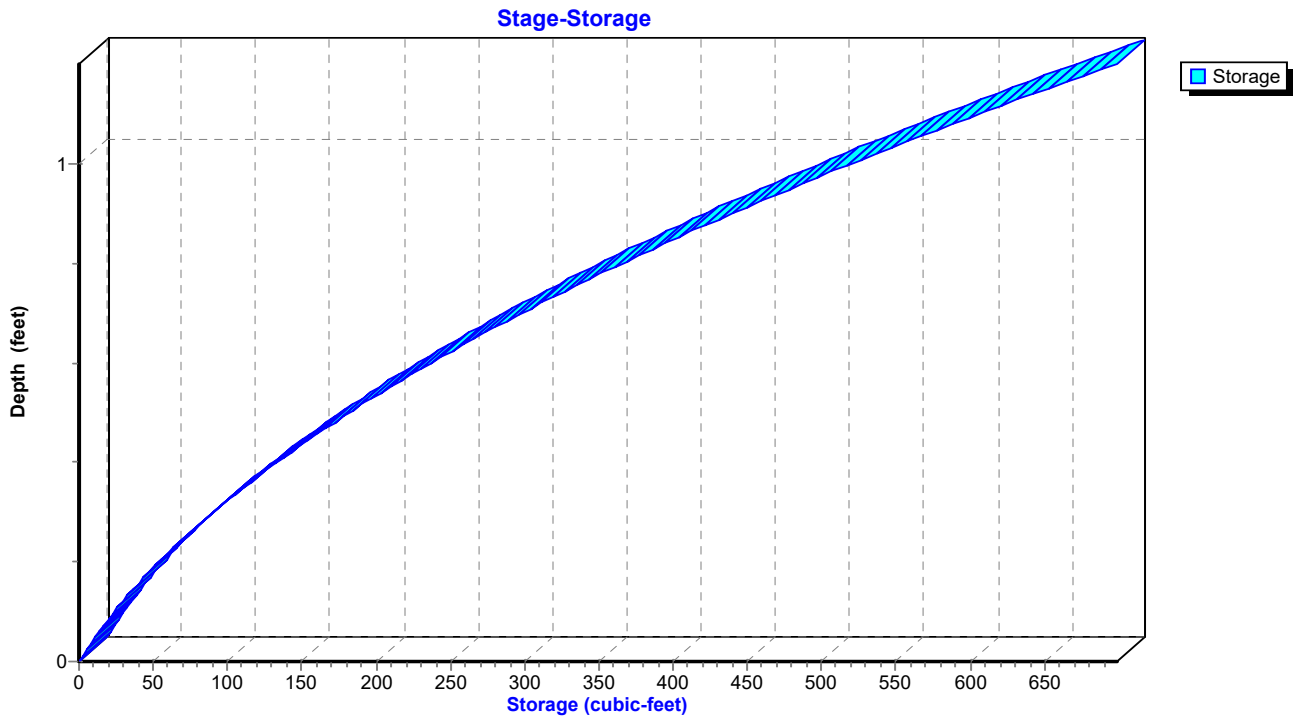


Reach 3R: Proposed RRv Swale





### Reach 3R: Proposed RRv Swale



**Hydrograph for Reach 3R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 5.00         | 0.01         | 5                    | 312.23           | 0.01          |
| 7.50         | 0.03         | 14                   | 312.27           | 0.03          |
| 10.00        | <b>0.10</b>  | <b>29</b>            | <b>312.33</b>    | <b>0.10</b>   |
| 12.50        | <b>0.49</b>  | <b>92</b>            | <b>312.51</b>    | <b>0.52</b>   |
| 15.00        | 0.14         | 37                   | 312.35           | 0.14          |
| 17.50        | 0.09         | 27                   | 312.32           | 0.09          |
| 20.00        | 0.06         | 21                   | 312.30           | 0.06          |
| 22.50        | 0.05         | 19                   | 312.29           | 0.05          |
| 25.00        | 0.00         | 1                    | 312.22           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.21           | 0.00          |

**Stage-Discharge for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.21              | 0.00                 | 0.00               | 312.74              | 0.80                 | 1.53               | 313.27              | 1.18                 | 6.47               |
| 312.22              | 0.07                 | 0.00               | 312.75              | 0.81                 | 1.59               | 313.28              | 1.19                 | 6.61               |
| 312.23              | 0.11                 | 0.00               | 312.76              | 0.82                 | 1.65               | 313.29              | 1.19                 | 6.74               |
| 312.24              | 0.15                 | 0.01               | 312.77              | 0.83                 | 1.71               | 313.30              | 1.20                 | 6.88               |
| 312.25              | 0.18                 | 0.02               | 312.78              | 0.84                 | 1.77               | 313.31              | 1.20                 | 7.02               |
| 312.26              | 0.21                 | 0.02               | 312.79              | 0.84                 | 1.83               | 313.32              | 1.21                 | 7.16               |
| 312.27              | 0.23                 | 0.03               | 312.80              | 0.85                 | 1.90               | 313.33              | 1.22                 | 7.30               |
| 312.28              | 0.25                 | 0.04               | 312.81              | 0.86                 | 1.96               | 313.34              | 1.22                 | 7.44               |
| 312.29              | 0.28                 | 0.05               | 312.82              | 0.87                 | 2.03               | 313.35              | 1.23                 | 7.59               |
| 312.30              | 0.30                 | 0.06               | 312.83              | 0.88                 | 2.10               | 313.36              | 1.23                 | 7.74               |
| 312.31              | 0.32                 | 0.07               | 312.84              | 0.88                 | 2.17               | 313.37              | 1.24                 | 7.89               |
| 312.32              | 0.33                 | 0.09               | 312.85              | 0.89                 | 2.24               | 313.38              | 1.25                 | 8.04               |
| 312.33              | 0.35                 | 0.10               | 312.86              | 0.90                 | 2.31               | 313.39              | 1.25                 | 8.19               |
| 312.34              | 0.37                 | 0.11               | 312.87              | 0.91                 | 2.38               | 313.40              | 1.26                 | 8.34               |
| 312.35              | 0.38                 | 0.13               | 312.88              | 0.91                 | 2.46               | 313.41              | <b>1.26</b>          | <b>8.50</b>        |
| 312.36              | 0.40                 | 0.15               | 312.89              | 0.92                 | 2.53               |                     |                      |                    |
| 312.37              | 0.41                 | 0.16               | 312.90              | 0.93                 | 2.61               |                     |                      |                    |
| 312.38              | 0.43                 | 0.18               | 312.91              | 0.94                 | 2.69               |                     |                      |                    |
| 312.39              | 0.44                 | 0.20               | 312.92              | 0.94                 | 2.77               |                     |                      |                    |
| 312.40              | 0.46                 | 0.22               | 312.93              | 0.95                 | 2.85               |                     |                      |                    |
| 312.41              | 0.47                 | 0.25               | 312.94              | 0.96                 | 2.93               |                     |                      |                    |
| 312.42              | 0.48                 | 0.27               | 312.95              | 0.97                 | 3.02               |                     |                      |                    |
| 312.43              | 0.50                 | 0.29               | 312.96              | 0.97                 | 3.10               |                     |                      |                    |
| 312.44              | 0.51                 | 0.32               | 312.97              | 0.98                 | 3.19               |                     |                      |                    |
| 312.45              | 0.52                 | 0.34               | 312.98              | 0.99                 | 3.28               |                     |                      |                    |
| 312.46              | 0.53                 | 0.37               | 312.99              | 0.99                 | 3.36               |                     |                      |                    |
| 312.47              | 0.55                 | 0.39               | 313.00              | 1.00                 | 3.46               |                     |                      |                    |
| 312.48              | 0.56                 | 0.42               | 313.01              | 1.01                 | 3.55               |                     |                      |                    |
| 312.49              | 0.57                 | 0.45               | 313.02              | 1.01                 | 3.64               |                     |                      |                    |
| 312.50              | 0.58                 | 0.48               | 313.03              | 1.02                 | 3.74               |                     |                      |                    |
| 312.51              | 0.59                 | 0.51               | 313.04              | 1.03                 | 3.83               |                     |                      |                    |
| 312.52              | 0.60                 | 0.55               | 313.05              | 1.04                 | 3.93               |                     |                      |                    |
| 312.53              | 0.61                 | 0.58               | 313.06              | 1.04                 | 4.03               |                     |                      |                    |
| 312.54              | 0.62                 | 0.61               | 313.07              | 1.05                 | 4.13               |                     |                      |                    |
| 312.55              | 0.63                 | 0.65               | 313.08              | 1.06                 | 4.23               |                     |                      |                    |
| 312.56              | 0.64                 | 0.69               | 313.09              | 1.06                 | 4.34               |                     |                      |                    |
| 312.57              | 0.65                 | 0.72               | 313.10              | 1.07                 | 4.44               |                     |                      |                    |
| 312.58              | 0.66                 | 0.76               | 313.11              | 1.08                 | 4.55               |                     |                      |                    |
| 312.59              | 0.67                 | 0.80               | 313.12              | 1.08                 | 4.66               |                     |                      |                    |
| 312.60              | 0.68                 | 0.84               | 313.13              | 1.09                 | 4.77               |                     |                      |                    |
| 312.61              | 0.69                 | 0.88               | 313.14              | 1.10                 | 4.88               |                     |                      |                    |
| 312.62              | 0.70                 | 0.93               | 313.15              | 1.10                 | 4.99               |                     |                      |                    |
| 312.63              | 0.71                 | 0.97               | 313.16              | 1.11                 | 5.11               |                     |                      |                    |
| 312.64              | 0.72                 | 1.02               | 313.17              | 1.12                 | 5.22               |                     |                      |                    |
| 312.65              | 0.73                 | 1.06               | 313.18              | 1.12                 | 5.34               |                     |                      |                    |
| 312.66              | 0.74                 | 1.11               | 313.19              | 1.13                 | 5.46               |                     |                      |                    |
| 312.67              | 0.74                 | 1.16               | 313.20              | 1.13                 | 5.58               |                     |                      |                    |
| 312.68              | 0.75                 | 1.21               | 313.21              | 1.14                 | 5.71               |                     |                      |                    |
| 312.69              | 0.76                 | 1.26               | 313.22              | 1.15                 | 5.83               |                     |                      |                    |
| 312.70              | 0.77                 | 1.31               | 313.23              | 1.15                 | 5.95               |                     |                      |                    |
| 312.71              | 0.78                 | 1.36               | 313.24              | 1.16                 | 6.08               |                     |                      |                    |
| 312.72              | 0.79                 | 1.42               | 313.25              | 1.17                 | 6.21               |                     |                      |                    |
| 312.73              | 0.80                 | 1.47               | 313.26              | 1.17                 | 6.34               |                     |                      |                    |

**Stage-Area-Storage for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.21              | 0.0                 | 0                       | 313.27              | 5.5                 | 571                     |
| 312.23              | 0.0                 | 4                       | 313.29              | 5.7                 | 589                     |
| 312.25              | 0.1                 | 9                       | 313.31              | 5.8                 | 606                     |
| 312.27              | 0.1                 | 14                      | 313.33              | 6.0                 | 624                     |
| 312.29              | 0.2                 | 19                      | 313.35              | 6.2                 | 643                     |
| 312.31              | 0.2                 | 24                      | 313.37              | 6.4                 | 661                     |
| 312.33              | 0.3                 | 29                      | 313.39              | 6.5                 | 680                     |
| 312.35              | 0.3                 | 35                      | 313.41              | <b>6.7</b>          | <b>699</b>              |
| 312.37              | 0.4                 | 41                      |                     |                     |                         |
| 312.39              | 0.5                 | 48                      |                     |                     |                         |
| 312.41              | 0.5                 | 54                      |                     |                     |                         |
| 312.43              | 0.6                 | 61                      |                     |                     |                         |
| 312.45              | 0.7                 | 68                      |                     |                     |                         |
| 312.47              | 0.7                 | 75                      |                     |                     |                         |
| 312.49              | 0.8                 | 83                      |                     |                     |                         |
| 312.51              | 0.9                 | 90                      |                     |                     |                         |
| 312.53              | 0.9                 | 99                      |                     |                     |                         |
| 312.55              | 1.0                 | 107                     |                     |                     |                         |
| 312.57              | 1.1                 | 115                     |                     |                     |                         |
| 312.59              | 1.2                 | 124                     |                     |                     |                         |
| 312.61              | 1.3                 | 133                     |                     |                     |                         |
| 312.63              | 1.4                 | 142                     |                     |                     |                         |
| 312.65              | 1.5                 | 152                     |                     |                     |                         |
| 312.67              | 1.6                 | 162                     |                     |                     |                         |
| 312.69              | 1.7                 | 172                     |                     |                     |                         |
| 312.71              | 1.8                 | 182                     |                     |                     |                         |
| 312.73              | 1.9                 | 193                     |                     |                     |                         |
| 312.75              | 2.0                 | 203                     |                     |                     |                         |
| 312.77              | 2.1                 | 214                     |                     |                     |                         |
| 312.79              | 2.2                 | 226                     |                     |                     |                         |
| 312.81              | 2.3                 | 237                     |                     |                     |                         |
| 312.83              | 2.4                 | 249                     |                     |                     |                         |
| 312.85              | 2.5                 | 261                     |                     |                     |                         |
| 312.87              | 2.6                 | 273                     |                     |                     |                         |
| 312.89              | 2.7                 | 286                     |                     |                     |                         |
| 312.91              | 2.9                 | 298                     |                     |                     |                         |
| 312.93              | 3.0                 | 312                     |                     |                     |                         |
| 312.95              | 3.1                 | 325                     |                     |                     |                         |
| 312.97              | 3.3                 | 338                     |                     |                     |                         |
| 312.99              | 3.4                 | 352                     |                     |                     |                         |
| 313.01              | 3.5                 | 366                     |                     |                     |                         |
| 313.03              | 3.7                 | 380                     |                     |                     |                         |
| 313.05              | 3.8                 | 395                     |                     |                     |                         |
| 313.07              | 3.9                 | 410                     |                     |                     |                         |
| 313.09              | 4.1                 | 425                     |                     |                     |                         |
| 313.11              | 4.2                 | 440                     |                     |                     |                         |
| 313.13              | 4.4                 | 455                     |                     |                     |                         |
| 313.15              | 4.5                 | 471                     |                     |                     |                         |
| 313.17              | 4.7                 | 487                     |                     |                     |                         |
| 313.19              | 4.8                 | 503                     |                     |                     |                         |
| 313.21              | 5.0                 | 520                     |                     |                     |                         |
| 313.23              | 5.2                 | 537                     |                     |                     |                         |
| 313.25              | 5.3                 | 554                     |                     |                     |                         |

### Summary for Reach 4R: Proposed 10" Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

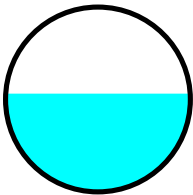
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.07' @ 12.00 hrs

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 4.31" for 100-yr event  
Inflow = 1.58 cfs @ 12.01 hrs, Volume= 0.086 af  
Outflow = 1.58 cfs @ 12.01 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.1 min  
Routed to Reach 3R : Proposed RRv Swale

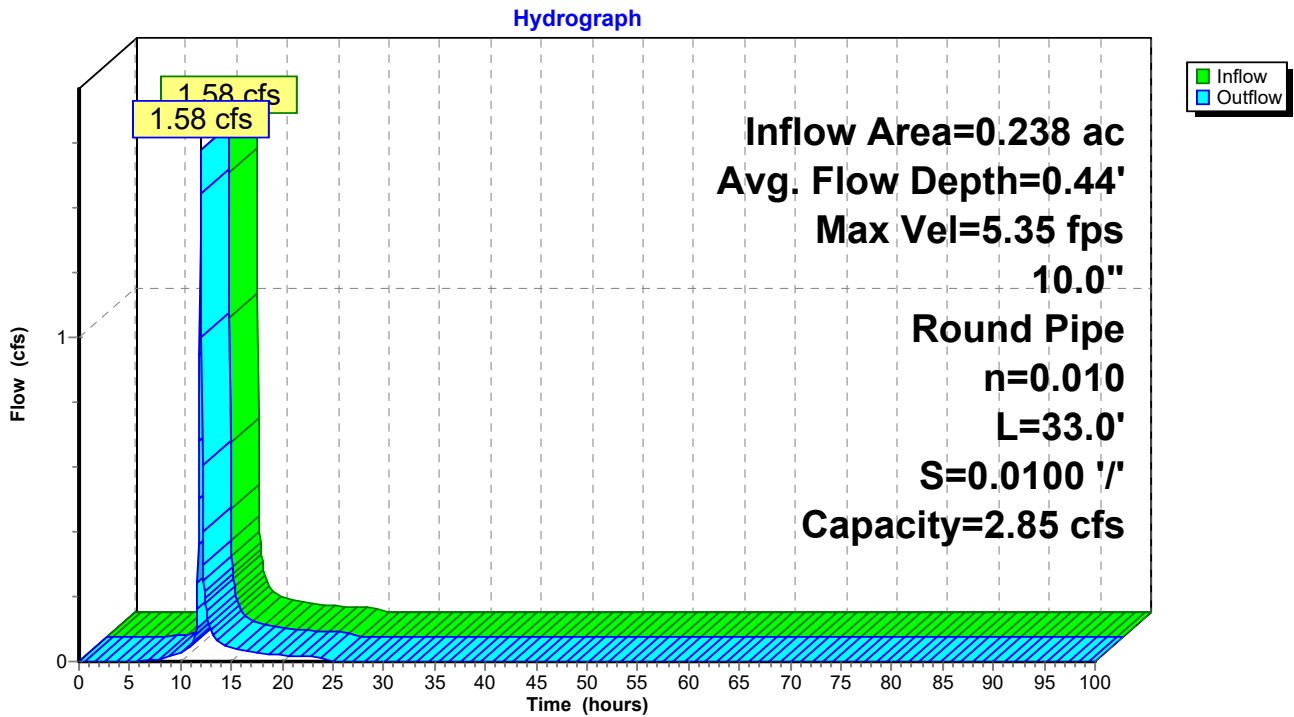
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 5.35 fps, Min. Travel Time= 0.1 min  
Avg. Velocity= 1.59 fps, Avg. Travel Time= 0.3 min

Peak Storage= 10 cf @ 12.01 hrs  
Average Depth at Peak Storage= 0.44' , Surface Width= 0.83'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.85 cfs

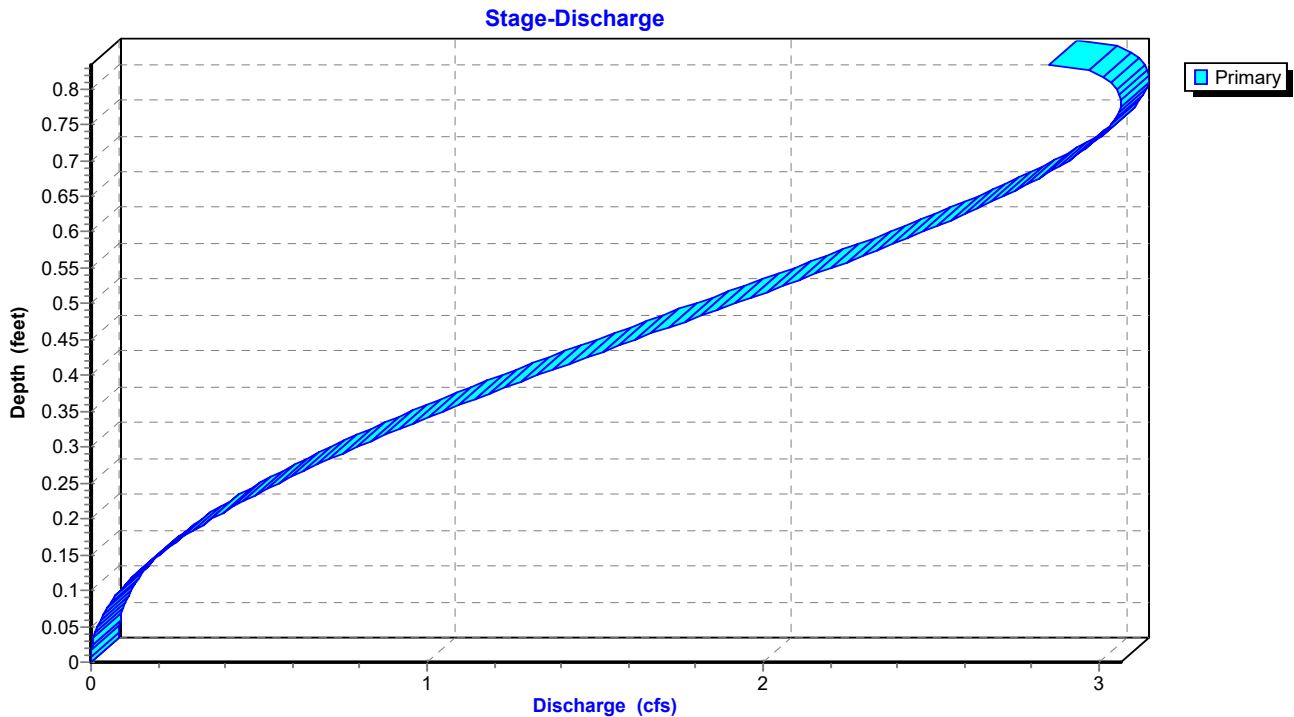
10.0" Round Pipe  
n= 0.010 PVC, smooth interior  
Length= 33.0' Slope= 0.0100 '/'  
Inlet Invert= 312.54', Outlet Invert= 312.21'



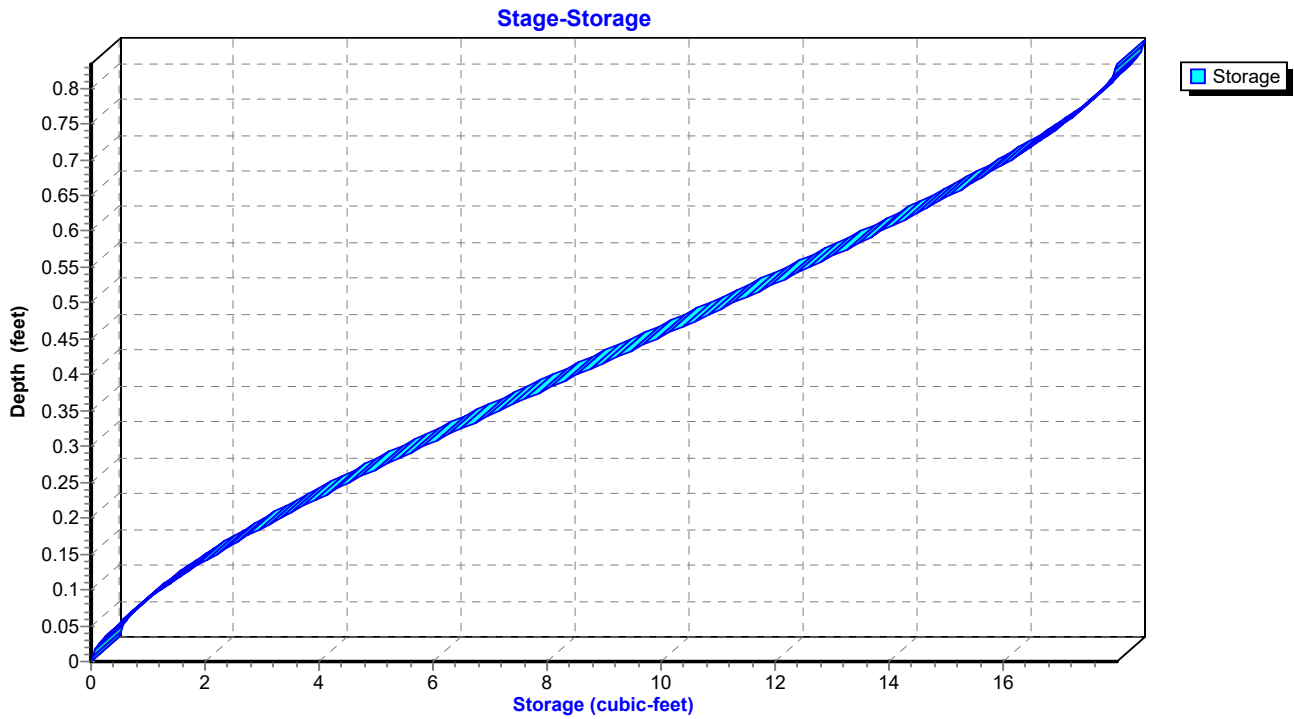
Reach 4R: Proposed 10" Culvert



Reach 4R: Proposed 10" Culvert



### Reach 4R: Proposed 10" Culvert



**Hydrograph for Reach 4R: Proposed 10" Culvert**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 7.50         | 0.01         | 0                    | 312.57           | 0.01          |
| 10.00        | <b>0.02</b>  | <b>0</b>             | <b>312.59</b>    | <b>0.02</b>   |
| 12.50        | <b>0.16</b>  | <b>2</b>             | <b>312.68</b>    | <b>0.16</b>   |
| 15.00        | 0.04         | 1                    | 312.61           | 0.04          |
| 17.50        | 0.03         | 1                    | 312.60           | 0.03          |
| 20.00        | 0.02         | 0                    | 312.59           | 0.02          |
| 22.50        | 0.02         | 0                    | 312.59           | 0.02          |
| 25.00        | 0.00         | 0                    | 312.55           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.54           | 0.00          |



**Stage-Discharge for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.54              | 0.00                 | 0.00               | 313.07              | 5.70                 | 2.09               |
| 312.55              | 0.52                 | 0.00               | 313.08              | 5.74                 | 2.14               |
| 312.56              | 0.83                 | 0.00               | 313.09              | 5.76                 | 2.20               |
| 312.57              | 1.08                 | 0.01               | 313.10              | 5.79                 | 2.26               |
| 312.58              | 1.31                 | 0.01               | 313.11              | 5.82                 | 2.31               |
| 312.59              | 1.51                 | 0.02               | 313.12              | 5.84                 | 2.37               |
| 312.60              | 1.70                 | 0.03               | 313.13              | 5.86                 | 2.42               |
| 312.61              | 1.87                 | 0.04               | 313.14              | 5.88                 | 2.47               |
| 312.62              | 2.04                 | 0.05               | 313.15              | 5.90                 | 2.52               |
| 312.63              | 2.20                 | 0.07               | 313.16              | 5.91                 | 2.57               |
| 312.64              | 2.35                 | 0.09               | 313.17              | 5.93                 | 2.62               |
| 312.65              | 2.49                 | 0.11               | 313.18              | 5.94                 | 2.67               |
| 312.66              | 2.63                 | 0.13               | 313.19              | 5.94                 | 2.71               |
| 312.67              | 2.76                 | 0.15               | 313.20              | 5.95                 | 2.76               |
| 312.68              | 2.89                 | 0.17               | 313.21              | 5.95                 | 2.80               |
| 312.69              | 3.02                 | 0.20               | 313.22              | <b>5.95</b>          | 2.84               |
| 312.70              | 3.13                 | 0.23               | 313.23              | 5.95                 | 2.87               |
| 312.71              | 3.25                 | 0.26               | 313.24              | 5.95                 | 2.91               |
| 312.72              | 3.36                 | 0.29               | 313.25              | 5.94                 | 2.94               |
| 312.73              | 3.47                 | 0.32               | 313.26              | 5.93                 | 2.97               |
| 312.74              | 3.57                 | 0.36               | 313.27              | 5.91                 | 2.99               |
| 312.75              | 3.68                 | 0.40               | 313.28              | 5.89                 | 3.02               |
| 312.76              | 3.77                 | 0.43               | 313.29              | 5.87                 | 3.04               |
| 312.77              | 3.87                 | 0.47               | 313.30              | 5.84                 | 3.05               |
| 312.78              | 3.96                 | 0.52               | 313.31              | 5.81                 | 3.06               |
| 312.79              | 4.05                 | 0.56               | 313.32              | 5.77                 | <b>3.06</b>        |
| 312.80              | 4.14                 | 0.60               | 313.33              | 5.73                 | 3.06               |
| 312.81              | 4.23                 | 0.65               | 313.34              | 5.67                 | 3.05               |
| 312.82              | 4.31                 | 0.69               | 313.35              | 5.60                 | 3.03               |
| 312.83              | 4.39                 | 0.74               | 313.36              | 5.51                 | 2.99               |
| 312.84              | 4.47                 | 0.79               | 313.37              | 5.31                 | 2.90               |
| 312.85              | 4.54                 | 0.84               |                     |                      |                    |
| 312.86              | 4.62                 | 0.89               |                     |                      |                    |
| 312.87              | 4.69                 | 0.94               |                     |                      |                    |
| 312.88              | 4.76                 | 1.00               |                     |                      |                    |
| 312.89              | 4.82                 | 1.05               |                     |                      |                    |
| 312.90              | 4.89                 | 1.10               |                     |                      |                    |
| 312.91              | 4.95                 | 1.16               |                     |                      |                    |
| 312.92              | 5.01                 | 1.21               |                     |                      |                    |
| 312.93              | 5.07                 | 1.27               |                     |                      |                    |
| 312.94              | 5.13                 | 1.33               |                     |                      |                    |
| 312.95              | 5.19                 | 1.39               |                     |                      |                    |
| 312.96              | 5.24                 | 1.44               |                     |                      |                    |
| 312.97              | 5.29                 | 1.50               |                     |                      |                    |
| 312.98              | 5.34                 | 1.56               |                     |                      |                    |
| 312.99              | 5.39                 | 1.62               |                     |                      |                    |
| 313.00              | 5.43                 | 1.68               |                     |                      |                    |
| 313.01              | 5.48                 | 1.74               |                     |                      |                    |
| 313.02              | 5.52                 | 1.80               |                     |                      |                    |
| 313.03              | 5.56                 | 1.85               |                     |                      |                    |
| 313.04              | 5.60                 | 1.91               |                     |                      |                    |
| 313.05              | 5.64                 | 1.97               |                     |                      |                    |
| 313.06              | 5.67                 | 2.03               |                     |                      |                    |

**Stage-Area-Storage for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.54              | 0.0                 | 0                       | 313.07              | 0.4                 | 12                      |
| 312.55              | 0.0                 | 0                       | 313.08              | 0.4                 | 12                      |
| 312.56              | 0.0                 | 0                       | 313.09              | 0.4                 | 13                      |
| 312.57              | 0.0                 | 0                       | 313.10              | 0.4                 | 13                      |
| 312.58              | 0.0                 | 0                       | 313.11              | 0.4                 | 13                      |
| 312.59              | 0.0                 | 0                       | 313.12              | 0.4                 | 13                      |
| 312.60              | 0.0                 | 1                       | 313.13              | 0.4                 | 14                      |
| 312.61              | 0.0                 | 1                       | 313.14              | 0.4                 | 14                      |
| 312.62              | 0.0                 | 1                       | 313.15              | 0.4                 | 14                      |
| 312.63              | 0.0                 | 1                       | 313.16              | 0.4                 | 14                      |
| 312.64              | 0.0                 | 1                       | 313.17              | 0.4                 | 15                      |
| 312.65              | 0.0                 | 1                       | 313.18              | 0.4                 | 15                      |
| 312.66              | 0.0                 | 2                       | 313.19              | 0.5                 | 15                      |
| 312.67              | 0.1                 | 2                       | 313.20              | 0.5                 | 15                      |
| 312.68              | 0.1                 | 2                       | 313.21              | 0.5                 | 16                      |
| 312.69              | 0.1                 | 2                       | 313.22              | 0.5                 | 16                      |
| 312.70              | 0.1                 | 2                       | 313.23              | 0.5                 | 16                      |
| 312.71              | 0.1                 | 3                       | 313.24              | 0.5                 | 16                      |
| 312.72              | 0.1                 | 3                       | 313.25              | 0.5                 | 16                      |
| 312.73              | 0.1                 | 3                       | 313.26              | 0.5                 | 17                      |
| 312.74              | 0.1                 | 3                       | 313.27              | 0.5                 | 17                      |
| 312.75              | 0.1                 | 4                       | 313.28              | 0.5                 | 17                      |
| 312.76              | 0.1                 | 4                       | 313.29              | 0.5                 | 17                      |
| 312.77              | 0.1                 | 4                       | 313.30              | 0.5                 | 17                      |
| 312.78              | 0.1                 | 4                       | 313.31              | 0.5                 | 17                      |
| 312.79              | 0.1                 | 5                       | 313.32              | 0.5                 | 18                      |
| 312.80              | 0.1                 | 5                       | 313.33              | 0.5                 | 18                      |
| 312.81              | 0.2                 | 5                       | 313.34              | 0.5                 | 18                      |
| 312.82              | 0.2                 | 5                       | 313.35              | 0.5                 | 18                      |
| 312.83              | 0.2                 | 6                       | 313.36              | 0.5                 | 18                      |
| 312.84              | 0.2                 | 6                       | 313.37              | <b>0.5</b>          | <b>18</b>               |
| 312.85              | 0.2                 | 6                       |                     |                     |                         |
| 312.86              | 0.2                 | 6                       |                     |                     |                         |
| 312.87              | 0.2                 | 7                       |                     |                     |                         |
| 312.88              | 0.2                 | 7                       |                     |                     |                         |
| 312.89              | 0.2                 | 7                       |                     |                     |                         |
| 312.90              | 0.2                 | 7                       |                     |                     |                         |
| 312.91              | 0.2                 | 8                       |                     |                     |                         |
| 312.92              | 0.2                 | 8                       |                     |                     |                         |
| 312.93              | 0.3                 | 8                       |                     |                     |                         |
| 312.94              | 0.3                 | 9                       |                     |                     |                         |
| 312.95              | 0.3                 | 9                       |                     |                     |                         |
| 312.96              | 0.3                 | 9                       |                     |                     |                         |
| 312.97              | 0.3                 | 9                       |                     |                     |                         |
| 312.98              | 0.3                 | 10                      |                     |                     |                         |
| 312.99              | 0.3                 | 10                      |                     |                     |                         |
| 313.00              | 0.3                 | 10                      |                     |                     |                         |
| 313.01              | 0.3                 | 10                      |                     |                     |                         |
| 313.02              | 0.3                 | 11                      |                     |                     |                         |
| 313.03              | 0.3                 | 11                      |                     |                     |                         |
| 313.04              | 0.3                 | 11                      |                     |                     |                         |
| 313.05              | 0.3                 | 12                      |                     |                     |                         |
| 313.06              | 0.4                 | 12                      |                     |                     |                         |

**Summary for Reach 5R: Proposed RRv Swale**

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 4.31" for 100-yr event  
 Inflow = 1.63 cfs @ 11.99 hrs, Volume= 0.086 af  
 Outflow = 1.58 cfs @ 12.01 hrs, Volume= 0.086 af, Atten= 3%, Lag= 1.1 min  
 Routed to Reach 4R : Proposed 10" Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.38 fps, Min. Travel Time= 1.6 min  
 Avg. Velocity = 0.34 fps, Avg. Travel Time= 6.6 min

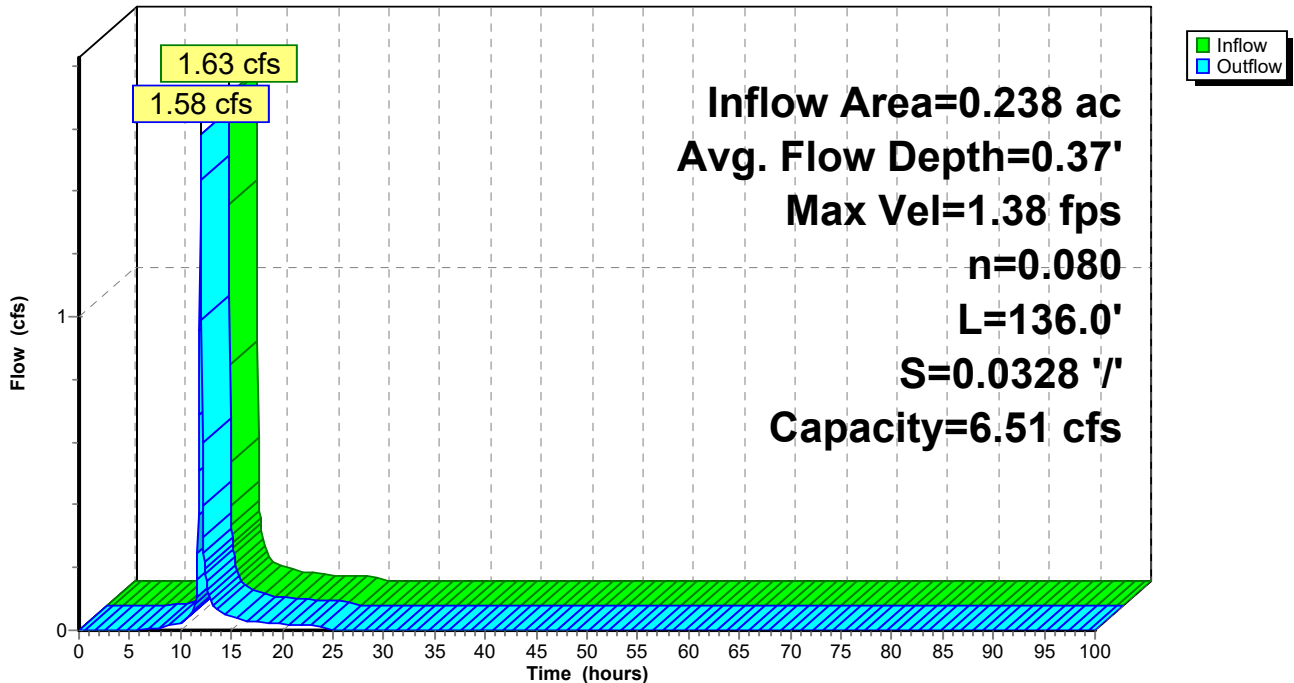
Peak Storage= 155 cf @ 12.01 hrs  
 Average Depth at Peak Storage= 0.37' , Surface Width= 4.21'  
 Bank-Full Depth= 0.75' Flow Area= 3.2 sf, Capacity= 6.51 cfs

2.00' x 0.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 6.50'  
 Length= 136.0' Slope= 0.0328 '/  
 Inlet Invert= 317.00', Outlet Invert= 312.54'

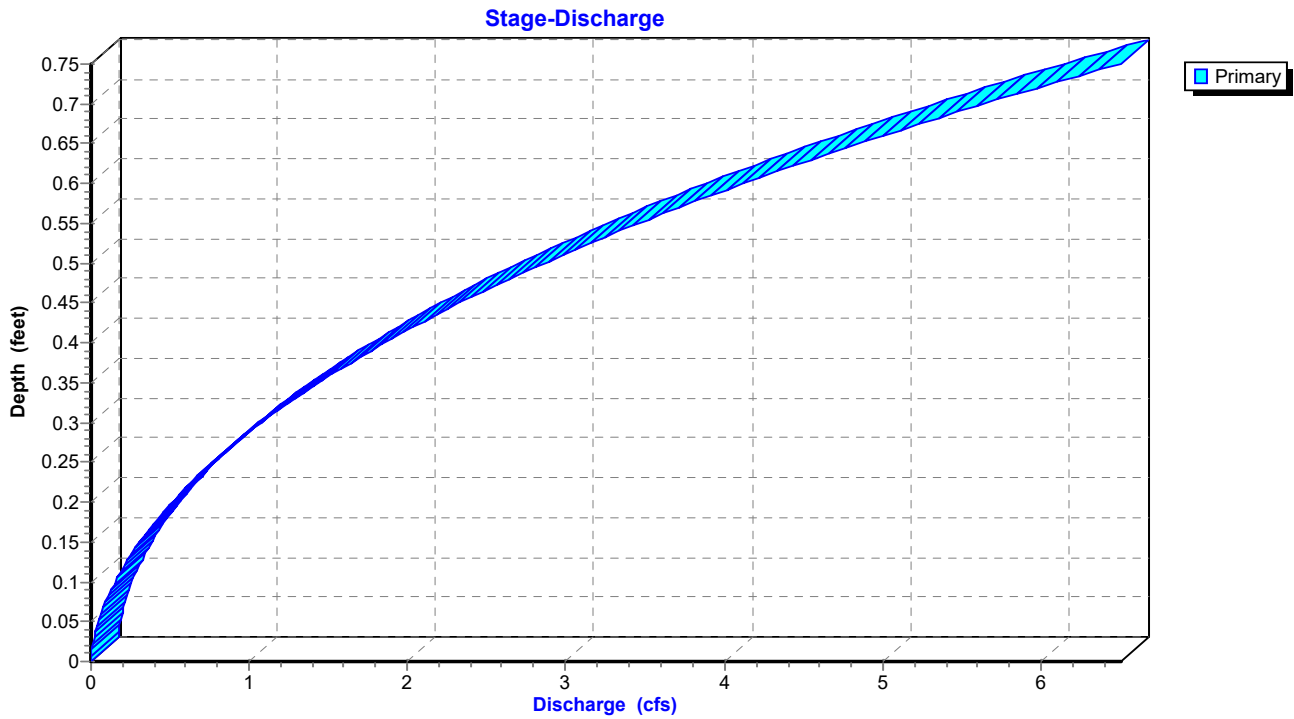


**Reach 5R: Proposed RRv Swale**

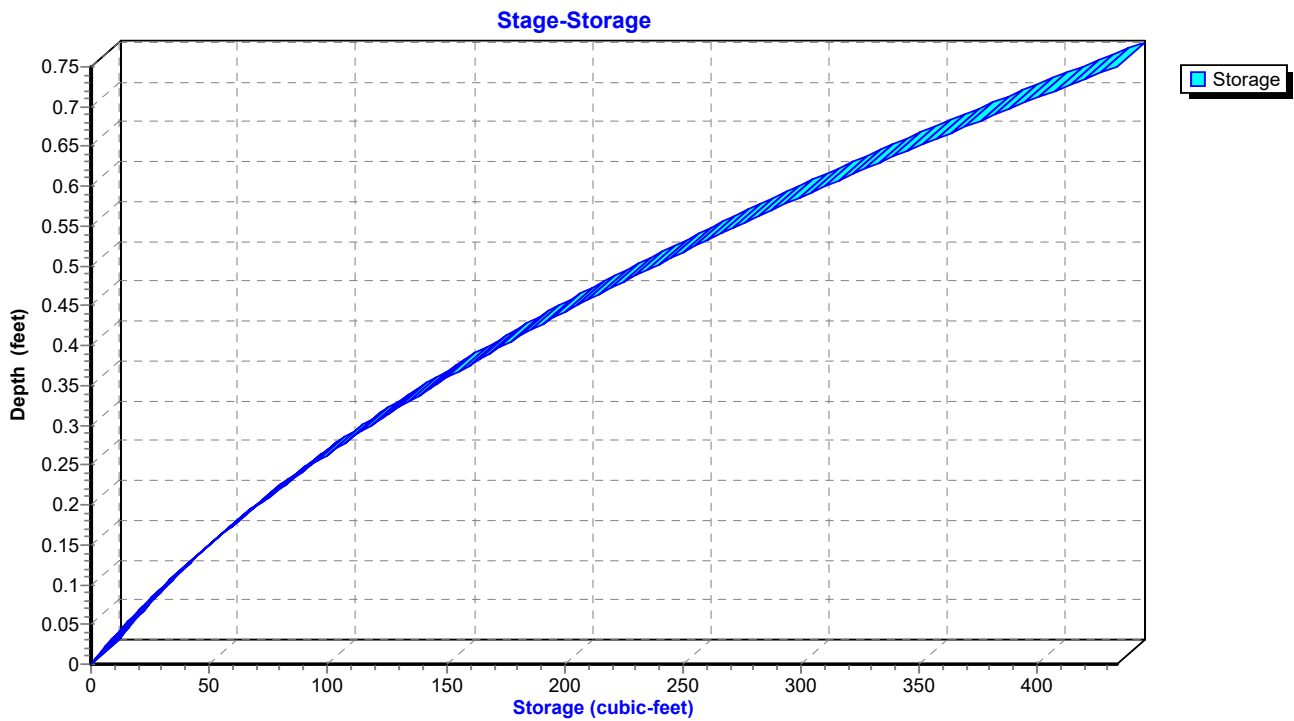
Hydrograph



Reach 5R: Proposed RRv Swale



Reach 5R: Proposed RRv Swale



**Hydrograph for Reach 5R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 7.50         | 0.01         | 4                    | 317.01           | 0.01          |
| 10.00        | <b>0.03</b>  | <b>10</b>            | <b>317.03</b>    | <b>0.02</b>   |
| 12.50        | <b>0.15</b>  | <b>33</b>            | <b>317.10</b>    | <b>0.16</b>   |
| 15.00        | 0.04         | 14                   | 317.05           | 0.04          |
| 17.50        | 0.03         | 10                   | 317.04           | 0.03          |
| 20.00        | 0.02         | 8                    | 317.03           | 0.02          |
| 22.50        | 0.02         | 8                    | 317.03           | 0.02          |
| 25.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 317.00           | 0.00          |

**Stage-Discharge for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 317.00              | 0.00                 | 0.00               | 317.53              | 1.69                 | 3.21               |
| 317.01              | 0.15                 | 0.00               | 317.54              | 1.71                 | 3.33               |
| 317.02              | 0.24                 | 0.01               | 317.55              | 1.72                 | 3.46               |
| 317.03              | 0.31                 | 0.02               | 317.56              | 1.74                 | 3.58               |
| 317.04              | 0.38                 | 0.03               | 317.57              | 1.76                 | 3.71               |
| 317.05              | 0.43                 | 0.05               | 317.58              | 1.77                 | 3.85               |
| 317.06              | 0.49                 | 0.06               | 317.59              | 1.79                 | 3.98               |
| 317.07              | 0.53                 | 0.08               | 317.60              | 1.81                 | 4.12               |
| 317.08              | 0.58                 | 0.10               | 317.61              | 1.82                 | 4.26               |
| 317.09              | 0.62                 | 0.13               | 317.62              | 1.84                 | 4.40               |
| 317.10              | 0.66                 | 0.15               | 317.63              | 1.85                 | 4.55               |
| 317.11              | 0.70                 | 0.18               | 317.64              | 1.87                 | 4.69               |
| 317.12              | 0.74                 | 0.21               | 317.65              | 1.89                 | 4.84               |
| 317.13              | 0.77                 | 0.24               | 317.66              | 1.90                 | 5.00               |
| 317.14              | 0.81                 | 0.27               | 317.67              | 1.92                 | 5.15               |
| 317.15              | 0.84                 | 0.31               | 317.68              | 1.93                 | 5.31               |
| 317.16              | 0.87                 | 0.35               | 317.69              | 1.95                 | 5.48               |
| 317.17              | 0.90                 | 0.38               | 317.70              | 1.97                 | 5.64               |
| 317.18              | 0.93                 | 0.43               | 317.71              | 1.98                 | 5.81               |
| 317.19              | 0.96                 | 0.47               | 317.72              | 2.00                 | 5.98               |
| 317.20              | 0.99                 | 0.51               | 317.73              | 2.01                 | 6.15               |
| 317.21              | 1.02                 | 0.56               | 317.74              | 2.03                 | 6.33               |
| 317.22              | 1.04                 | 0.61               | 317.75              | <b>2.04</b>          | <b>6.51</b>        |
| 317.23              | 1.07                 | 0.66               |                     |                      |                    |
| 317.24              | 1.09                 | 0.71               |                     |                      |                    |
| 317.25              | 1.12                 | 0.77               |                     |                      |                    |
| 317.26              | 1.14                 | 0.83               |                     |                      |                    |
| 317.27              | 1.17                 | 0.89               |                     |                      |                    |
| 317.28              | 1.19                 | 0.95               |                     |                      |                    |
| 317.29              | 1.21                 | 1.01               |                     |                      |                    |
| 317.30              | 1.24                 | 1.08               |                     |                      |                    |
| 317.31              | 1.26                 | 1.14               |                     |                      |                    |
| 317.32              | 1.28                 | 1.21               |                     |                      |                    |
| 317.33              | 1.30                 | 1.29               |                     |                      |                    |
| 317.34              | 1.33                 | 1.36               |                     |                      |                    |
| 317.35              | 1.35                 | 1.44               |                     |                      |                    |
| 317.36              | 1.37                 | 1.52               |                     |                      |                    |
| 317.37              | 1.39                 | 1.60               |                     |                      |                    |
| 317.38              | 1.41                 | 1.68               |                     |                      |                    |
| 317.39              | 1.43                 | 1.77               |                     |                      |                    |
| 317.40              | 1.45                 | 1.85               |                     |                      |                    |
| 317.41              | 1.47                 | 1.94               |                     |                      |                    |
| 317.42              | 1.49                 | 2.04               |                     |                      |                    |
| 317.43              | 1.51                 | 2.13               |                     |                      |                    |
| 317.44              | 1.53                 | 2.23               |                     |                      |                    |
| 317.45              | 1.54                 | 2.33               |                     |                      |                    |
| 317.46              | 1.56                 | 2.43               |                     |                      |                    |
| 317.47              | 1.58                 | 2.53               |                     |                      |                    |
| 317.48              | 1.60                 | 2.64               |                     |                      |                    |
| 317.49              | 1.62                 | 2.75               |                     |                      |                    |
| 317.50              | 1.64                 | 2.86               |                     |                      |                    |
| 317.51              | 1.65                 | 2.98               |                     |                      |                    |
| 317.52              | 1.67                 | 3.09               |                     |                      |                    |

**Stage-Area-Storage for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 317.00              | 0.0                 | 0                       | 317.53              | 1.9                 | 259                     |
| 317.01              | 0.0                 | 3                       | 317.54              | 2.0                 | 266                     |
| 317.02              | 0.0                 | 6                       | 317.55              | 2.0                 | 273                     |
| 317.03              | 0.1                 | 9                       | 317.56              | 2.1                 | 280                     |
| 317.04              | 0.1                 | 12                      | 317.57              | 2.1                 | 288                     |
| 317.05              | 0.1                 | 15                      | 317.58              | 2.2                 | 295                     |
| 317.06              | 0.1                 | 18                      | 317.59              | 2.2                 | 303                     |
| 317.07              | 0.2                 | 21                      | 317.60              | 2.3                 | 310                     |
| 317.08              | 0.2                 | 24                      | 317.61              | 2.3                 | 318                     |
| 317.09              | 0.2                 | 28                      | 317.62              | 2.4                 | 325                     |
| 317.10              | 0.2                 | 31                      | 317.63              | 2.5                 | 333                     |
| 317.11              | 0.3                 | 35                      | 317.64              | 2.5                 | 341                     |
| 317.12              | 0.3                 | 39                      | 317.65              | 2.6                 | 349                     |
| 317.13              | 0.3                 | 42                      | 317.66              | 2.6                 | 357                     |
| 317.14              | 0.3                 | 46                      | 317.67              | 2.7                 | 365                     |
| 317.15              | 0.4                 | 50                      | 317.68              | 2.7                 | 374                     |
| 317.16              | 0.4                 | 54                      | 317.69              | 2.8                 | 382                     |
| 317.17              | 0.4                 | 58                      | 317.70              | 2.9                 | 390                     |
| 317.18              | 0.5                 | 62                      | 317.71              | 2.9                 | 399                     |
| 317.19              | 0.5                 | 66                      | 317.72              | 3.0                 | 407                     |
| 317.20              | 0.5                 | 71                      | 317.73              | 3.1                 | 416                     |
| 317.21              | 0.6                 | 75                      | 317.74              | 3.1                 | 425                     |
| 317.22              | 0.6                 | 80                      | 317.75              | <b>3.2</b>          | <b>434</b>              |
| 317.23              | 0.6                 | 84                      |                     |                     |                         |
| 317.24              | 0.7                 | 89                      |                     |                     |                         |
| 317.25              | 0.7                 | 94                      |                     |                     |                         |
| 317.26              | 0.7                 | 98                      |                     |                     |                         |
| 317.27              | 0.8                 | 103                     |                     |                     |                         |
| 317.28              | 0.8                 | 108                     |                     |                     |                         |
| 317.29              | 0.8                 | 113                     |                     |                     |                         |
| 317.30              | 0.9                 | 118                     |                     |                     |                         |
| 317.31              | 0.9                 | 124                     |                     |                     |                         |
| 317.32              | 0.9                 | 129                     |                     |                     |                         |
| 317.33              | 1.0                 | 134                     |                     |                     |                         |
| 317.34              | 1.0                 | 140                     |                     |                     |                         |
| 317.35              | 1.1                 | 145                     |                     |                     |                         |
| 317.36              | 1.1                 | 151                     |                     |                     |                         |
| 317.37              | 1.2                 | 157                     |                     |                     |                         |
| 317.38              | 1.2                 | 162                     |                     |                     |                         |
| 317.39              | 1.2                 | 168                     |                     |                     |                         |
| 317.40              | 1.3                 | 174                     |                     |                     |                         |
| 317.41              | 1.3                 | 180                     |                     |                     |                         |
| 317.42              | 1.4                 | 186                     |                     |                     |                         |
| 317.43              | 1.4                 | 192                     |                     |                     |                         |
| 317.44              | 1.5                 | 199                     |                     |                     |                         |
| 317.45              | 1.5                 | 205                     |                     |                     |                         |
| 317.46              | 1.6                 | 211                     |                     |                     |                         |
| 317.47              | 1.6                 | 218                     |                     |                     |                         |
| 317.48              | 1.7                 | 225                     |                     |                     |                         |
| 317.49              | 1.7                 | 231                     |                     |                     |                         |
| 317.50              | 1.8                 | 238                     |                     |                     |                         |
| 317.51              | 1.8                 | 245                     |                     |                     |                         |
| 317.52              | 1.9                 | 252                     |                     |                     |                         |

### Summary for Reach 6R: 12" Culvert Pond Discharge

[52] Hint: Inlet/Outlet conditions not evaluated

[55] Hint: Peak inflow is 120% of Manning's capacity

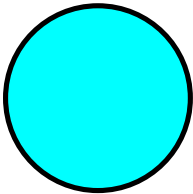
[76] Warning: Detained 0.009 af (Pond w/culvert advised)

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 3.90" for 100-yr event  
Inflow = 4.14 cfs @ 12.06 hrs, Volume= 0.512 af  
Outflow = 3.44 cfs @ 12.00 hrs, Volume= 0.512 af, Atten= 17%, Lag= 0.0 min  
Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 5.00 fps, Min. Travel Time= 0.1 min  
Avg. Velocity= 1.11 fps, Avg. Travel Time= 0.3 min

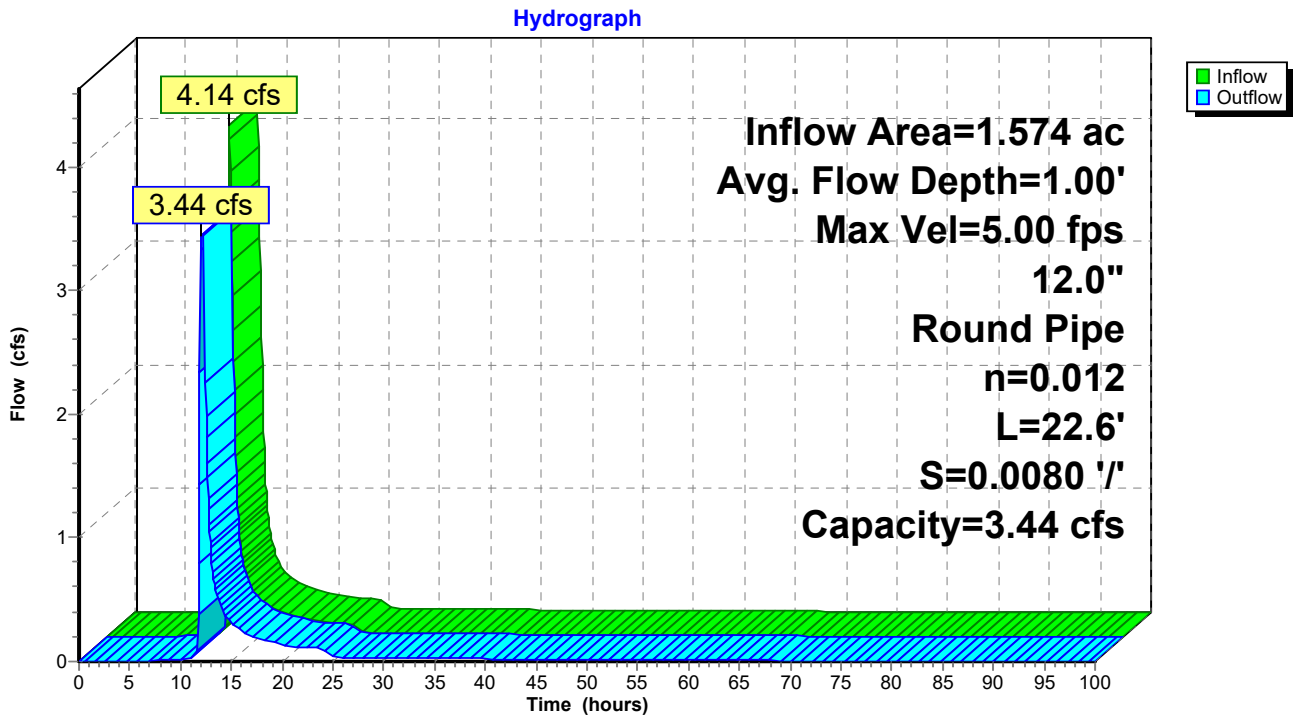
Peak Storage= 18 cf @ 12.00 hrs  
Average Depth at Peak Storage= 1.00'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.44 cfs

12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 22.6' Slope= 0.0080 '/'  
Inlet Invert= 309.83', Outlet Invert= 309.65'

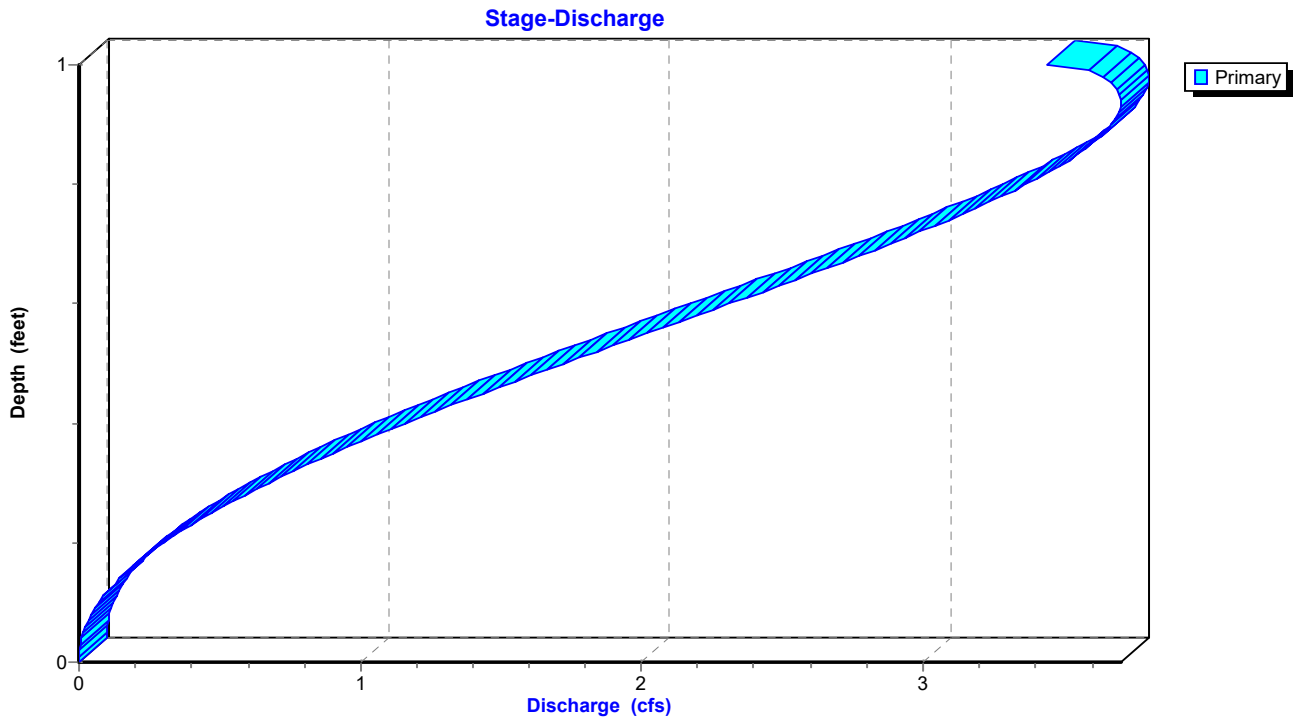




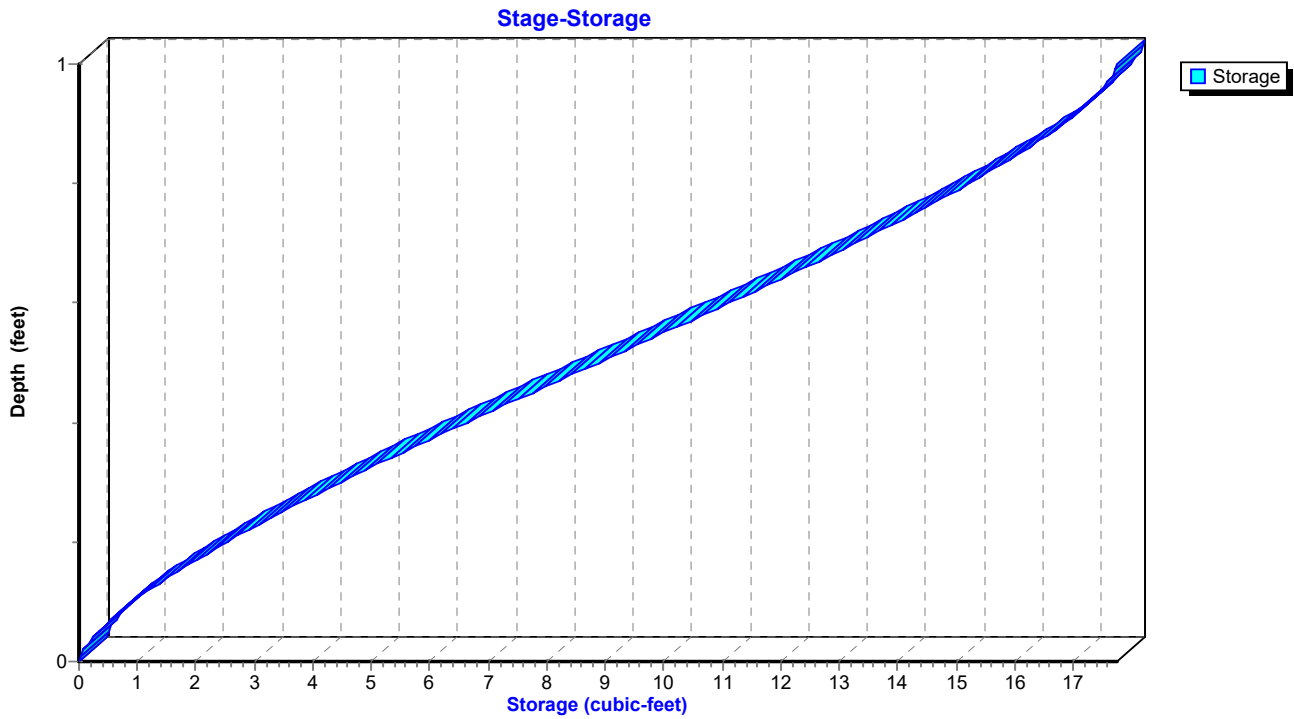
Reach 6R: 12" Culvert Pond Discharge



Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



**Hydrograph for Reach 6R: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 2.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 5.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 7.50         | 0.01         | 0                    | 309.86           | 0.01          |
| 10.00        | <b>0.02</b>  | <b>0</b>             | <b>309.88</b>    | <b>0.02</b>   |
| 12.50        | <b>2.00</b>  | <b>10</b>            | <b>310.37</b>    | <b>1.98</b>   |
| 15.00        | 0.31         | 3                    | 310.03           | 0.31          |
| 17.50        | 0.19         | 2                    | 309.99           | 0.19          |
| 20.00        | 0.14         | 1                    | 309.97           | 0.14          |
| 22.50        | 0.11         | 1                    | 309.95           | 0.11          |
| 25.00        | 0.05         | 1                    | 309.91           | 0.05          |
| 27.50        | 0.03         | 0                    | 309.89           | 0.03          |
| 30.00        | 0.03         | 0                    | 309.89           | 0.03          |
| 32.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 35.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 37.50        | 0.02         | 0                    | 309.89           | 0.02          |
| 40.00        | 0.02         | 0                    | 309.89           | 0.02          |
| 42.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 45.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 47.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 50.00        | 0.02         | 0                    | 309.88           | 0.02          |
| 52.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 55.00        | 0.01         | 0                    | 309.88           | 0.01          |
| 57.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 60.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 62.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 65.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 67.50        | 0.01         | 0                    | 309.86           | 0.01          |
| 70.00        | 0.01         | 0                    | 309.86           | 0.01          |
| 72.50        | 0.00         | 0                    | 309.86           | 0.00          |
| 75.00        | 0.00         | 0                    | 309.85           | 0.00          |
| 77.50        | 0.00         | 0                    | 309.85           | 0.00          |
| 80.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 82.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 85.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 87.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 90.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 92.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 95.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 97.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 100.00       | 0.00         | 0                    | 309.83           | 0.00          |

**Stage-Discharge for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 309.83              | 0.00                 | 0.00               | 310.36              | 4.49                 | 1.90               |
| 309.84              | 0.39                 | 0.00               | 310.37              | 4.53                 | 1.96               |
| 309.85              | 0.62                 | 0.00               | 310.38              | 4.56                 | 2.02               |
| 309.86              | 0.81                 | 0.01               | 310.39              | 4.59                 | 2.08               |
| 309.87              | 0.97                 | 0.01               | 310.40              | 4.62                 | 2.14               |
| 309.88              | 1.13                 | 0.02               | 310.41              | 4.65                 | 2.20               |
| 309.89              | 1.27                 | 0.02               | 310.42              | 4.68                 | 2.26               |
| 309.90              | 1.40                 | 0.03               | 310.43              | 4.70                 | 2.31               |
| 309.91              | 1.53                 | 0.04               | 310.44              | 4.73                 | 2.37               |
| 309.92              | 1.65                 | 0.06               | 310.45              | 4.75                 | 2.43               |
| 309.93              | 1.76                 | 0.07               | 310.46              | 4.78                 | 2.49               |
| 309.94              | 1.87                 | 0.09               | 310.47              | 4.80                 | 2.55               |
| 309.95              | 1.97                 | 0.11               | 310.48              | 4.82                 | 2.61               |
| 309.96              | 2.07                 | 0.12               | 310.49              | 4.84                 | 2.66               |
| 309.97              | 2.17                 | 0.15               | 310.50              | 4.86                 | 2.72               |
| 309.98              | 2.27                 | 0.17               | 310.51              | 4.88                 | 2.77               |
| 309.99              | 2.36                 | 0.19               | 310.52              | 4.90                 | 2.83               |
| 310.00              | 2.45                 | 0.22               | 310.53              | 4.91                 | 2.88               |
| 310.01              | 2.53                 | 0.24               | 310.54              | 4.93                 | 2.94               |
| 310.02              | 2.62                 | 0.27               | 310.55              | 4.94                 | 2.99               |
| 310.03              | 2.70                 | 0.30               | 310.56              | 4.95                 | 3.04               |
| 310.04              | 2.78                 | 0.33               | 310.57              | 4.96                 | 3.09               |
| 310.05              | 2.85                 | 0.37               | 310.58              | 4.97                 | 3.14               |
| 310.06              | 2.93                 | 0.40               | 310.59              | 4.98                 | 3.19               |
| 310.07              | 3.00                 | 0.44               | 310.60              | 4.99                 | 3.24               |
| 310.08              | 3.07                 | 0.47               | 310.61              | 4.99                 | 3.28               |
| 310.09              | 3.14                 | 0.51               | 310.62              | 5.00                 | 3.32               |
| 310.10              | 3.21                 | 0.55               | 310.63              | 5.00                 | 3.37               |
| 310.11              | 3.28                 | 0.59               | 310.64              | <b>5.00</b>          | 3.41               |
| 310.12              | 3.34                 | 0.63               | 310.65              | 5.00                 | 3.45               |
| 310.13              | 3.40                 | 0.67               | 310.66              | 5.00                 | 3.48               |
| 310.14              | 3.47                 | 0.72               | 310.67              | 4.99                 | 3.52               |
| 310.15              | 3.53                 | 0.76               | 310.68              | 4.99                 | 3.55               |
| 310.16              | 3.58                 | 0.81               | 310.69              | 4.98                 | 3.58               |
| 310.17              | 3.64                 | 0.86               | 310.70              | 4.97                 | 3.61               |
| 310.18              | 3.70                 | 0.91               | 310.71              | 4.96                 | 3.63               |
| 310.19              | 3.75                 | 0.95               | 310.72              | 4.95                 | 3.65               |
| 310.20              | 3.80                 | 1.01               | 310.73              | 4.93                 | 3.67               |
| 310.21              | 3.86                 | 1.06               | 310.74              | 4.91                 | 3.69               |
| 310.22              | 3.91                 | 1.11               | 310.75              | 4.89                 | 3.70               |
| 310.23              | 3.96                 | 1.16               | 310.76              | 4.87                 | 3.70               |
| 310.24              | 4.00                 | 1.21               | 310.77              | 4.84                 | <b>3.71</b>        |
| 310.25              | 4.05                 | 1.27               | 310.78              | 4.80                 | 3.70               |
| 310.26              | 4.10                 | 1.32               | 310.79              | 4.76                 | 3.69               |
| 310.27              | 4.14                 | 1.38               | 310.80              | 4.72                 | 3.67               |
| 310.28              | 4.19                 | 1.43               | 310.81              | 4.66                 | 3.64               |
| 310.29              | 4.23                 | 1.49               | 310.82              | 4.58                 | 3.59               |
| 310.30              | 4.27                 | 1.55               | 310.83              | 4.39                 | 3.44               |
| 310.31              | 4.31                 | 1.61               |                     |                      |                    |
| 310.32              | 4.35                 | 1.66               |                     |                      |                    |
| 310.33              | 4.39                 | 1.72               |                     |                      |                    |
| 310.34              | 4.42                 | 1.78               |                     |                      |                    |
| 310.35              | 4.46                 | 1.84               |                     |                      |                    |

**Stage-Area-Storage for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 309.83              | 0.0                 | 0                       | 310.36              | 0.4                 | 10                      |
| 309.84              | 0.0                 | 0                       | 310.37              | 0.4                 | 10                      |
| 309.85              | 0.0                 | 0                       | 310.38              | 0.4                 | 10                      |
| 309.86              | 0.0                 | 0                       | 310.39              | 0.5                 | 10                      |
| 309.87              | 0.0                 | 0                       | 310.40              | 0.5                 | 10                      |
| 309.88              | 0.0                 | 0                       | 310.41              | 0.5                 | 11                      |
| 309.89              | 0.0                 | 0                       | 310.42              | 0.5                 | 11                      |
| 309.90              | 0.0                 | 1                       | 310.43              | 0.5                 | 11                      |
| 309.91              | 0.0                 | 1                       | 310.44              | 0.5                 | 11                      |
| 309.92              | 0.0                 | 1                       | 310.45              | 0.5                 | 12                      |
| 309.93              | 0.0                 | 1                       | 310.46              | 0.5                 | 12                      |
| 309.94              | 0.0                 | 1                       | 310.47              | 0.5                 | 12                      |
| 309.95              | 0.1                 | 1                       | 310.48              | 0.5                 | 12                      |
| 309.96              | 0.1                 | 1                       | 310.49              | 0.5                 | 12                      |
| 309.97              | 0.1                 | 2                       | 310.50              | 0.6                 | 13                      |
| 309.98              | 0.1                 | 2                       | 310.51              | 0.6                 | 13                      |
| 309.99              | 0.1                 | 2                       | 310.52              | 0.6                 | 13                      |
| 310.00              | 0.1                 | 2                       | 310.53              | 0.6                 | 13                      |
| 310.01              | 0.1                 | 2                       | 310.54              | 0.6                 | 13                      |
| 310.02              | 0.1                 | 2                       | 310.55              | 0.6                 | 14                      |
| 310.03              | 0.1                 | 3                       | 310.56              | 0.6                 | 14                      |
| 310.04              | 0.1                 | 3                       | 310.57              | 0.6                 | 14                      |
| 310.05              | 0.1                 | 3                       | 310.58              | 0.6                 | 14                      |
| 310.06              | 0.1                 | 3                       | 310.59              | 0.6                 | 14                      |
| 310.07              | 0.1                 | 3                       | 310.60              | 0.6                 | 15                      |
| 310.08              | 0.2                 | 3                       | 310.61              | 0.7                 | 15                      |
| 310.09              | 0.2                 | 4                       | 310.62              | 0.7                 | 15                      |
| 310.10              | 0.2                 | 4                       | 310.63              | 0.7                 | 15                      |
| 310.11              | 0.2                 | 4                       | 310.64              | 0.7                 | 15                      |
| 310.12              | 0.2                 | 4                       | 310.65              | 0.7                 | 16                      |
| 310.13              | 0.2                 | 4                       | 310.66              | 0.7                 | 16                      |
| 310.14              | 0.2                 | 5                       | 310.67              | 0.7                 | 16                      |
| 310.15              | 0.2                 | 5                       | 310.68              | 0.7                 | 16                      |
| 310.16              | 0.2                 | 5                       | 310.69              | 0.7                 | 16                      |
| 310.17              | 0.2                 | 5                       | 310.70              | 0.7                 | 16                      |
| 310.18              | 0.2                 | 6                       | 310.71              | 0.7                 | 17                      |
| 310.19              | 0.3                 | 6                       | 310.72              | 0.7                 | 17                      |
| 310.20              | 0.3                 | 6                       | 310.73              | 0.7                 | 17                      |
| 310.21              | 0.3                 | 6                       | 310.74              | 0.8                 | 17                      |
| 310.22              | 0.3                 | 6                       | 310.75              | 0.8                 | 17                      |
| 310.23              | 0.3                 | 7                       | 310.76              | 0.8                 | 17                      |
| 310.24              | 0.3                 | 7                       | 310.77              | 0.8                 | 17                      |
| 310.25              | 0.3                 | 7                       | 310.78              | 0.8                 | 17                      |
| 310.26              | 0.3                 | 7                       | 310.79              | 0.8                 | 18                      |
| 310.27              | 0.3                 | 8                       | 310.80              | 0.8                 | 18                      |
| 310.28              | 0.3                 | 8                       | 310.81              | 0.8                 | 18                      |
| 310.29              | 0.4                 | 8                       | 310.82              | 0.8                 | 18                      |
| 310.30              | 0.4                 | 8                       | 310.83              | <b>0.8</b>          | <b>18</b>               |
| 310.31              | 0.4                 | 8                       |                     |                     |                         |
| 310.32              | 0.4                 | 9                       |                     |                     |                         |
| 310.33              | 0.4                 | 9                       |                     |                     |                         |
| 310.34              | 0.4                 | 9                       |                     |                     |                         |
| 310.35              | 0.4                 | 9                       |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.182 ac, 9.18% Impervious, Inflow Depth = 1.58" for 100-yr event  
 Inflow = 7.08 cfs @ 12.03 hrs, Volume= 0.418 af  
 Outflow = 0.94 cfs @ 12.57 hrs, Volume= 0.278 af, Atten= 87%, Lag= 32.1 min  
 Primary = 0.94 cfs @ 12.57 hrs, Volume= 0.278 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 316.65' @ 12.57 hrs Surf.Area= 0.192 ac Storage= 0.359 af (0.166 af above start)

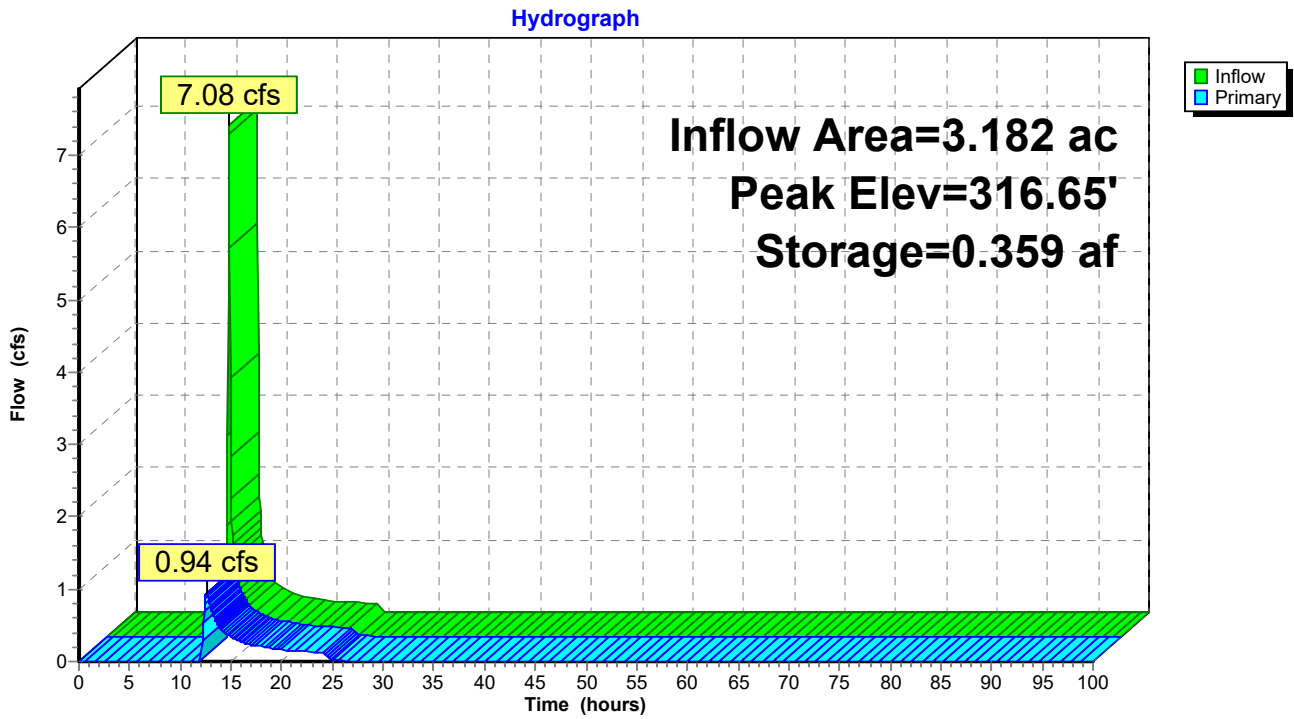
Plug-Flow detention time= 549.7 min calculated for 0.085 af (20% of inflow)  
 Center-of-Mass det. time= 107.5 min ( 985.4 - 877.9 )

| Volume              | Invert               | Avail.Storage    | Storage Description  |                          |                     |  |
|---------------------|----------------------|------------------|--|--------------------------|---------------------|--|
| #1                  | 313.83'              | 0.443 af         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                          |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(acres) | Perim.<br>(feet) | Inc.Store<br>(acre-feet)                                   | Cum.Store<br>(acre-feet) | Wet.Area<br>(acres) |  |
| 313.83              | 0.088                | 271.6            | 0.000  | 0.000                    | 0.088               |  |
| 314.00              | 0.107                | 290.3            | 0.017  | 0.017                    | 0.107               |  |
| 315.50              | 0.128                | 309.9            | 0.176  | 0.193                    | 0.131               |  |
| 316.00              | 0.139                | 319.8            | 0.067  | 0.259                    | 0.143               |  |
| 316.50              | 0.154                | 348.8            | 0.073  | 0.333                    | 0.179               |  |
| 317.00              | 0.295                | 446.8            | 0.110  | 0.443                    | 0.321               |  |

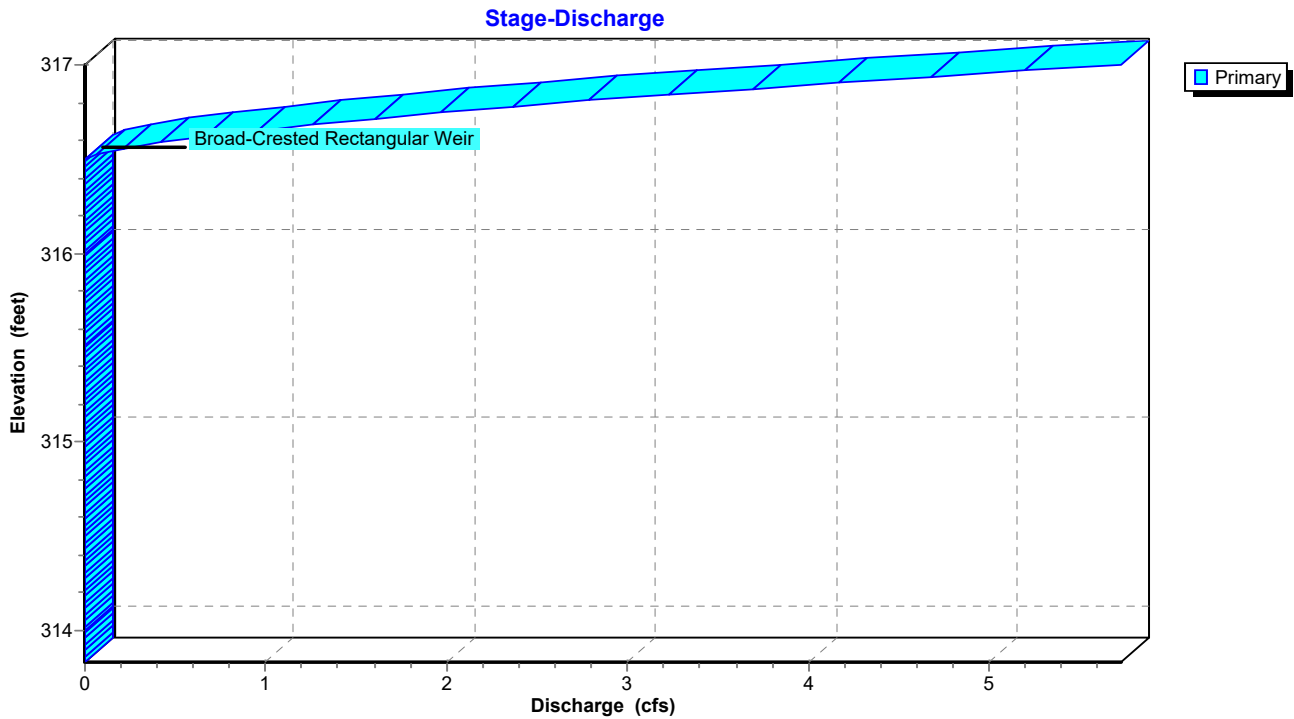
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60             |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.94 cfs @ 12.57 hrs HW=316.65' TW=316.19' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.94 cfs @ 1.04 fps)

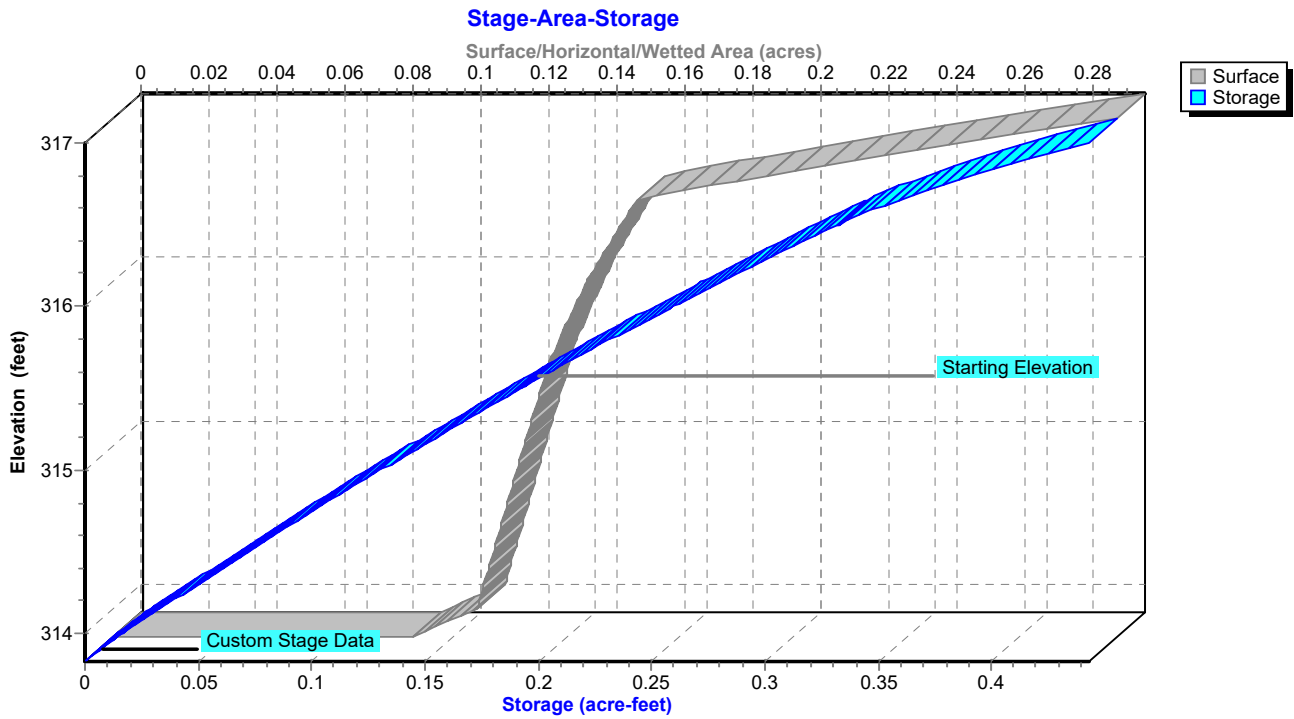
**Pond 1ST: Existing Sediment Trap**



**Pond 1ST: Existing Sediment Trap**



### Pond 1ST: Existing Sediment Trap





**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 2.50            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 5.00            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 7.50            | 0.00            | 0.193                  | 315.50              | 0.00             |
| 10.00           | <b>0.00</b>     | 0.193                  | 315.50              | 0.00             |
| 12.50           | <b>1.06</b>     | <b>0.358</b>           | <b>316.65</b>       | <b>0.92</b>      |
| 15.00           | 0.31            | <b>0.345</b>           | <b>316.58</b>       | <b>0.34</b>      |
| 17.50           | 0.21            | 0.342                  | 316.56              | 0.22             |
| 20.00           | 0.15            | 0.340                  | 316.55              | 0.16             |
| 22.50           | 0.13            | 0.339                  | 316.54              | 0.14             |
| 25.00           | 0.00            | 0.335                  | 316.51              | 0.03             |
| 27.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 30.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 32.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 35.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 37.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 40.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 42.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 45.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 47.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 50.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 52.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 55.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 57.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 60.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 62.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 65.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 67.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 70.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 72.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 75.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 77.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 80.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 82.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 85.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 87.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 90.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 92.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 95.00           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 97.50           | 0.00            | 0.333                  | 316.50              | 0.00             |
| 100.00          | 0.00            | 0.333                  | 316.50              | 0.00             |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

[63] Warning: Exceeded Reach 6R INLET depth by 0.34' @ 99.95 hrs

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth = 2.39" for 100-yr event  
 Inflow = 11.69 cfs @ 12.04 hrs, Volume= 1.068 af  
 Outflow = 9.04 cfs @ 12.12 hrs, Volume= 0.922 af, Atten= 23%, Lag= 5.1 min  
 Primary = 9.04 cfs @ 12.12 hrs, Volume= 0.922 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 310.64' @ 12.12 hrs Surf.Area= 0.112 ac Storage= 0.204 af (0.193 af above start)

Plug-Flow detention time= 223.5 min calculated for 0.911 af (85% of inflow)  
 Center-of-Mass det. time= 56.2 min ( 1,051.0 - 994.7 )

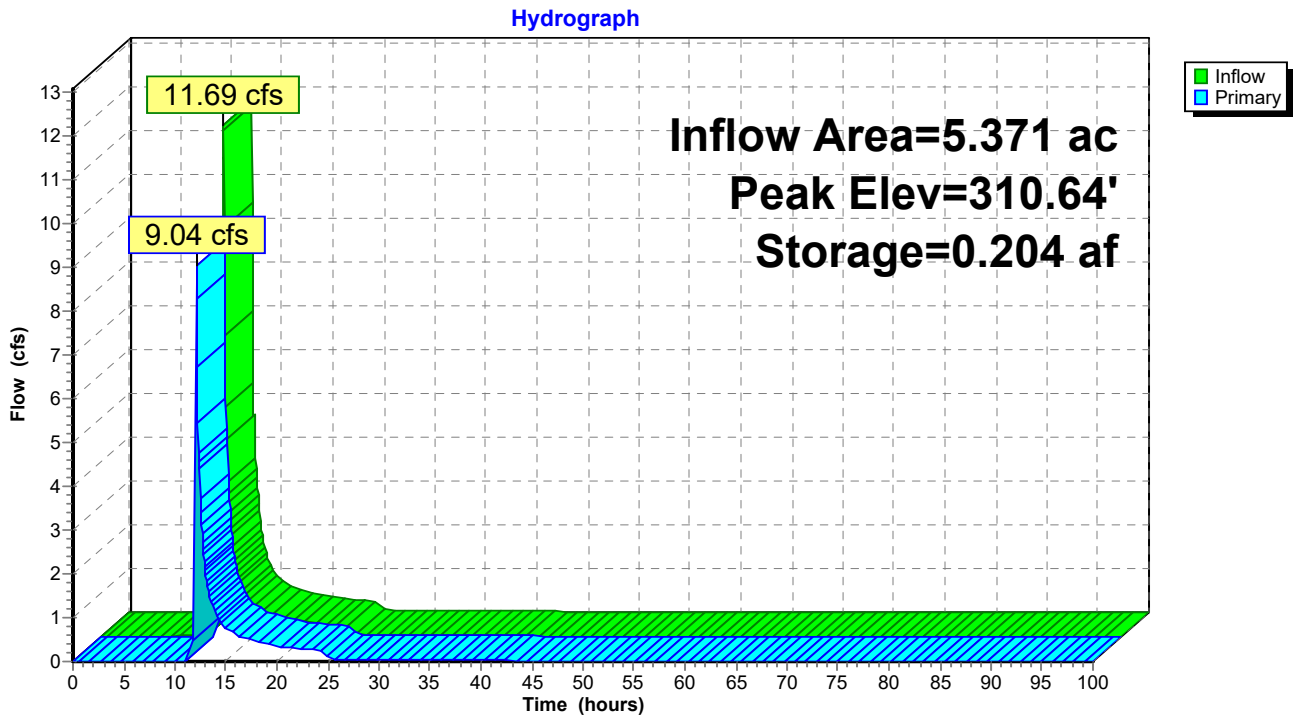
| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 307.00' | 0.248 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet) | Cum.Store (acre-feet) | Wet.Area (acres) |
|------------------|-------------------|---------------|-----------------------|-----------------------|------------------|
| 307.00           | 0.019             | 188.4         | 0.000                 | 0.000                 | 0.019            |
| 307.50           | 0.026             | 206.4         | 0.011                 | 0.011                 | 0.032            |
| 308.00           | 0.036             | 232.2         | 0.015                 | 0.027                 | 0.053            |
| 309.00           | 0.057             | 269.3         | 0.046                 | 0.073                 | 0.087            |
| 310.00           | 0.083             | 316.3         | 0.070                 | 0.142                 | 0.138            |
| 311.00           | 0.131             | 434.9         | 0.106                 | 0.248                 | 0.301            |

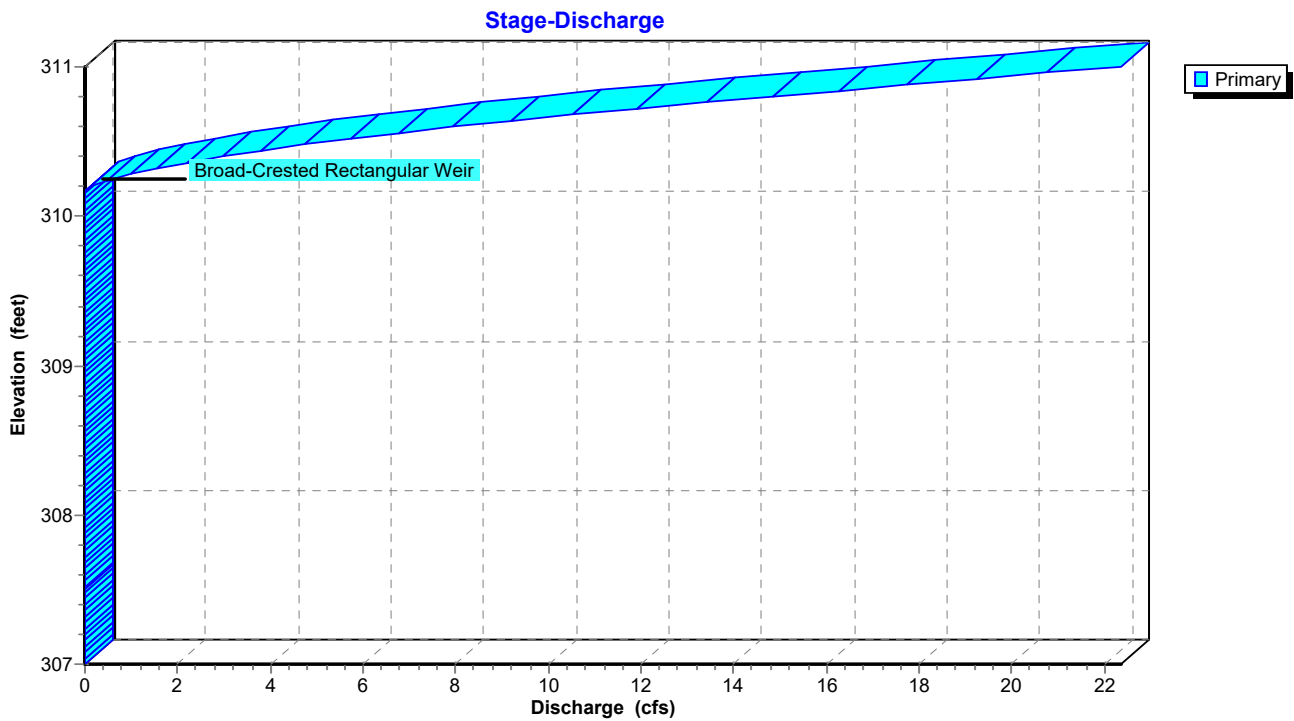
| Device | Routing | Invert  | Outlet Devices  |
|--------|---------|---------|---|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Primary OutFlow** Max=8.51 cfs @ 12.12 hrs HW=310.62' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 8.51 cfs @ 1.73 fps)

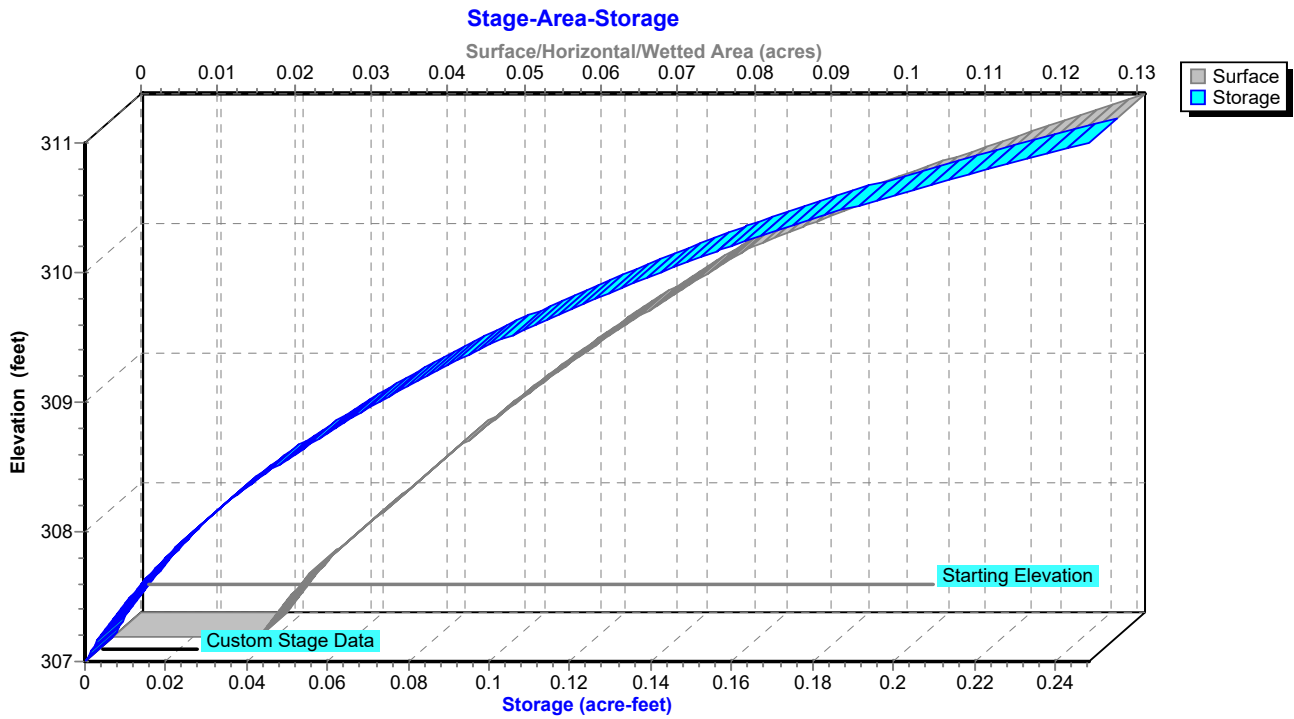
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(acre-feet) | Elevation<br>(feet) | Primary<br>(cfs) |
|-----------------|-----------------|------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 2.50            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 5.00            | 0.00            | 0.011                  | 307.50              | 0.00             |
| 7.50            | 0.02            | 0.012                  | 307.55              | 0.00             |
| 10.00           | <b>0.07</b>     | <b>0.021</b>           | <b>307.82</b>       | <b>0.00</b>      |
| 12.50           | <b>3.26</b>     | <b>0.183</b>           | <b>310.44</b>       | <b>3.72</b>      |
| 15.00           | 0.76            | 0.166                  | 310.26              | 0.77             |
| 17.50           | 0.48            | 0.163                  | 310.24              | 0.49             |
| 20.00           | 0.34            | 0.162                  | 310.23              | 0.35             |
| 22.50           | 0.29            | 0.162                  | 310.22              | 0.29             |
| 25.00           | 0.08            | 0.159                  | 310.19              | 0.10             |
| 27.50           | 0.03            | 0.158                  | 310.18              | 0.03             |
| 30.00           | 0.03            | 0.158                  | 310.18              | 0.03             |
| 32.50           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 35.00           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 37.50           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 40.00           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 42.50           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 45.00           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 47.50           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 50.00           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 52.50           | 0.02            | 0.158                  | 310.18              | 0.02             |
| 55.00           | 0.01            | 0.158                  | 310.18              | 0.01             |
| 57.50           | 0.01            | 0.158                  | 310.18              | 0.01             |
| 60.00           | 0.01            | 0.158                  | 310.18              | 0.01             |
| 62.50           | 0.01            | 0.158                  | 310.18              | 0.01             |
| 65.00           | 0.01            | 0.158                  | 310.17              | 0.01             |
| 67.50           | 0.01            | 0.157                  | 310.17              | 0.01             |
| 70.00           | 0.01            | 0.157                  | 310.17              | 0.01             |
| 72.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 75.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 77.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 80.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 82.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 85.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 87.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 90.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 92.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 95.00           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 97.50           | 0.00            | 0.157                  | 310.17              | 0.00             |
| 100.00          | 0.00            | 0.157                  | 310.17              | 0.00             |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |



**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

**Summary for Pond 3P: Proposed Stormwater Pond**

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.31' @ 12.20 hrs

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 4.43" for 100-yr event  
 Inflow = 10.26 cfs @ 12.00 hrs, Volume= 0.581 af  
 Outflow = 9.20 cfs @ 12.06 hrs, Volume= 0.581 af, Atten= 10%, Lag= 3.1 min  
 Primary = 4.14 cfs @ 12.06 hrs, Volume= 0.512 af  
 Routed to Reach 6R : 12" Culvert Pond Discharge  
 Secondary = 5.07 cfs @ 12.06 hrs, Volume= 0.069 af  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 309.83' Surf.Area= 1,843 sf Storage= 1,307 cf  
 Peak Elev= 311.95' @ 12.06 hrs Surf.Area= 8,417 sf Storage= 8,256 cf (6,949 cf above start)

Plug-Flow detention time= 310.0 min calculated for 0.551 af (95% of inflow)  
 Center-of-Mass det. time= 258.8 min ( 1,064.2 - 805.5 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 311.25' | 8,217 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 308.00' | 3,905 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 307.25' | 1,412 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 13,534 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 311.25           | 3,844             | 283.0         | 0                      | 0                      | 3,844            |
| 312.00           | 4,629             | 305.0         | 3,173                  | 3,173                  | 4,897            |
| 312.95           | 6,020             | 367.0         | 5,044                  | 8,217                  | 8,228            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 308.00           | 58                | 51.0          | 0                      | 0                      | 58               |
| 309.00           | 305               | 90.0          | 165                    | 165                    | 501              |
| 310.00           | 1,751             | 173.0         | 929                    | 1,094                  | 2,243            |
| 311.00           | 2,543             | 203.0         | 2,135                  | 3,229                  | 3,160            |
| 311.25           | 2,867             | 219.0         | 676                    | 3,905                  | 3,700            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 307.25           | 22                | 18.0          | 0                      | 0                      | 22               |
| 308.00           | 103               | 36.0          | 43                     | 43                     | 102              |
| 309.00           | 241               | 56.0          | 167                    | 210                    | 255              |
| 310.00           | 465               | 78.0          | 347                    | 557                    | 499              |
| 311.00           | 814               | 105.0         | 631                    | 1,189                  | 903              |
| 311.25           | 976               | 119.0         | 223                    | 1,412                  | 1,154            |

**1096 Proposed Stormwater Conditions Final D Soils Fa Type II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

Printed 12/13/2024

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| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 311.68' | <b>15.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65<br>2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |
| #2     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #3     | Primary   | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #4     | Primary   | 309.83' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

**Primary OutFlow** Max=4.12 cfs @ 12.06 hrs HW=311.94' TW=310.83' (Dynamic Tailwater)

↳ **2=Orifice/Grate** (Orifice Controls 2.05 cfs @ 3.75 fps)

↳ **3=Orifice/Grate** (Orifice Controls 2.05 cfs @ 3.75 fps)

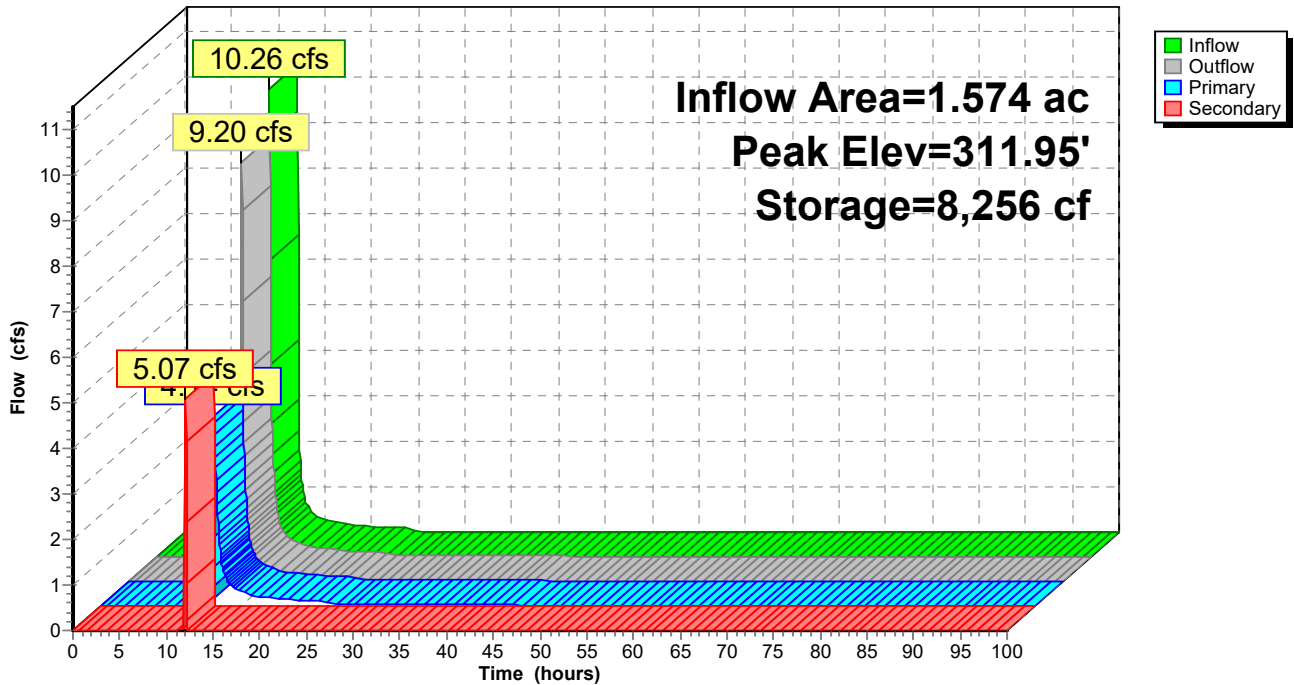
↳ **4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.08 fps)

**Secondary OutFlow** Max=4.91 cfs @ 12.06 hrs HW=311.94' TW=310.50' (Dynamic Tailwater)

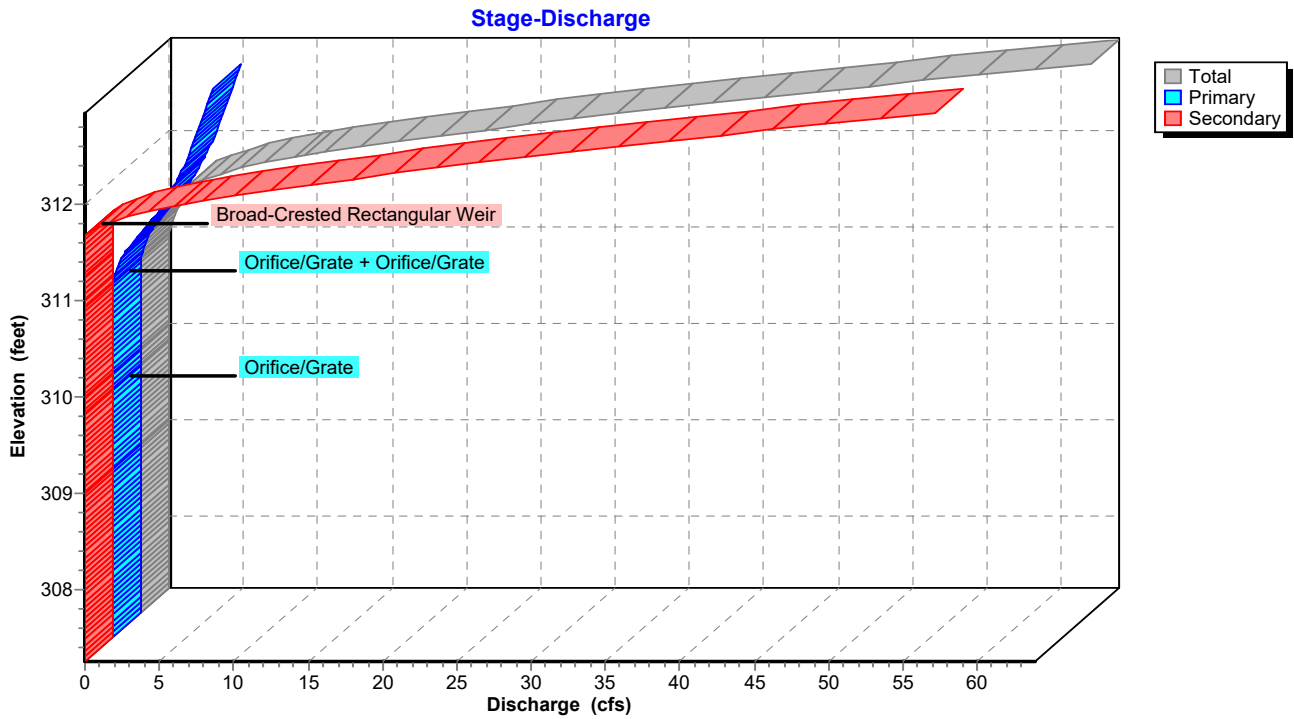
↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 4.91 cfs @ 1.24 fps)

**Pond 3P: Proposed Stormwater Pond**

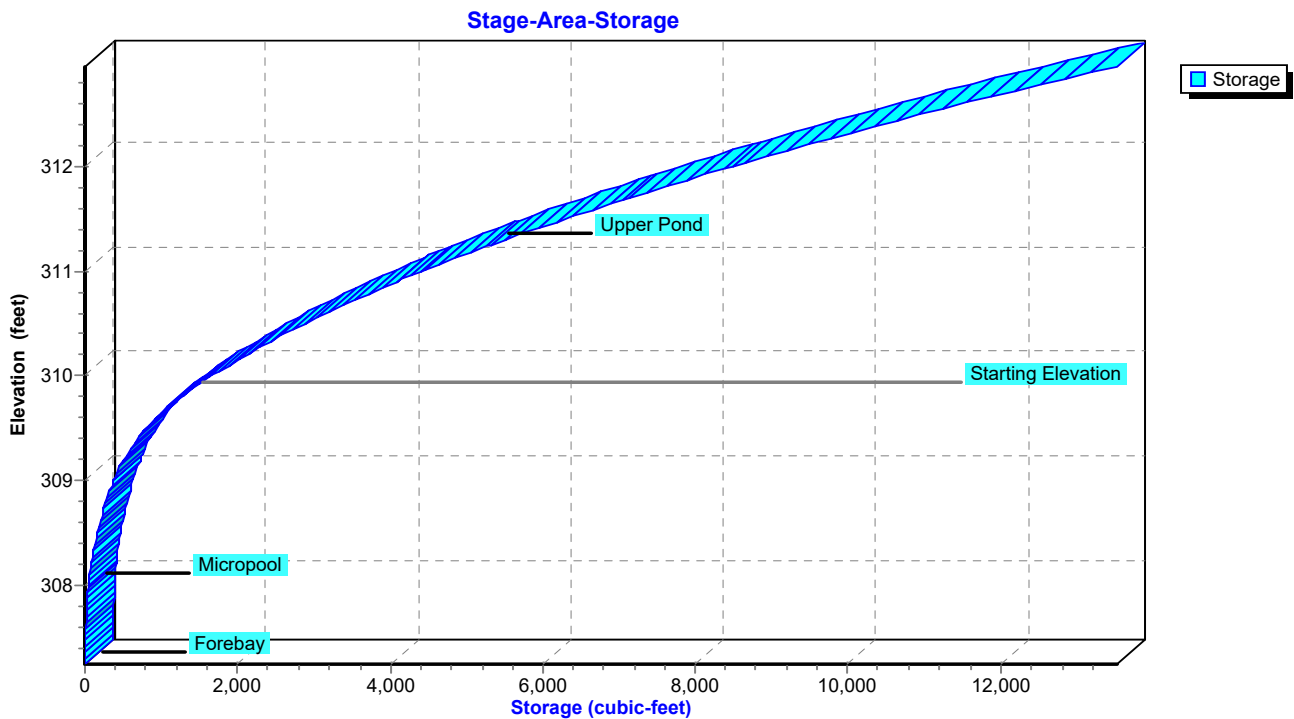
Hydrograph



### Pond 3P: Proposed Stormwater Pond



### Pond 3P: Proposed Stormwater Pond



**Hydrograph for Pond 3P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 2.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.01         | 1,317                | 309.84           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.05         | 1,498                | 309.93           | 0.01          | 0.01          | 0.00            |
| 10.00        | <b>0.17</b>  | <b>2,277</b>         | <b>310.27</b>    | <b>0.02</b>   | <b>0.02</b>   | <b>0.00</b>     |
| 12.50        | <b>1.15</b>  | <b>6,217</b>         | <b>311.48</b>    | <b>2.00</b>   | <b>2.00</b>   | <b>0.00</b>     |
| 15.00        | 0.29         | 4,807                | 311.11           | 0.31          | 0.31          | 0.00            |
| 17.50        | 0.18         | 4,640                | 311.07           | 0.19          | 0.19          | 0.00            |
| 20.00        | 0.13         | 4,546                | 311.04           | 0.14          | 0.14          | 0.00            |
| 22.50        | 0.11         | 4,498                | 311.02           | 0.11          | 0.11          | 0.00            |
| 25.00        | 0.00         | 4,317                | 310.97           | 0.05          | 0.05          | 0.00            |
| 27.50        | 0.00         | 4,057                | 310.89           | 0.03          | 0.03          | 0.00            |
| 30.00        | 0.00         | 3,826                | 310.82           | 0.03          | 0.03          | 0.00            |
| 32.50        | 0.00         | 3,603                | 310.75           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,389                | 310.67           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 3,184                | 310.60           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,989                | 310.53           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,803                | 310.47           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,628                | 310.40           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,463                | 310.34           | 0.02          | 0.02          | 0.00            |
| 50.00        | 0.00         | 2,308                | 310.28           | 0.02          | 0.02          | 0.00            |
| 52.50        | 0.00         | 2,164                | 310.22           | 0.02          | 0.02          | 0.00            |
| 55.00        | 0.00         | 2,032                | 310.17           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,910                | 310.11           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,800                | 310.07           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,702                | 310.02           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,617                | 309.98           | 0.01          | 0.01          | 0.00            |
| 67.50        | 0.00         | 1,544                | 309.95           | 0.01          | 0.01          | 0.00            |
| 70.00        | 0.00         | 1,484                | 309.92           | 0.01          | 0.01          | 0.00            |
| 72.50        | 0.00         | 1,439                | 309.90           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,407                | 309.88           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,386                | 309.87           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,372                | 309.86           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,361                | 309.86           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,354                | 309.85           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,348                | 309.85           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,343                | 309.85           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,339                | 309.85           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,336                | 309.85           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,334                | 309.84           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,332                | 309.84           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 307.25              | 0.00               | 0.00             | 0.00               | 312.55              | 38.45              | 5.83             | 32.62              |
| 307.35              | 0.00               | 0.00             | 0.00               | 312.65              | 44.47              | 6.06             | 38.40              |
| 307.45              | 0.00               | 0.00             | 0.00               | 312.75              | 50.72              | 6.29             | 44.44              |
| 307.55              | 0.00               | 0.00             | 0.00               | 312.85              | 57.22              | 6.51             | 50.71              |
| 307.65              | 0.00               | 0.00             | 0.00               | 312.95              | <b>63.89</b>       | <b>6.72</b>      | <b>57.17</b>       |
| 307.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.95              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.05              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.15              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.25              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.35              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.45              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.55              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.65              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.75              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.85              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 310.95              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 311.05              | 0.16               | 0.16             | 0.00               |                     |                    |                  |                    |
| 311.15              | 0.43               | 0.43             | 0.00               |                     |                    |                  |                    |
| 311.25              | 0.82               | 0.82             | 0.00               |                     |                    |                  |                    |
| 311.35              | 1.30               | 1.30             | 0.00               |                     |                    |                  |                    |
| 311.45              | 1.85               | 1.85             | 0.00               |                     |                    |                  |                    |
| 311.55              | 2.42               | 2.42             | 0.00               |                     |                    |                  |                    |
| 311.65              | 2.98               | 2.98             | 0.00               |                     |                    |                  |                    |
| 311.75              | 4.08               | 3.42             | 0.66               |                     |                    |                  |                    |
| 311.85              | 6.29               | 3.80             | 2.49               |                     |                    |                  |                    |
| 311.95              | 9.24               | 4.15             | 5.09               |                     |                    |                  |                    |
| 312.05              | 12.88              | 4.47             | 8.40               |                     |                    |                  |                    |
| 312.15              | 17.23              | 4.78             | 12.45              |                     |                    |                  |                    |
| 312.25              | 22.30              | 5.06             | 17.24              |                     |                    |                  |                    |
| 312.35              | 27.48              | 5.33             | 22.15              |                     |                    |                  |                    |
| 312.45              | 32.78              | 5.58             | 27.19              |                     |                    |                  |                    |

**Stage-Area-Storage for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
| 307.25              | 0                       | 309.90              | 1,441                   | 312.55              | 11,248                  |
| 307.30              | 1                       | 309.95              | 1,544                   | 312.60              | 11,521                  |
| 307.35              | 3                       | 310.00              | 1,652                   | 312.65              | 11,797                  |
| 307.40              | 4                       | 310.05              | 1,764                   | 312.70              | 12,077                  |
| 307.45              | 6                       | 310.10              | 1,878                   | 312.75              | 12,361                  |
| 307.50              | 8                       | 310.15              | 1,996                   | 312.80              | 12,648                  |
| 307.55              | 10                      | 310.20              | 2,115                   | 312.85              | 12,939                  |
| 307.60              | 13                      | 310.25              | 2,238                   | 312.90              | 13,235                  |
| 307.65              | 15                      | 310.30              | 2,363                   | 312.95              | <b>13,534</b>           |
| 307.70              | 18                      | 310.35              | 2,491                   |                     |                         |
| 307.75              | 22                      | 310.40              | 2,622                   |                     |                         |
| 307.80              | 25                      | 310.45              | 2,756                   |                     |                         |
| 307.85              | 29                      | 310.50              | 2,892                   |                     |                         |
| 307.90              | 34                      | 310.55              | 3,031                   |                     |                         |
| 307.95              | 38                      | 310.60              | 3,173                   |                     |                         |
| 308.00              | 43                      | 310.65              | 3,318                   |                     |                         |
| 308.05              | 52                      | 310.70              | 3,466                   |                     |                         |
| 308.10              | 61                      | 310.75              | 3,617                   |                     |                         |
| 308.15              | 70                      | 310.80              | 3,771                   |                     |                         |
| 308.20              | 81                      | 310.85              | 3,928                   |                     |                         |
| 308.25              | 92                      | 310.90              | 4,088                   |                     |                         |
| 308.30              | 104                     | 310.95              | 4,251                   |                     |                         |
| 308.35              | 117                     | 311.00              | 4,418                   |                     |                         |
| 308.40              | 131                     | 311.05              | 4,588                   |                     |                         |
| 308.45              | 146                     | 311.10              | 4,763                   |                     |                         |
| 308.50              | 161                     | 311.15              | 4,943                   |                     |                         |
| 308.55              | 178                     | 311.20              | 5,127                   |                     |                         |
| 308.60              | 195                     | 311.25              | 5,317                   |                     |                         |
| 308.65              | 214                     | 311.30              | 5,510                   |                     |                         |
| 308.70              | 234                     | 311.35              | 5,706                   |                     |                         |
| 308.75              | 254                     | 311.40              | 5,905                   |                     |                         |
| 308.80              | 276                     | 311.45              | 6,106                   |                     |                         |
| 308.85              | 299                     | 311.50              | 6,309                   |                     |                         |
| 308.90              | 324                     | 311.55              | 6,516                   |                     |                         |
| 308.95              | 349                     | 311.60              | 6,724                   |                     |                         |
| 309.00              | 376                     | 311.65              | 6,936                   |                     |                         |
| 309.05              | 404                     | 311.70              | 7,150                   |                     |                         |
| 309.10              | 436                     | 311.75              | 7,366                   |                     |                         |
| 309.15              | 470                     | 311.80              | 7,586                   |                     |                         |
| 309.20              | 507                     | 311.85              | 7,808                   |                     |                         |
| 309.25              | 548                     | 311.90              | 8,032                   |                     |                         |
| 309.30              | 592                     | 311.95              | 8,260                   |                     |                         |
| 309.35              | 639                     | 312.00              | 8,490                   |                     |                         |
| 309.40              | 691                     | 312.05              | 8,723                   |                     |                         |
| 309.45              | 746                     | 312.10              | 8,960                   |                     |                         |
| 309.50              | 805                     | 312.15              | 9,200                   |                     |                         |
| 309.55              | 868                     | 312.20              | 9,443                   |                     |                         |
| 309.60              | 936                     | 312.25              | 9,690                   |                     |                         |
| 309.65              | 1,008                   | 312.30              | 9,941                   |                     |                         |
| 309.70              | 1,085                   | 312.35              | 10,195                  |                     |                         |
| 309.75              | 1,166                   | 312.40              | 10,453                  |                     |                         |
| 309.80              | 1,253                   | 312.45              | 10,714                  |                     |                         |
| 309.85              | 1,344                   | 312.50              | 10,979                  |                     |                         |

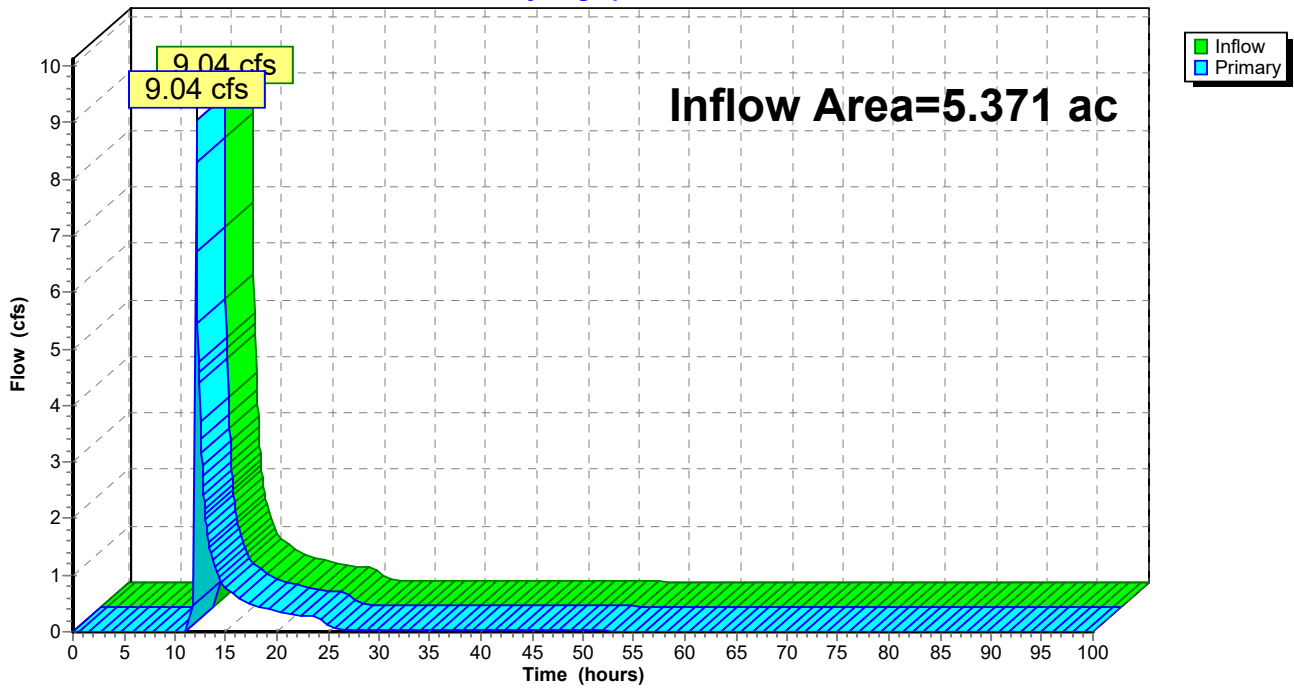
### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth = 2.06" for 100-yr event  
Inflow = 9.04 cfs @ 12.12 hrs, Volume= 0.922 af  
Primary = 9.04 cfs @ 12.12 hrs, Volume= 0.922 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1

Hydrograph





**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.02         | 0.00             | 0.02          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 65.00        | 0.01         | 0.00             | 0.01          |
| 13.00        | <b>1.98</b>  | 0.00             | <b>1.98</b>   | 66.00        | 0.01         | 0.00             | 0.01          |
| 14.00        | 1.07         | 0.00             | 1.07          | 67.00        | 0.01         | 0.00             | 0.01          |
| 15.00        | 0.77         | 0.00             | 0.77          | 68.00        | 0.01         | 0.00             | 0.01          |
| 16.00        | 0.62         | 0.00             | 0.62          | 69.00        | 0.01         | 0.00             | 0.01          |
| 17.00        | 0.52         | 0.00             | 0.52          | 70.00        | 0.01         | 0.00             | 0.01          |
| 18.00        | 0.46         | 0.00             | 0.46          | 71.00        | 0.01         | 0.00             | 0.01          |
| 19.00        | 0.40         | 0.00             | 0.40          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.35         | 0.00             | 0.35          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.31         | 0.00             | 0.31          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.30         | 0.00             | 0.30          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.29         | 0.00             | 0.29          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.28         | 0.00             | 0.28          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.10         | 0.00             | 0.10          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.04         | 0.00             | 0.04          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.03         | 0.00             | 0.03          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.03         | 0.00             | 0.03          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.03         | 0.00             | 0.03          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.03         | 0.00             | 0.03          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.03         | 0.00             | 0.03          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.02         | 0.00             | 0.02          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.02         | 0.00             | 0.02          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.02         | 0.00             | 0.02          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 49.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 50.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 51.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |
| 52.00        | 0.02         | 0.00             | 0.02          |              |              |                  |               |

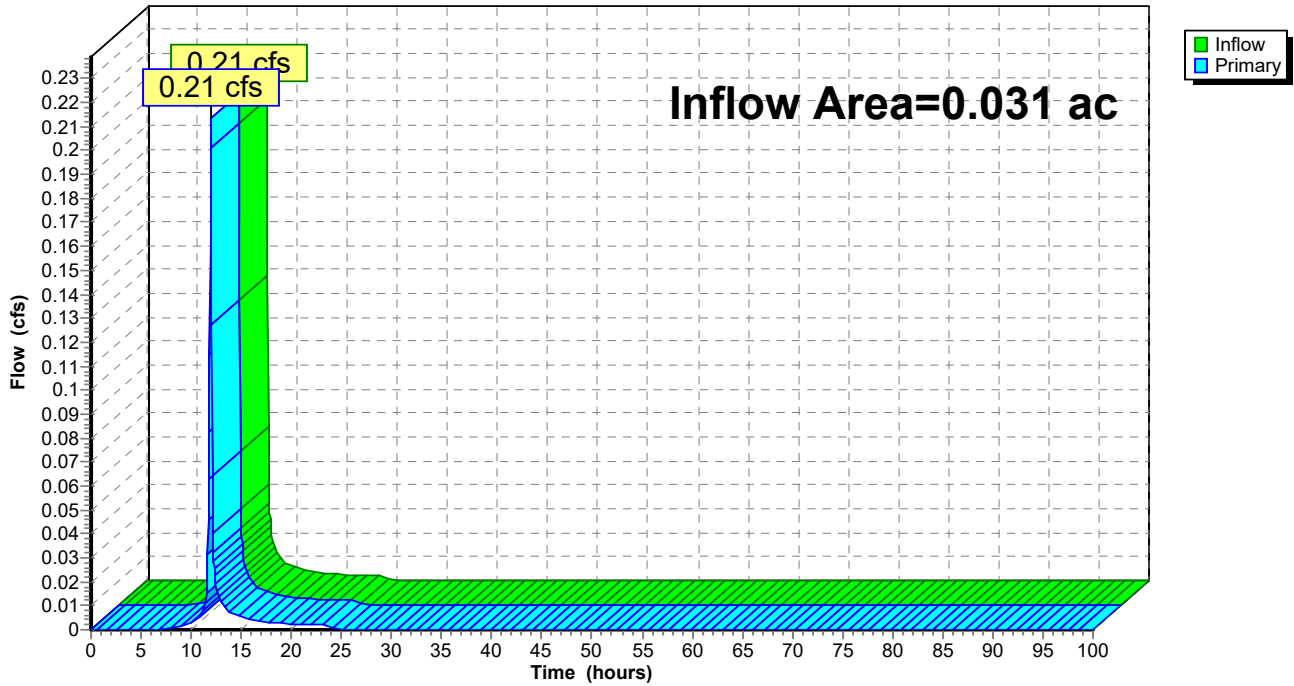
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.031 ac, 3.23% Impervious, Inflow Depth = 4.10" for 100-yr event  
Inflow = 0.21 cfs @ 11.97 hrs, Volume= 0.011 af  
Primary = 0.21 cfs @ 11.97 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | <b>0.01</b>  | 0.00             | <b>0.01</b>   | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.20</b>  | 0.00             | <b>0.20</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.01         | 0.00             | 0.01          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.01         | 0.00             | 0.01          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.01         | 0.00             | 0.01          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

Printed 12/13/2024

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|   |  |
|---|--|
| <b>Subcatchment 1S: Subcat 1</b>            | Runoff Area=3.182 ac 9.18% Impervious Runoff Depth=0.00"<br>Flow Length=499' Tc=10.1 min CN=54 Runoff=0.00 cfs 0.000 af                                      |
| <b>Subcatchment 2aS: Subcat 2a</b>          | Runoff Area=0.830 ac 18.55% Impervious Runoff Depth=0.20"<br>Flow Length=81' Tc=6.7 min CN=82 Runoff=0.24 cfs 0.014 af                                       |
| <b>Subcatchment 2bS: Subcat 2a</b>          | Runoff Area=0.190 ac 0.00% Impervious Runoff Depth=0.12"<br>Flow Length=55' Slope=0.0170 '/' Tc=6.0 min CN=78 Runoff=0.02 cfs 0.002 af                       |
| <b>Subcatchment 2cS: Subcat 2c</b>          | Runoff Area=0.506 ac 47.43% Impervious Runoff Depth=0.38"<br>Flow Length=193' Tc=6.0 min CN=88 Runoff=0.33 cfs 0.016 af                                      |
| <b>Subcatchment 2dS: Subcat 2d</b>          | Runoff Area=0.425 ac 28.00% Impervious Runoff Depth=0.20"<br>Flow Length=156' Tc=7.5 min CN=82 Runoff=0.12 cfs 0.007 af                                      |
| <b>Subcatchment 2eS: Subcat 2e</b>          | Runoff Area=0.238 ac 26.47% Impervious Runoff Depth=0.22"<br>Flow Length=120' Tc=7.9 min CN=83 Runoff=0.07 cfs 0.004 af                                      |
| <b>Subcatchment 3S: Subcat 3</b>            | Runoff Area=0.031 ac 3.23% Impervious Runoff Depth=0.17"<br>Flow Length=13' Slope=0.0779 '/' Tc=6.0 min CN=81 Runoff=0.01 cfs 0.000 af                       |
| <b>Reach 1R: Existing Swale</b>             | Avg. Flow Depth=0.01' Max Vel=0.44 fps Inflow=0.02 cfs 0.002 af<br>n=0.030 L=244.0' S=0.0205 '/' Capacity=25.24 cfs Outflow=0.01 cfs 0.002 af                |
| <b>Reach 2R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.10' Max Vel=0.47 fps Inflow=0.24 cfs 0.014 af<br>n=0.080 L=390.0' S=0.0154 '/' Capacity=8.93 cfs Outflow=0.11 cfs 0.014 af                 |
| <b>Reach 3R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.23' Max Vel=0.51 fps Inflow=0.36 cfs 0.020 af<br>n=0.100 L=104.0' S=0.0116 '/' Capacity=8.50 cfs Outflow=0.32 cfs 0.020 af                 |
| <b>Reach 4R: Proposed 10" Culvert</b>       | Avg. Flow Depth=0.09' Max Vel=2.11 fps Inflow=0.06 cfs 0.004 af<br>10.0" Round Pipe n=0.010 L=33.0' S=0.0100 '/' Capacity=2.85 cfs Outflow=0.06 cfs 0.004 af |
| <b>Reach 5R: Proposed RRv Swale</b>         | Avg. Flow Depth=0.06' Max Vel=0.48 fps Inflow=0.07 cfs 0.004 af<br>n=0.080 L=136.0' S=0.0328 '/' Capacity=6.51 cfs Outflow=0.06 cfs 0.004 af                 |
| <b>Reach 6R: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=0.05' Max Vel=1.11 fps Inflow=0.02 cfs 0.033 af<br>12.0" Round Pipe n=0.012 L=22.6' S=0.0080 '/' Capacity=3.44 cfs Outflow=0.02 cfs 0.033 af |
| <b>Pond 1ST: Existing Sediment Trap</b>     | Peak Elev=315.50' Storage=0.193 af Inflow=0.00 cfs 0.000 af<br>Outflow=0.00 cfs 0.000 af   |
| <b>Pond 2ST: Existing Sediment Trap</b>     | Peak Elev=308.63' Storage=0.053 af Inflow=0.13 cfs 0.042 af<br>Outflow=0.00 cfs 0.000 af   |
| <b>Pond 3P: Proposed Stormwater Pond</b>    | Peak Elev=310.22' Storage=2,170 cf Inflow=0.42 cfs 0.034 af<br>Primary=0.02 cfs 0.033 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af               |

**Link AP1: Analysis Point 1**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP2: Analysis Point 2**

Inflow=0.01 cfs 0.000 af  
Primary=0.01 cfs 0.000 af

**Total Runoff Area = 5.402 ac   Runoff Volume = 0.043 af   Average Runoff Depth = 0.10"**  
**83.91% Pervious = 4.533 ac   16.09% Impervious = 0.869 ac**

**Summary for Subcatchment 1S: Subcat 1**

[45] Hint: Runoff=Zero

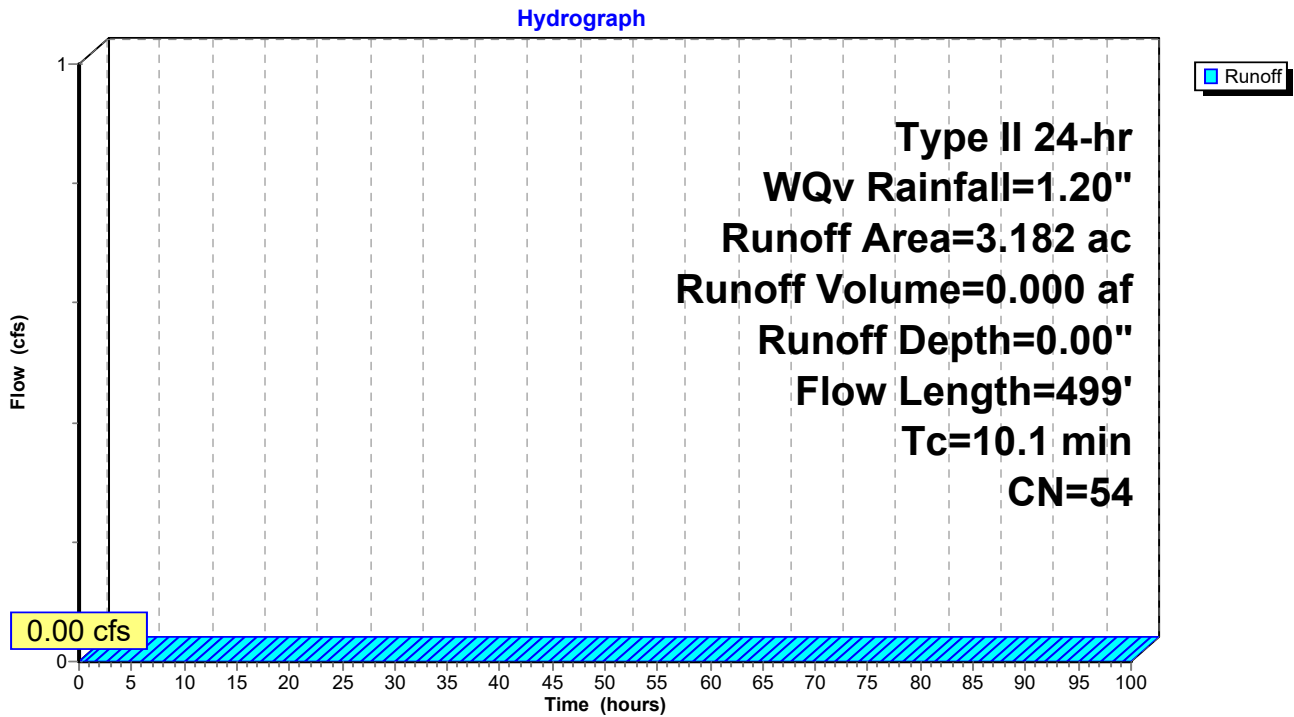
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"  
 Routed to Pond 1ST : Existing Sediment Trap

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.022     | 98 | Roofs, HSG A                        |
| 0.005     | 98 | Paved parking, HSG A                |
| 0.127     | 98 | Paved roads w/curbs & sewers, HSG A |
| 1.253     | 30 | Woods, Good, HSG A                  |
| 0.546     | 39 | >75% Grass cover, Good, HSG A       |
| 1.091     | 78 | Meadow, non-grazed, HSG D           |
| * 0.138   | 98 | Water Surface, HSG D                |
| 3.182     | 54 | Weighted Average                    |
| 2.890     |    | 90.82% Pervious Area                |
| 0.292     |    | 9.18% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.1      | 63            | 0.0530        | 0.21              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.2      | 84            | 0.0260        | 1.13              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.9      | 230           | 0.0690        | 1.31              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.3      | 69            | 0.0600        | 3.94              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.6      | 53            | 0.0520        | 1.60              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 10.1     | 499           | Total         |                   |                |   |

Subcatchment 1S: Subcat 1



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

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**Hydrograph for Subcatchment 1S: Subcat 1**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | <b>0.00</b>        | <b>0.00</b>     | 53.00           | 1.20                | 0.00               | 0.00            |
| 1.00            | 0.01                | 0.00               | 0.00            | 54.00           | 1.20                | 0.00               | 0.00            |
| 2.00            | 0.03                | 0.00               | 0.00            | 55.00           | 1.20                | 0.00               | 0.00            |
| 3.00            | 0.04                | 0.00               | 0.00            | 56.00           | 1.20                | 0.00               | 0.00            |
| 4.00            | 0.06                | 0.00               | 0.00            | 57.00           | 1.20                | 0.00               | 0.00            |
| 5.00            | 0.08                | 0.00               | 0.00            | 58.00           | 1.20                | 0.00               | 0.00            |
| 6.00            | 0.10                | 0.00               | 0.00            | 59.00           | 1.20                | 0.00               | 0.00            |
| 7.00            | 0.12                | 0.00               | 0.00            | 60.00           | 1.20                | 0.00               | 0.00            |
| 8.00            | 0.14                | 0.00               | 0.00            | 61.00           | 1.20                | 0.00               | 0.00            |
| 9.00            | 0.18                | 0.00               | 0.00            | 62.00           | 1.20                | 0.00               | 0.00            |
| 10.00           | 0.22                | 0.00               | 0.00            | 63.00           | 1.20                | 0.00               | 0.00            |
| 11.00           | 0.28                | 0.00               | 0.00            | 64.00           | 1.20                | 0.00               | 0.00            |
| 12.00           | 0.80                | 0.00               | 0.00            | 65.00           | 1.20                | 0.00               | 0.00            |
| 13.00           | 0.93                | 0.00               | 0.00            | 66.00           | 1.20                | 0.00               | 0.00            |
| 14.00           | 0.98                | 0.00               | 0.00            | 67.00           | 1.20                | 0.00               | 0.00            |
| 15.00           | 1.02                | 0.00               | 0.00            | 68.00           | 1.20                | 0.00               | 0.00            |
| 16.00           | 1.06                | 0.00               | 0.00            | 69.00           | 1.20                | 0.00               | 0.00            |
| 17.00           | 1.08                | 0.00               | 0.00            | 70.00           | 1.20                | 0.00               | 0.00            |
| 18.00           | 1.11                | 0.00               | 0.00            | 71.00           | 1.20                | 0.00               | 0.00            |
| 19.00           | 1.13                | 0.00               | 0.00            | 72.00           | 1.20                | 0.00               | 0.00            |
| 20.00           | 1.14                | 0.00               | 0.00            | 73.00           | 1.20                | 0.00               | 0.00            |
| 21.00           | 1.16                | 0.00               | 0.00            | 74.00           | 1.20                | 0.00               | 0.00            |
| 22.00           | 1.17                | 0.00               | 0.00            | 75.00           | 1.20                | 0.00               | 0.00            |
| 23.00           | 1.19                | 0.00               | 0.00            | 76.00           | 1.20                | 0.00               | 0.00            |
| 24.00           | <b>1.20</b>         | 0.00               | 0.00            | 77.00           | 1.20                | 0.00               | 0.00            |
| 25.00           | 1.20                | 0.00               | 0.00            | 78.00           | 1.20                | 0.00               | 0.00            |
| 26.00           | 1.20                | 0.00               | 0.00            | 79.00           | 1.20                | 0.00               | 0.00            |
| 27.00           | 1.20                | 0.00               | 0.00            | 80.00           | 1.20                | 0.00               | 0.00            |
| 28.00           | 1.20                | 0.00               | 0.00            | 81.00           | 1.20                | 0.00               | 0.00            |
| 29.00           | 1.20                | 0.00               | 0.00            | 82.00           | 1.20                | 0.00               | 0.00            |
| 30.00           | 1.20                | 0.00               | 0.00            | 83.00           | 1.20                | 0.00               | 0.00            |
| 31.00           | 1.20                | 0.00               | 0.00            | 84.00           | 1.20                | 0.00               | 0.00            |
| 32.00           | 1.20                | 0.00               | 0.00            | 85.00           | 1.20                | 0.00               | 0.00            |
| 33.00           | 1.20                | 0.00               | 0.00            | 86.00           | 1.20                | 0.00               | 0.00            |
| 34.00           | 1.20                | 0.00               | 0.00            | 87.00           | 1.20                | 0.00               | 0.00            |
| 35.00           | 1.20                | 0.00               | 0.00            | 88.00           | 1.20                | 0.00               | 0.00            |
| 36.00           | 1.20                | 0.00               | 0.00            | 89.00           | 1.20                | 0.00               | 0.00            |
| 37.00           | 1.20                | 0.00               | 0.00            | 90.00           | 1.20                | 0.00               | 0.00            |
| 38.00           | 1.20                | 0.00               | 0.00            | 91.00           | 1.20                | 0.00               | 0.00            |
| 39.00           | 1.20                | 0.00               | 0.00            | 92.00           | 1.20                | 0.00               | 0.00            |
| 40.00           | 1.20                | 0.00               | 0.00            | 93.00           | 1.20                | 0.00               | 0.00            |
| 41.00           | 1.20                | 0.00               | 0.00            | 94.00           | 1.20                | 0.00               | 0.00            |
| 42.00           | 1.20                | 0.00               | 0.00            | 95.00           | 1.20                | 0.00               | 0.00            |
| 43.00           | 1.20                | 0.00               | 0.00            | 96.00           | 1.20                | 0.00               | 0.00            |
| 44.00           | 1.20                | 0.00               | 0.00            | 97.00           | 1.20                | 0.00               | 0.00            |
| 45.00           | 1.20                | 0.00               | 0.00            | 98.00           | 1.20                | 0.00               | 0.00            |
| 46.00           | 1.20                | 0.00               | 0.00            | 99.00           | 1.20                | 0.00               | 0.00            |
| 47.00           | 1.20                | 0.00               | 0.00            | 100.00          | 1.20                | 0.00               | 0.00            |
| 48.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 49.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 50.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 51.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 52.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |



**Summary for Subcatchment 2aS: Subcat 2a**

Runoff = 0.24 cfs @ 12.00 hrs, Volume= 0.014 af, Depth= 0.20"  
 Routed to Reach 2R : Proposed RRv Swale

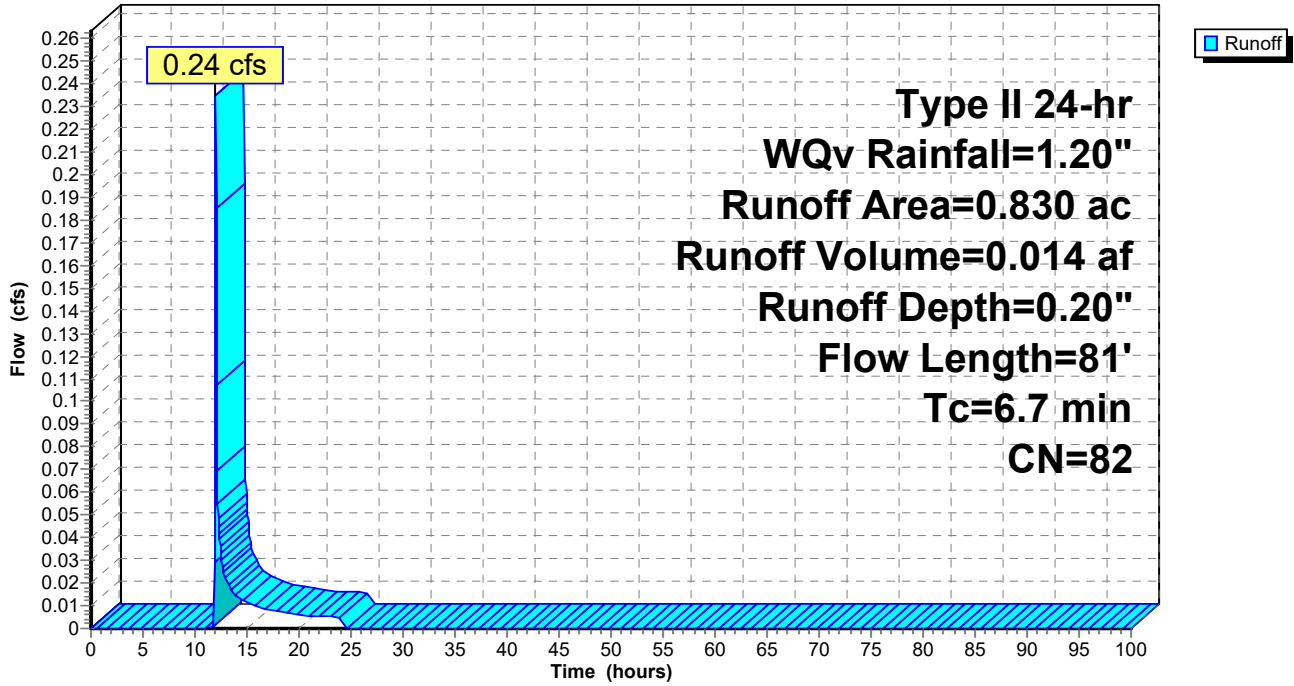
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.480     | 78 | Meadow, non-grazed, HSG D     |
| 0.002     | 71 | Meadow, non-grazed, HSG C     |
| * 0.002   | 98 | Paved parking, HSG D          |
| * 0.152   | 98 | Paved parking, HSG D          |
| 0.194     | 80 | >75% Grass cover, Good, HSG D |
| 0.830     | 82 | Weighted Average              |
| 0.676     |    | 81.45% Pervious Area          |
| 0.154     |    | 18.55% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 0.2      | 14            | 0.0460        | 1.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59" |
| 1.9      | 20            | 0.0460        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 3.3      | 32            | 0.0310        | 0.16              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 1.3      | 15            | 0.0670        | 0.19              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"           |
| 6.7      | 81            | Total         |                   |                |   |

Subcatchment 2aS: Subcat 2a

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2aS: Subcat 2a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 1.20                | 0.20               | 0.00            |
| 1.00            | 0.01                | 0.00               | 0.00            | 54.00           | 1.20                | 0.20               | 0.00            |
| 2.00            | 0.03                | 0.00               | 0.00            | 55.00           | 1.20                | 0.20               | 0.00            |
| 3.00            | 0.04                | 0.00               | 0.00            | 56.00           | 1.20                | 0.20               | 0.00            |
| 4.00            | 0.06                | 0.00               | 0.00            | 57.00           | 1.20                | 0.20               | 0.00            |
| 5.00            | 0.08                | 0.00               | 0.00            | 58.00           | 1.20                | 0.20               | 0.00            |
| 6.00            | 0.10                | 0.00               | 0.00            | 59.00           | 1.20                | 0.20               | 0.00            |
| 7.00            | 0.12                | 0.00               | 0.00            | 60.00           | 1.20                | 0.20               | 0.00            |
| 8.00            | 0.14                | 0.00               | 0.00            | 61.00           | 1.20                | 0.20               | 0.00            |
| 9.00            | 0.18                | 0.00               | 0.00            | 62.00           | 1.20                | 0.20               | 0.00            |
| 10.00           | 0.22                | 0.00               | 0.00            | 63.00           | 1.20                | 0.20               | 0.00            |
| 11.00           | 0.28                | 0.00               | 0.00            | 64.00           | 1.20                | 0.20               | 0.00            |
| 12.00           | 0.80                | 0.05               | <b>0.23</b>     | 65.00           | 1.20                | 0.20               | 0.00            |
| 13.00           | 0.93                | 0.09               | 0.02            | 66.00           | 1.20                | 0.20               | 0.00            |
| 14.00           | 0.98                | 0.11               | 0.01            | 67.00           | 1.20                | 0.20               | 0.00            |
| 15.00           | 1.02                | 0.12               | 0.01            | 68.00           | 1.20                | 0.20               | 0.00            |
| 16.00           | 1.06                | 0.14               | 0.01            | 69.00           | 1.20                | 0.20               | 0.00            |
| 17.00           | 1.08                | 0.15               | 0.01            | 70.00           | 1.20                | 0.20               | 0.00            |
| 18.00           | 1.11                | 0.16               | 0.01            | 71.00           | 1.20                | 0.20               | 0.00            |
| 19.00           | 1.13                | 0.16               | 0.01            | 72.00           | 1.20                | 0.20               | 0.00            |
| 20.00           | 1.14                | 0.17               | 0.01            | 73.00           | 1.20                | 0.20               | 0.00            |
| 21.00           | 1.16                | 0.18               | 0.01            | 74.00           | 1.20                | 0.20               | 0.00            |
| 22.00           | 1.17                | 0.18               | 0.01            | 75.00           | 1.20                | 0.20               | 0.00            |
| 23.00           | 1.19                | 0.19               | 0.01            | 76.00           | 1.20                | 0.20               | 0.00            |
| 24.00           | <b>1.20</b>         | <b>0.20</b>        | 0.00            | 77.00           | 1.20                | 0.20               | 0.00            |
| 25.00           | 1.20                | 0.20               | 0.00            | 78.00           | 1.20                | 0.20               | 0.00            |
| 26.00           | 1.20                | 0.20               | 0.00            | 79.00           | 1.20                | 0.20               | 0.00            |
| 27.00           | 1.20                | 0.20               | 0.00            | 80.00           | 1.20                | 0.20               | 0.00            |
| 28.00           | 1.20                | 0.20               | 0.00            | 81.00           | 1.20                | 0.20               | 0.00            |
| 29.00           | 1.20                | 0.20               | 0.00            | 82.00           | 1.20                | 0.20               | 0.00            |
| 30.00           | 1.20                | 0.20               | 0.00            | 83.00           | 1.20                | 0.20               | 0.00            |
| 31.00           | 1.20                | 0.20               | 0.00            | 84.00           | 1.20                | 0.20               | 0.00            |
| 32.00           | 1.20                | 0.20               | 0.00            | 85.00           | 1.20                | 0.20               | 0.00            |
| 33.00           | 1.20                | 0.20               | 0.00            | 86.00           | 1.20                | 0.20               | 0.00            |
| 34.00           | 1.20                | 0.20               | 0.00            | 87.00           | 1.20                | 0.20               | 0.00            |
| 35.00           | 1.20                | 0.20               | 0.00            | 88.00           | 1.20                | 0.20               | 0.00            |
| 36.00           | 1.20                | 0.20               | 0.00            | 89.00           | 1.20                | 0.20               | 0.00            |
| 37.00           | 1.20                | 0.20               | 0.00            | 90.00           | 1.20                | 0.20               | 0.00            |
| 38.00           | 1.20                | 0.20               | 0.00            | 91.00           | 1.20                | 0.20               | 0.00            |
| 39.00           | 1.20                | 0.20               | 0.00            | 92.00           | 1.20                | 0.20               | 0.00            |
| 40.00           | 1.20                | 0.20               | 0.00            | 93.00           | 1.20                | 0.20               | 0.00            |
| 41.00           | 1.20                | 0.20               | 0.00            | 94.00           | 1.20                | 0.20               | 0.00            |
| 42.00           | 1.20                | 0.20               | 0.00            | 95.00           | 1.20                | 0.20               | 0.00            |
| 43.00           | 1.20                | 0.20               | 0.00            | 96.00           | 1.20                | 0.20               | 0.00            |
| 44.00           | 1.20                | 0.20               | 0.00            | 97.00           | 1.20                | 0.20               | 0.00            |
| 45.00           | 1.20                | 0.20               | 0.00            | 98.00           | 1.20                | 0.20               | 0.00            |
| 46.00           | 1.20                | 0.20               | 0.00            | 99.00           | 1.20                | 0.20               | 0.00            |
| 47.00           | 1.20                | 0.20               | 0.00            | 100.00          | 1.20                | 0.20               | 0.00            |
| 48.00           | 1.20                | 0.20               | 0.00            |                 |                     |                    |                 |
| 49.00           | 1.20                | 0.20               | 0.00            |                 |                     |                    |                 |
| 50.00           | 1.20                | 0.20               | 0.00            |                 |                     |                    |                 |
| 51.00           | 1.20                | 0.20               | 0.00            |                 |                     |                    |                 |
| 52.00           | 1.20                | 0.20               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment 2bS: Subcat 2a**

Runoff = 0.02 cfs @ 12.01 hrs, Volume= 0.002 af, Depth= 0.12"  
 Routed to Reach 1R : Existing Swale

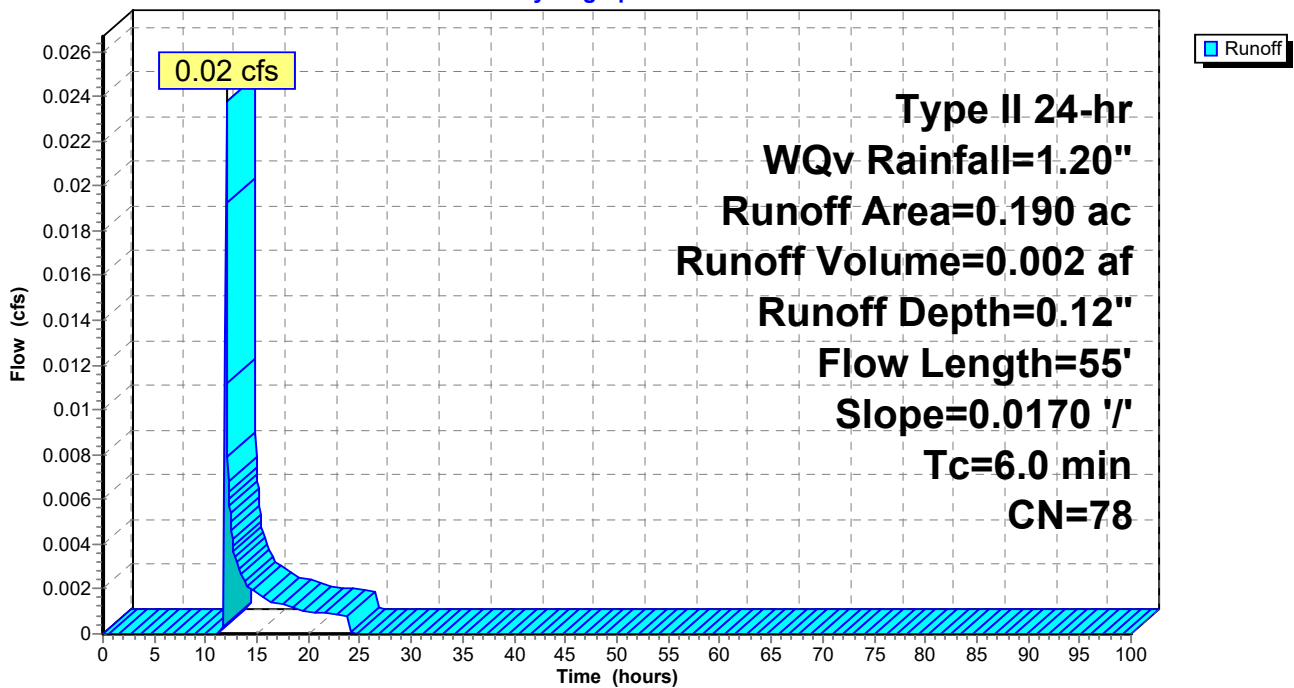
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.188     | 78 | Meadow, non-grazed, HSG D |
| 0.002     | 71 | Meadow, non-grazed, HSG C |
| 0.190     | 78 | Weighted Average          |
| 0.190     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.0      | 55            | 0.0170                                   | 0.91              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.0      | 55            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 2bS: Subcat 2a**

Hydrograph



**Hydrograph for Subcatchment 2bS: Subcat 2a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.12            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.12            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.12            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.12            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.12            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.12            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.12            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.12            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.12            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.12            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.12            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.12            | 0.00         |
| 12.00        | 0.80             | 0.02            | <b>0.02</b>  | 65.00        | 1.20             | 0.12            | 0.00         |
| 13.00        | 0.93             | 0.04            | 0.00         | 66.00        | 1.20             | 0.12            | 0.00         |
| 14.00        | 0.98             | 0.05            | 0.00         | 67.00        | 1.20             | 0.12            | 0.00         |
| 15.00        | 1.02             | 0.06            | 0.00         | 68.00        | 1.20             | 0.12            | 0.00         |
| 16.00        | 1.06             | 0.07            | 0.00         | 69.00        | 1.20             | 0.12            | 0.00         |
| 17.00        | 1.08             | 0.08            | 0.00         | 70.00        | 1.20             | 0.12            | 0.00         |
| 18.00        | 1.11             | 0.09            | 0.00         | 71.00        | 1.20             | 0.12            | 0.00         |
| 19.00        | 1.13             | 0.09            | 0.00         | 72.00        | 1.20             | 0.12            | 0.00         |
| 20.00        | 1.14             | 0.10            | 0.00         | 73.00        | 1.20             | 0.12            | 0.00         |
| 21.00        | 1.16             | 0.10            | 0.00         | 74.00        | 1.20             | 0.12            | 0.00         |
| 22.00        | 1.17             | 0.11            | 0.00         | 75.00        | 1.20             | 0.12            | 0.00         |
| 23.00        | 1.19             | 0.11            | 0.00         | 76.00        | 1.20             | 0.12            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.12</b>     | 0.00         | 77.00        | 1.20             | 0.12            | 0.00         |
| 25.00        | 1.20             | 0.12            | 0.00         | 78.00        | 1.20             | 0.12            | 0.00         |
| 26.00        | 1.20             | 0.12            | 0.00         | 79.00        | 1.20             | 0.12            | 0.00         |
| 27.00        | 1.20             | 0.12            | 0.00         | 80.00        | 1.20             | 0.12            | 0.00         |
| 28.00        | 1.20             | 0.12            | 0.00         | 81.00        | 1.20             | 0.12            | 0.00         |
| 29.00        | 1.20             | 0.12            | 0.00         | 82.00        | 1.20             | 0.12            | 0.00         |
| 30.00        | 1.20             | 0.12            | 0.00         | 83.00        | 1.20             | 0.12            | 0.00         |
| 31.00        | 1.20             | 0.12            | 0.00         | 84.00        | 1.20             | 0.12            | 0.00         |
| 32.00        | 1.20             | 0.12            | 0.00         | 85.00        | 1.20             | 0.12            | 0.00         |
| 33.00        | 1.20             | 0.12            | 0.00         | 86.00        | 1.20             | 0.12            | 0.00         |
| 34.00        | 1.20             | 0.12            | 0.00         | 87.00        | 1.20             | 0.12            | 0.00         |
| 35.00        | 1.20             | 0.12            | 0.00         | 88.00        | 1.20             | 0.12            | 0.00         |
| 36.00        | 1.20             | 0.12            | 0.00         | 89.00        | 1.20             | 0.12            | 0.00         |
| 37.00        | 1.20             | 0.12            | 0.00         | 90.00        | 1.20             | 0.12            | 0.00         |
| 38.00        | 1.20             | 0.12            | 0.00         | 91.00        | 1.20             | 0.12            | 0.00         |
| 39.00        | 1.20             | 0.12            | 0.00         | 92.00        | 1.20             | 0.12            | 0.00         |
| 40.00        | 1.20             | 0.12            | 0.00         | 93.00        | 1.20             | 0.12            | 0.00         |
| 41.00        | 1.20             | 0.12            | 0.00         | 94.00        | 1.20             | 0.12            | 0.00         |
| 42.00        | 1.20             | 0.12            | 0.00         | 95.00        | 1.20             | 0.12            | 0.00         |
| 43.00        | 1.20             | 0.12            | 0.00         | 96.00        | 1.20             | 0.12            | 0.00         |
| 44.00        | 1.20             | 0.12            | 0.00         | 97.00        | 1.20             | 0.12            | 0.00         |
| 45.00        | 1.20             | 0.12            | 0.00         | 98.00        | 1.20             | 0.12            | 0.00         |
| 46.00        | 1.20             | 0.12            | 0.00         | 99.00        | 1.20             | 0.12            | 0.00         |
| 47.00        | 1.20             | 0.12            | 0.00         | 100.00       | 1.20             | 0.12            | 0.00         |
| 48.00        | 1.20             | 0.12            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.12            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.12            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.12            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.12            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2cS: Subcat 2c**

Runoff = 0.33 cfs @ 11.98 hrs, Volume= 0.016 af, Depth= 0.38"  
 Routed to Reach 3R : Proposed RRv Swale

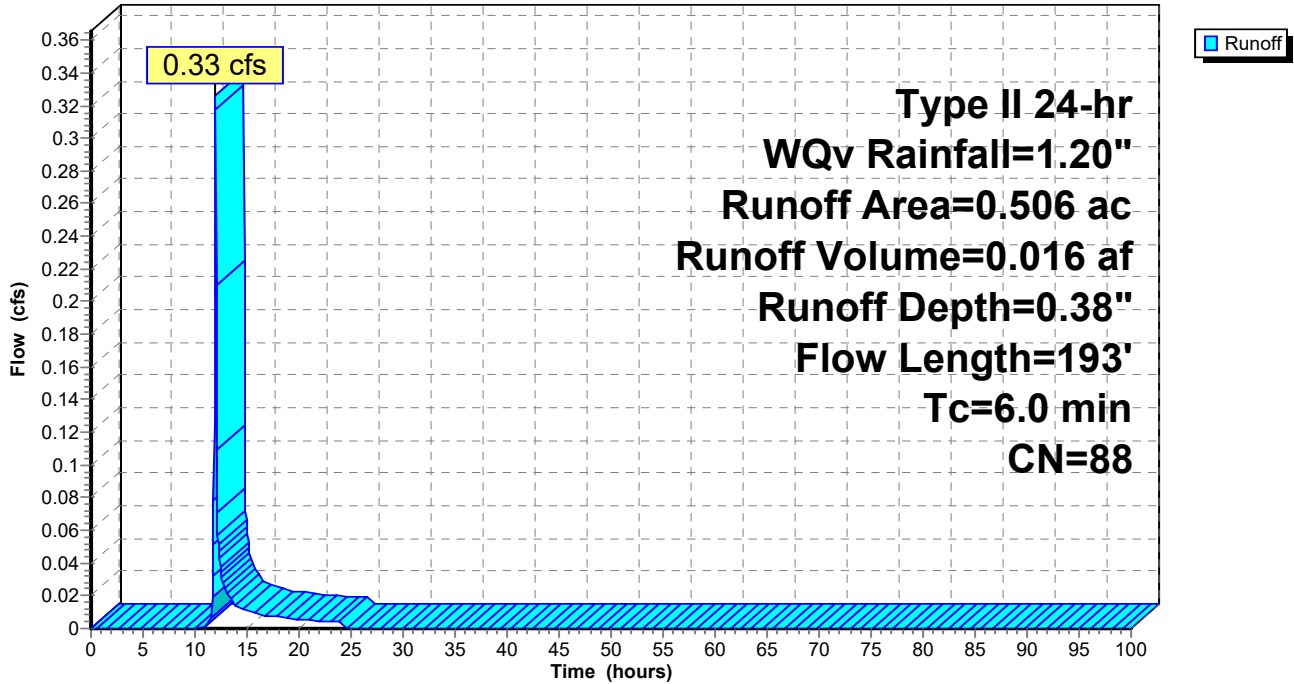
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| 0.143     | 78 | Meadow, non-grazed, HSG D     |
| 0.030     | 71 | Meadow, non-grazed, HSG C     |
| * 0.023   | 89 | Gravel surface, HSG D         |
| * 0.056   | 98 | Paved parking, HSGD           |
| * 0.023   | 98 | Roofs, HSG D                  |
| * 0.113   | 98 | Paved parking, HSG D          |
| 0.070     | 80 | >75% Grass cover, Good, HSG D |
| 0.048     | 98 | Water Surface, HSG D          |
| 0.506     | 88 | Weighted Average              |
| 0.266     |    | 52.57% Pervious Area          |
| 0.240     |    | 47.43% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 0.7      | 45            | 0.0200                                   | 1.05              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.6      | 36            | 0.0200                                   | 1.01              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 2.9      | 19            | 0.0200                                   | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.1      | 6             | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.0      | 6             | 0.0200                                   | 2.87              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.6      | 38            | 0.0200                                   | 0.99              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.5      | 43            | 0.0470                                   | 1.52              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 5.4      | 193           | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

Subcatchment 2cS: Subcat 2c

Hydrograph



**Hydrograph for Subcatchment 2cS: Subcat 2c**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.38            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.38            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.38            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.38            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.38            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.38            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.38            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.38            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.38            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.38            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.38            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.38            | 0.00         |
| 12.00        | 0.80             | 0.14            | <b>0.32</b>  | 65.00        | 1.20             | 0.38            | 0.00         |
| 13.00        | 0.93             | 0.21            | 0.02         | 66.00        | 1.20             | 0.38            | 0.00         |
| 14.00        | 0.98             | 0.24            | 0.01         | 67.00        | 1.20             | 0.38            | 0.00         |
| 15.00        | 1.02             | 0.27            | 0.01         | 68.00        | 1.20             | 0.38            | 0.00         |
| 16.00        | 1.06             | 0.29            | 0.01         | 69.00        | 1.20             | 0.38            | 0.00         |
| 17.00        | 1.08             | 0.30            | 0.01         | 70.00        | 1.20             | 0.38            | 0.00         |
| 18.00        | 1.11             | 0.32            | 0.01         | 71.00        | 1.20             | 0.38            | 0.00         |
| 19.00        | 1.13             | 0.33            | 0.01         | 72.00        | 1.20             | 0.38            | 0.00         |
| 20.00        | 1.14             | 0.34            | 0.01         | 73.00        | 1.20             | 0.38            | 0.00         |
| 21.00        | 1.16             | 0.35            | 0.00         | 74.00        | 1.20             | 0.38            | 0.00         |
| 22.00        | 1.17             | 0.36            | 0.00         | 75.00        | 1.20             | 0.38            | 0.00         |
| 23.00        | 1.19             | 0.37            | 0.00         | 76.00        | 1.20             | 0.38            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.38</b>     | 0.00         | 77.00        | 1.20             | 0.38            | 0.00         |
| 25.00        | 1.20             | 0.38            | 0.00         | 78.00        | 1.20             | 0.38            | 0.00         |
| 26.00        | 1.20             | 0.38            | 0.00         | 79.00        | 1.20             | 0.38            | 0.00         |
| 27.00        | 1.20             | 0.38            | 0.00         | 80.00        | 1.20             | 0.38            | 0.00         |
| 28.00        | 1.20             | 0.38            | 0.00         | 81.00        | 1.20             | 0.38            | 0.00         |
| 29.00        | 1.20             | 0.38            | 0.00         | 82.00        | 1.20             | 0.38            | 0.00         |
| 30.00        | 1.20             | 0.38            | 0.00         | 83.00        | 1.20             | 0.38            | 0.00         |
| 31.00        | 1.20             | 0.38            | 0.00         | 84.00        | 1.20             | 0.38            | 0.00         |
| 32.00        | 1.20             | 0.38            | 0.00         | 85.00        | 1.20             | 0.38            | 0.00         |
| 33.00        | 1.20             | 0.38            | 0.00         | 86.00        | 1.20             | 0.38            | 0.00         |
| 34.00        | 1.20             | 0.38            | 0.00         | 87.00        | 1.20             | 0.38            | 0.00         |
| 35.00        | 1.20             | 0.38            | 0.00         | 88.00        | 1.20             | 0.38            | 0.00         |
| 36.00        | 1.20             | 0.38            | 0.00         | 89.00        | 1.20             | 0.38            | 0.00         |
| 37.00        | 1.20             | 0.38            | 0.00         | 90.00        | 1.20             | 0.38            | 0.00         |
| 38.00        | 1.20             | 0.38            | 0.00         | 91.00        | 1.20             | 0.38            | 0.00         |
| 39.00        | 1.20             | 0.38            | 0.00         | 92.00        | 1.20             | 0.38            | 0.00         |
| 40.00        | 1.20             | 0.38            | 0.00         | 93.00        | 1.20             | 0.38            | 0.00         |
| 41.00        | 1.20             | 0.38            | 0.00         | 94.00        | 1.20             | 0.38            | 0.00         |
| 42.00        | 1.20             | 0.38            | 0.00         | 95.00        | 1.20             | 0.38            | 0.00         |
| 43.00        | 1.20             | 0.38            | 0.00         | 96.00        | 1.20             | 0.38            | 0.00         |
| 44.00        | 1.20             | 0.38            | 0.00         | 97.00        | 1.20             | 0.38            | 0.00         |
| 45.00        | 1.20             | 0.38            | 0.00         | 98.00        | 1.20             | 0.38            | 0.00         |
| 46.00        | 1.20             | 0.38            | 0.00         | 99.00        | 1.20             | 0.38            | 0.00         |
| 47.00        | 1.20             | 0.38            | 0.00         | 100.00       | 1.20             | 0.38            | 0.00         |
| 48.00        | 1.20             | 0.38            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.38            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.38            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.38            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.38            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment 2dS: Subcat 2d**

Runoff = 0.12 cfs @ 12.01 hrs, Volume= 0.007 af, Depth= 0.20"  
 Routed to Pond 2ST : Existing Sediment Trap

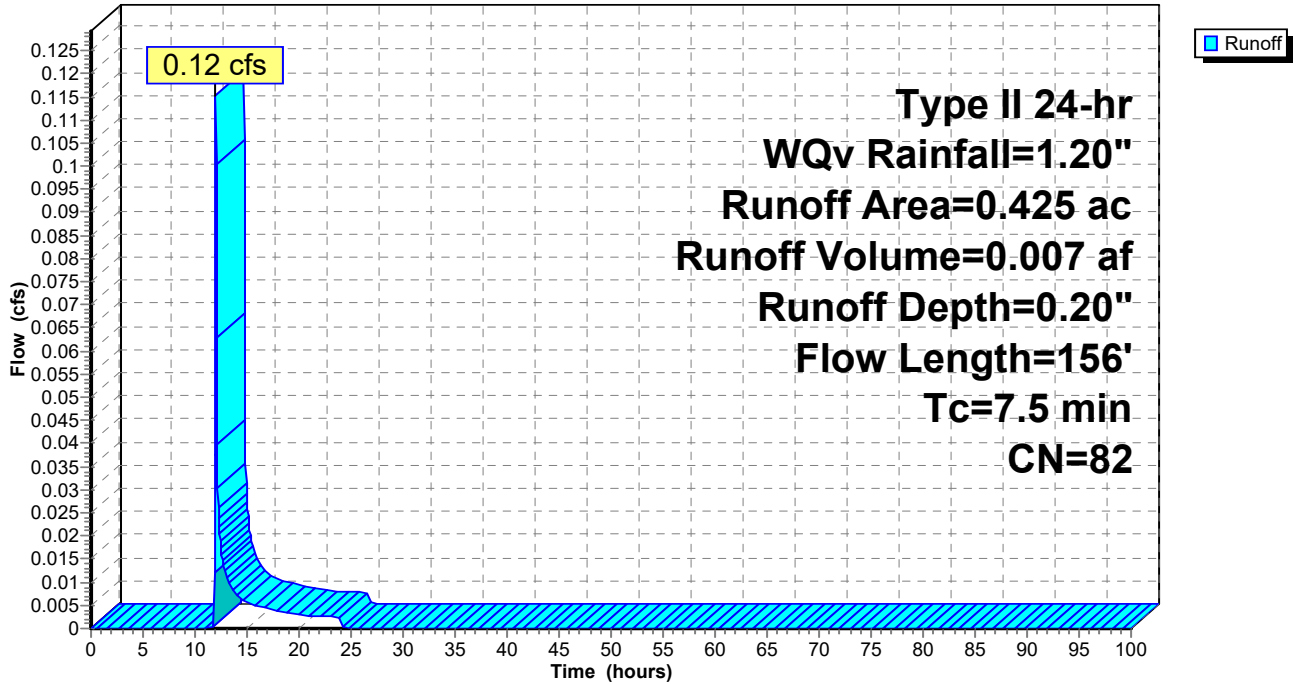
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.089     | 78 | Meadow, non-grazed, HSG D |
| 0.160     | 71 | Meadow, non-grazed, HSG C |
| * 0.013   | 98 | Water Surface, HSG D      |
| 0.106     | 98 | Water Surface, HSG C      |
| * 0.017   | 89 | Gravel surface, HSG D     |
| * 0.040   | 89 | Gravel surface, HSG C     |
| 0.425     | 82 | Weighted Average          |
| 0.306     |    | 72.00% Pervious Area      |
| 0.119     |    | 28.00% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 7.0      | 91            | 0.0380        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.1      | 8             | 0.0420        | 1.00              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.1      | 14            | 0.0420        | 3.30              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.2      | 29            | 0.0290        | 2.74              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Unpaved Kv= 16.1 fps            |
| 0.1      | 14            | 0.0680        | 1.83              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.5      | 156           | Total         |                   |                |   |

Subcatchment 2dS: Subcat 2d

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 2dS: Subcat 2d**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.20            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.20            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.20            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.20            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.20            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.20            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.20            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.20            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.20            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.20            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.20            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.20            | 0.00         |
| 12.00        | 0.80             | 0.05            | <b>0.11</b>  | 65.00        | 1.20             | 0.20            | 0.00         |
| 13.00        | 0.93             | 0.09            | 0.01         | 66.00        | 1.20             | 0.20            | 0.00         |
| 14.00        | 0.98             | 0.11            | 0.01         | 67.00        | 1.20             | 0.20            | 0.00         |
| 15.00        | 1.02             | 0.12            | 0.01         | 68.00        | 1.20             | 0.20            | 0.00         |
| 16.00        | 1.06             | 0.14            | 0.00         | 69.00        | 1.20             | 0.20            | 0.00         |
| 17.00        | 1.08             | 0.15            | 0.00         | 70.00        | 1.20             | 0.20            | 0.00         |
| 18.00        | 1.11             | 0.16            | 0.00         | 71.00        | 1.20             | 0.20            | 0.00         |
| 19.00        | 1.13             | 0.16            | 0.00         | 72.00        | 1.20             | 0.20            | 0.00         |
| 20.00        | 1.14             | 0.17            | 0.00         | 73.00        | 1.20             | 0.20            | 0.00         |
| 21.00        | 1.16             | 0.18            | 0.00         | 74.00        | 1.20             | 0.20            | 0.00         |
| 22.00        | 1.17             | 0.18            | 0.00         | 75.00        | 1.20             | 0.20            | 0.00         |
| 23.00        | 1.19             | 0.19            | 0.00         | 76.00        | 1.20             | 0.20            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.20</b>     | 0.00         | 77.00        | 1.20             | 0.20            | 0.00         |
| 25.00        | 1.20             | 0.20            | 0.00         | 78.00        | 1.20             | 0.20            | 0.00         |
| 26.00        | 1.20             | 0.20            | 0.00         | 79.00        | 1.20             | 0.20            | 0.00         |
| 27.00        | 1.20             | 0.20            | 0.00         | 80.00        | 1.20             | 0.20            | 0.00         |
| 28.00        | 1.20             | 0.20            | 0.00         | 81.00        | 1.20             | 0.20            | 0.00         |
| 29.00        | 1.20             | 0.20            | 0.00         | 82.00        | 1.20             | 0.20            | 0.00         |
| 30.00        | 1.20             | 0.20            | 0.00         | 83.00        | 1.20             | 0.20            | 0.00         |
| 31.00        | 1.20             | 0.20            | 0.00         | 84.00        | 1.20             | 0.20            | 0.00         |
| 32.00        | 1.20             | 0.20            | 0.00         | 85.00        | 1.20             | 0.20            | 0.00         |
| 33.00        | 1.20             | 0.20            | 0.00         | 86.00        | 1.20             | 0.20            | 0.00         |
| 34.00        | 1.20             | 0.20            | 0.00         | 87.00        | 1.20             | 0.20            | 0.00         |
| 35.00        | 1.20             | 0.20            | 0.00         | 88.00        | 1.20             | 0.20            | 0.00         |
| 36.00        | 1.20             | 0.20            | 0.00         | 89.00        | 1.20             | 0.20            | 0.00         |
| 37.00        | 1.20             | 0.20            | 0.00         | 90.00        | 1.20             | 0.20            | 0.00         |
| 38.00        | 1.20             | 0.20            | 0.00         | 91.00        | 1.20             | 0.20            | 0.00         |
| 39.00        | 1.20             | 0.20            | 0.00         | 92.00        | 1.20             | 0.20            | 0.00         |
| 40.00        | 1.20             | 0.20            | 0.00         | 93.00        | 1.20             | 0.20            | 0.00         |
| 41.00        | 1.20             | 0.20            | 0.00         | 94.00        | 1.20             | 0.20            | 0.00         |
| 42.00        | 1.20             | 0.20            | 0.00         | 95.00        | 1.20             | 0.20            | 0.00         |
| 43.00        | 1.20             | 0.20            | 0.00         | 96.00        | 1.20             | 0.20            | 0.00         |
| 44.00        | 1.20             | 0.20            | 0.00         | 97.00        | 1.20             | 0.20            | 0.00         |
| 45.00        | 1.20             | 0.20            | 0.00         | 98.00        | 1.20             | 0.20            | 0.00         |
| 46.00        | 1.20             | 0.20            | 0.00         | 99.00        | 1.20             | 0.20            | 0.00         |
| 47.00        | 1.20             | 0.20            | 0.00         | 100.00       | 1.20             | 0.20            | 0.00         |
| 48.00        | 1.20             | 0.20            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.20            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.20            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.20            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.20            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 2eS: Subcat 2e**

Runoff = 0.07 cfs @ 12.01 hrs, Volume= 0.004 af, Depth= 0.22"  
 Routed to Reach 5R : Proposed RRv Swale

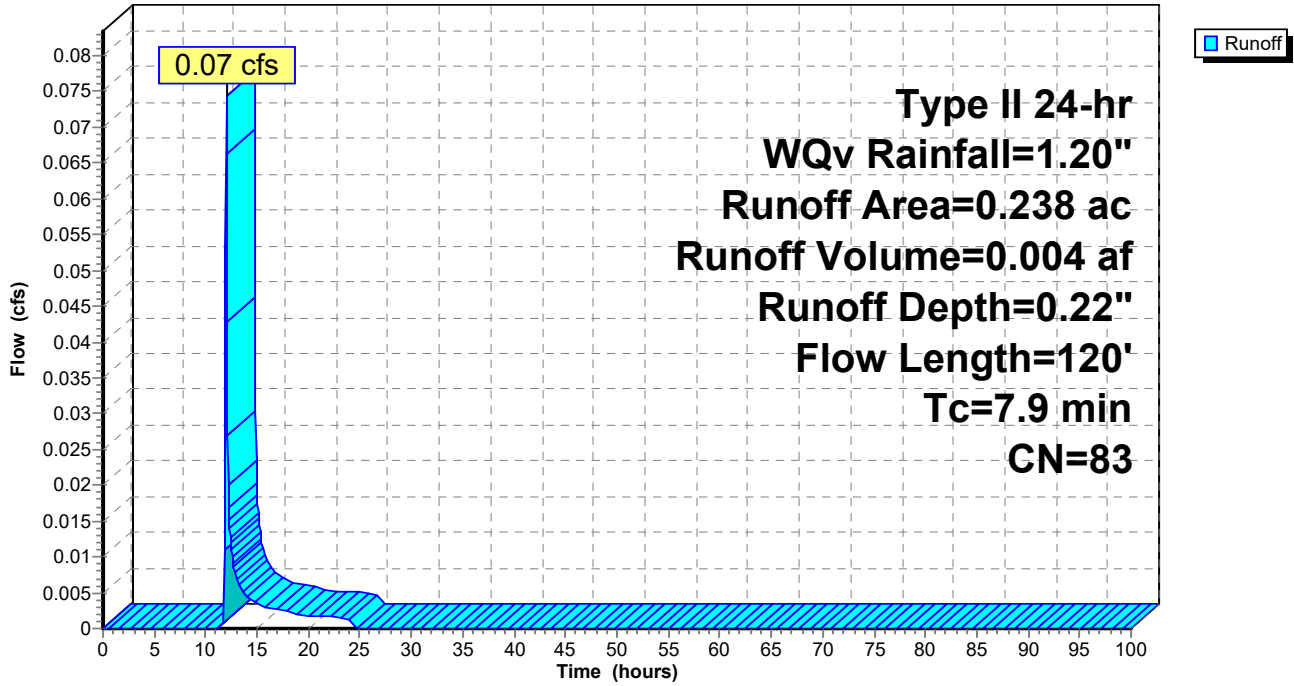
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.175     | 78 | Meadow, non-grazed, HSG D |
| * 0.063   | 98 | Paved parking, HSG D      |
| 0.238     | 83 | Weighted Average          |
| 0.175     |    | 73.53% Pervious Area      |
| 0.063     |    | 26.47% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 2.3      | 17            | 0.0286        | 0.12              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 1.9      | 11            | 0.0201        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 0.4      | 25            | 0.0200        | 0.94              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 0.9      | 52            | 0.0192        | 0.97              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 15            | 0.0194        | 0.10              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 7.9      | 120           | Total         |                   |                |   |

### Subcatchment 2eS: Subcat 2e

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

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**Hydrograph for Subcatchment 2eS: Subcat 2e**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.22            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.22            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.22            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.22            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.22            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.22            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.22            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.22            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.22            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.22            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.22            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.22            | 0.00         |
| 12.00        | 0.80             | 0.06            | <b>0.07</b>  | 65.00        | 1.20             | 0.22            | 0.00         |
| 13.00        | 0.93             | 0.10            | 0.01         | 66.00        | 1.20             | 0.22            | 0.00         |
| 14.00        | 0.98             | 0.13            | 0.00         | 67.00        | 1.20             | 0.22            | 0.00         |
| 15.00        | 1.02             | 0.14            | 0.00         | 68.00        | 1.20             | 0.22            | 0.00         |
| 16.00        | 1.06             | 0.16            | 0.00         | 69.00        | 1.20             | 0.22            | 0.00         |
| 17.00        | 1.08             | 0.17            | 0.00         | 70.00        | 1.20             | 0.22            | 0.00         |
| 18.00        | 1.11             | 0.18            | 0.00         | 71.00        | 1.20             | 0.22            | 0.00         |
| 19.00        | 1.13             | 0.19            | 0.00         | 72.00        | 1.20             | 0.22            | 0.00         |
| 20.00        | 1.14             | 0.19            | 0.00         | 73.00        | 1.20             | 0.22            | 0.00         |
| 21.00        | 1.16             | 0.20            | 0.00         | 74.00        | 1.20             | 0.22            | 0.00         |
| 22.00        | 1.17             | 0.21            | 0.00         | 75.00        | 1.20             | 0.22            | 0.00         |
| 23.00        | 1.19             | 0.21            | 0.00         | 76.00        | 1.20             | 0.22            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.22</b>     | 0.00         | 77.00        | 1.20             | 0.22            | 0.00         |
| 25.00        | 1.20             | 0.22            | 0.00         | 78.00        | 1.20             | 0.22            | 0.00         |
| 26.00        | 1.20             | 0.22            | 0.00         | 79.00        | 1.20             | 0.22            | 0.00         |
| 27.00        | 1.20             | 0.22            | 0.00         | 80.00        | 1.20             | 0.22            | 0.00         |
| 28.00        | 1.20             | 0.22            | 0.00         | 81.00        | 1.20             | 0.22            | 0.00         |
| 29.00        | 1.20             | 0.22            | 0.00         | 82.00        | 1.20             | 0.22            | 0.00         |
| 30.00        | 1.20             | 0.22            | 0.00         | 83.00        | 1.20             | 0.22            | 0.00         |
| 31.00        | 1.20             | 0.22            | 0.00         | 84.00        | 1.20             | 0.22            | 0.00         |
| 32.00        | 1.20             | 0.22            | 0.00         | 85.00        | 1.20             | 0.22            | 0.00         |
| 33.00        | 1.20             | 0.22            | 0.00         | 86.00        | 1.20             | 0.22            | 0.00         |
| 34.00        | 1.20             | 0.22            | 0.00         | 87.00        | 1.20             | 0.22            | 0.00         |
| 35.00        | 1.20             | 0.22            | 0.00         | 88.00        | 1.20             | 0.22            | 0.00         |
| 36.00        | 1.20             | 0.22            | 0.00         | 89.00        | 1.20             | 0.22            | 0.00         |
| 37.00        | 1.20             | 0.22            | 0.00         | 90.00        | 1.20             | 0.22            | 0.00         |
| 38.00        | 1.20             | 0.22            | 0.00         | 91.00        | 1.20             | 0.22            | 0.00         |
| 39.00        | 1.20             | 0.22            | 0.00         | 92.00        | 1.20             | 0.22            | 0.00         |
| 40.00        | 1.20             | 0.22            | 0.00         | 93.00        | 1.20             | 0.22            | 0.00         |
| 41.00        | 1.20             | 0.22            | 0.00         | 94.00        | 1.20             | 0.22            | 0.00         |
| 42.00        | 1.20             | 0.22            | 0.00         | 95.00        | 1.20             | 0.22            | 0.00         |
| 43.00        | 1.20             | 0.22            | 0.00         | 96.00        | 1.20             | 0.22            | 0.00         |
| 44.00        | 1.20             | 0.22            | 0.00         | 97.00        | 1.20             | 0.22            | 0.00         |
| 45.00        | 1.20             | 0.22            | 0.00         | 98.00        | 1.20             | 0.22            | 0.00         |
| 46.00        | 1.20             | 0.22            | 0.00         | 99.00        | 1.20             | 0.22            | 0.00         |
| 47.00        | 1.20             | 0.22            | 0.00         | 100.00       | 1.20             | 0.22            | 0.00         |
| 48.00        | 1.20             | 0.22            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.22            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.22            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.22            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.22            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment 3S: Subcat 3**

Runoff = 0.01 cfs @ 12.00 hrs, Volume= 0.000 af, Depth= 0.17"  
 Routed to Link AP2 : Analysis Point 2

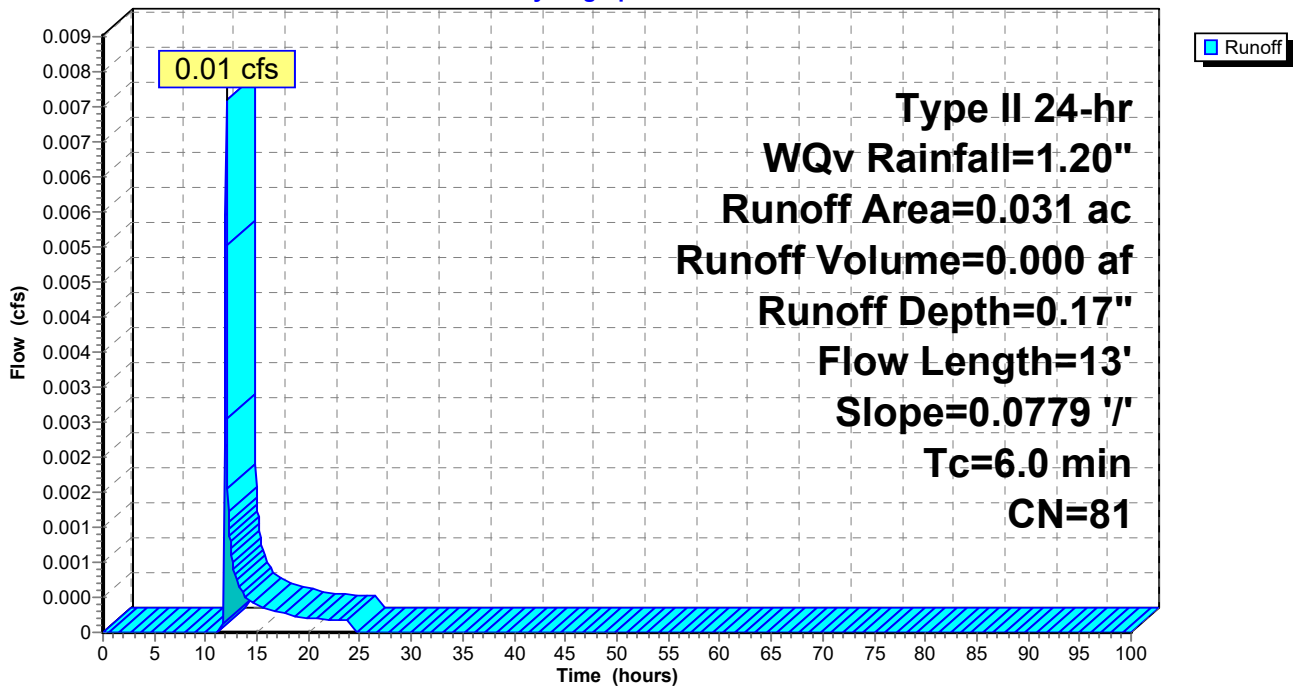
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.001     | 98 | Paved roads w/curbs & sewers, HSG D |
| 0.030     | 80 | >75% Grass cover, Good, HSG D       |
| 0.031     | 81 | Weighted Average                    |
| 0.030     |    | 96.77% Pervious Area                |
| 0.001     |    | 3.23% Impervious Area               |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|--|-------------------|----------------|---|
| 1.2      | 13            | 0.0779                                   | 0.18              |                | Sheet Flow, Hydro Flow<br>Grass: Short n= 0.150 P2= 2.59" |
| 1.2      | 13            | Total, Increased to minimum Tc = 6.0 min |                   |                |   |

**Subcatchment 3S: Subcat 3**

Hydrograph



**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment 3S: Subcat 3**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 1.20                | 0.17               | 0.00            |
| 1.00            | 0.01                | 0.00               | 0.00            | 54.00           | 1.20                | 0.17               | 0.00            |
| 2.00            | 0.03                | 0.00               | 0.00            | 55.00           | 1.20                | 0.17               | 0.00            |
| 3.00            | 0.04                | 0.00               | 0.00            | 56.00           | 1.20                | 0.17               | 0.00            |
| 4.00            | 0.06                | 0.00               | 0.00            | 57.00           | 1.20                | 0.17               | 0.00            |
| 5.00            | 0.08                | 0.00               | 0.00            | 58.00           | 1.20                | 0.17               | 0.00            |
| 6.00            | 0.10                | 0.00               | 0.00            | 59.00           | 1.20                | 0.17               | 0.00            |
| 7.00            | 0.12                | 0.00               | 0.00            | 60.00           | 1.20                | 0.17               | 0.00            |
| 8.00            | 0.14                | 0.00               | 0.00            | 61.00           | 1.20                | 0.17               | 0.00            |
| 9.00            | 0.18                | 0.00               | 0.00            | 62.00           | 1.20                | 0.17               | 0.00            |
| 10.00           | 0.22                | 0.00               | 0.00            | 63.00           | 1.20                | 0.17               | 0.00            |
| 11.00           | 0.28                | 0.00               | 0.00            | 64.00           | 1.20                | 0.17               | 0.00            |
| 12.00           | 0.80                | 0.04               | <b>0.01</b>     | 65.00           | 1.20                | 0.17               | 0.00            |
| 13.00           | 0.93                | 0.07               | 0.00            | 66.00           | 1.20                | 0.17               | 0.00            |
| 14.00           | 0.98                | 0.09               | 0.00            | 67.00           | 1.20                | 0.17               | 0.00            |
| 15.00           | 1.02                | 0.11               | 0.00            | 68.00           | 1.20                | 0.17               | 0.00            |
| 16.00           | 1.06                | 0.12               | 0.00            | 69.00           | 1.20                | 0.17               | 0.00            |
| 17.00           | 1.08                | 0.13               | 0.00            | 70.00           | 1.20                | 0.17               | 0.00            |
| 18.00           | 1.11                | 0.14               | 0.00            | 71.00           | 1.20                | 0.17               | 0.00            |
| 19.00           | 1.13                | 0.14               | 0.00            | 72.00           | 1.20                | 0.17               | 0.00            |
| 20.00           | 1.14                | 0.15               | 0.00            | 73.00           | 1.20                | 0.17               | 0.00            |
| 21.00           | 1.16                | 0.16               | 0.00            | 74.00           | 1.20                | 0.17               | 0.00            |
| 22.00           | 1.17                | 0.16               | 0.00            | 75.00           | 1.20                | 0.17               | 0.00            |
| 23.00           | 1.19                | 0.17               | 0.00            | 76.00           | 1.20                | 0.17               | 0.00            |
| 24.00           | <b>1.20</b>         | <b>0.17</b>        | 0.00            | 77.00           | 1.20                | 0.17               | 0.00            |
| 25.00           | 1.20                | 0.17               | 0.00            | 78.00           | 1.20                | 0.17               | 0.00            |
| 26.00           | 1.20                | 0.17               | 0.00            | 79.00           | 1.20                | 0.17               | 0.00            |
| 27.00           | 1.20                | 0.17               | 0.00            | 80.00           | 1.20                | 0.17               | 0.00            |
| 28.00           | 1.20                | 0.17               | 0.00            | 81.00           | 1.20                | 0.17               | 0.00            |
| 29.00           | 1.20                | 0.17               | 0.00            | 82.00           | 1.20                | 0.17               | 0.00            |
| 30.00           | 1.20                | 0.17               | 0.00            | 83.00           | 1.20                | 0.17               | 0.00            |
| 31.00           | 1.20                | 0.17               | 0.00            | 84.00           | 1.20                | 0.17               | 0.00            |
| 32.00           | 1.20                | 0.17               | 0.00            | 85.00           | 1.20                | 0.17               | 0.00            |
| 33.00           | 1.20                | 0.17               | 0.00            | 86.00           | 1.20                | 0.17               | 0.00            |
| 34.00           | 1.20                | 0.17               | 0.00            | 87.00           | 1.20                | 0.17               | 0.00            |
| 35.00           | 1.20                | 0.17               | 0.00            | 88.00           | 1.20                | 0.17               | 0.00            |
| 36.00           | 1.20                | 0.17               | 0.00            | 89.00           | 1.20                | 0.17               | 0.00            |
| 37.00           | 1.20                | 0.17               | 0.00            | 90.00           | 1.20                | 0.17               | 0.00            |
| 38.00           | 1.20                | 0.17               | 0.00            | 91.00           | 1.20                | 0.17               | 0.00            |
| 39.00           | 1.20                | 0.17               | 0.00            | 92.00           | 1.20                | 0.17               | 0.00            |
| 40.00           | 1.20                | 0.17               | 0.00            | 93.00           | 1.20                | 0.17               | 0.00            |
| 41.00           | 1.20                | 0.17               | 0.00            | 94.00           | 1.20                | 0.17               | 0.00            |
| 42.00           | 1.20                | 0.17               | 0.00            | 95.00           | 1.20                | 0.17               | 0.00            |
| 43.00           | 1.20                | 0.17               | 0.00            | 96.00           | 1.20                | 0.17               | 0.00            |
| 44.00           | 1.20                | 0.17               | 0.00            | 97.00           | 1.20                | 0.17               | 0.00            |
| 45.00           | 1.20                | 0.17               | 0.00            | 98.00           | 1.20                | 0.17               | 0.00            |
| 46.00           | 1.20                | 0.17               | 0.00            | 99.00           | 1.20                | 0.17               | 0.00            |
| 47.00           | 1.20                | 0.17               | 0.00            | 100.00          | 1.20                | 0.17               | 0.00            |
| 48.00           | 1.20                | 0.17               | 0.00            |                 |                     |                    |                 |
| 49.00           | 1.20                | 0.17               | 0.00            |                 |                     |                    |                 |
| 50.00           | 1.20                | 0.17               | 0.00            |                 |                     |                    |                 |
| 51.00           | 1.20                | 0.17               | 0.00            |                 |                     |                    |                 |
| 52.00           | 1.20                | 0.17               | 0.00            |                 |                     |                    |                 |



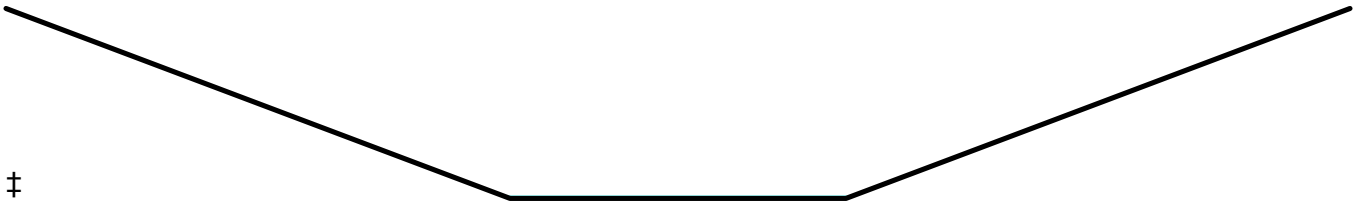
**Summary for Reach 1R: Existing Swale**

Inflow Area = 3.372 ac, 8.66% Impervious, Inflow Depth = 0.01" for WQv event  
 Inflow = 0.02 cfs @ 12.01 hrs, Volume= 0.002 af  
 Outflow = 0.01 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 47%, Lag= 5.7 min  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.44 fps, Min. Travel Time= 9.3 min  
 Avg. Velocity = 0.33 fps, Avg. Travel Time= 12.4 min

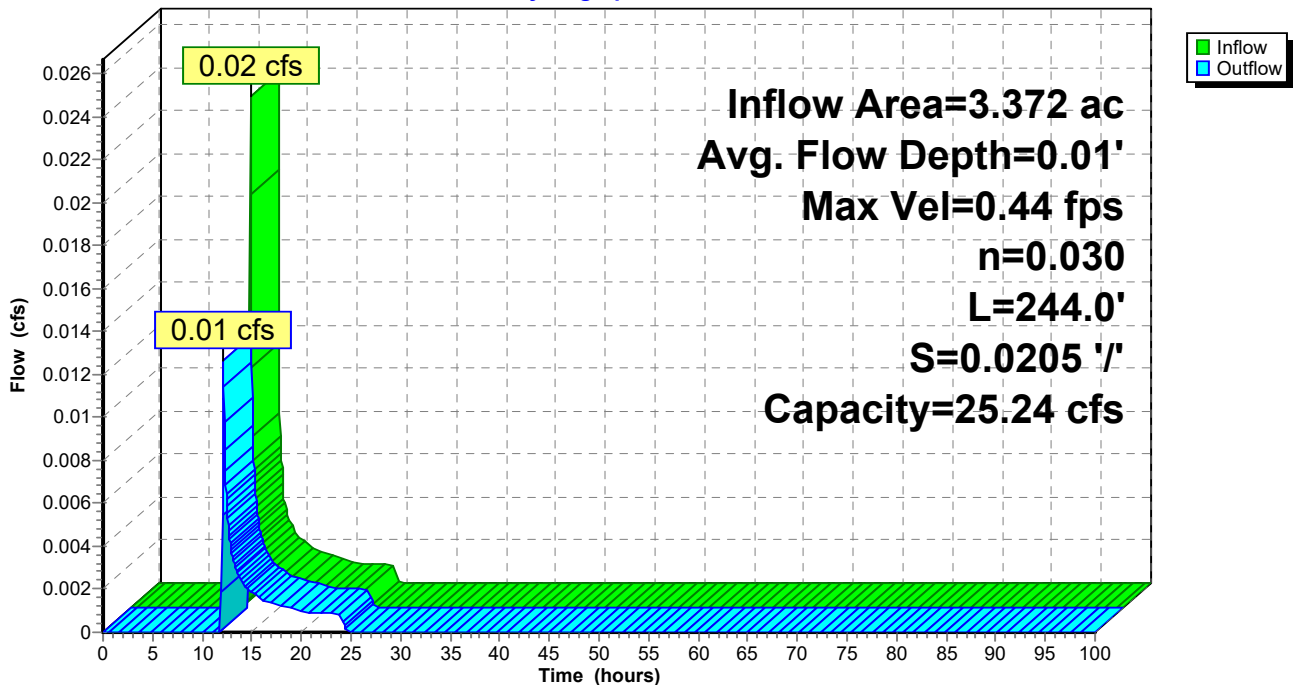
Peak Storage= 7 cf @ 12.10 hrs  
 Average Depth at Peak Storage= 0.01' , Surface Width= 2.09'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 25.24 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding  
 Side Slope Z-value= 3.0 '/' Top Width= 8.00'  
 Length= 244.0' Slope= 0.0205 '/'  
 Inlet Invert= 316.00', Outlet Invert= 311.00'

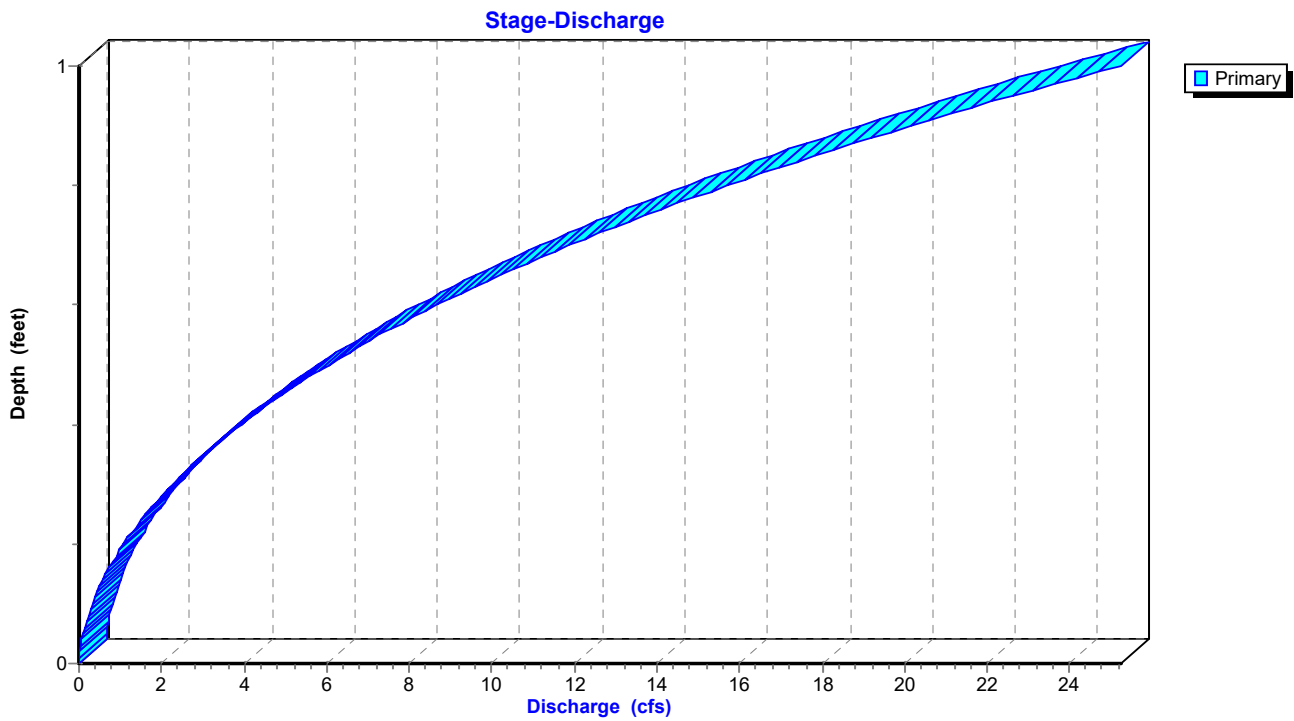


**Reach 1R: Existing Swale**

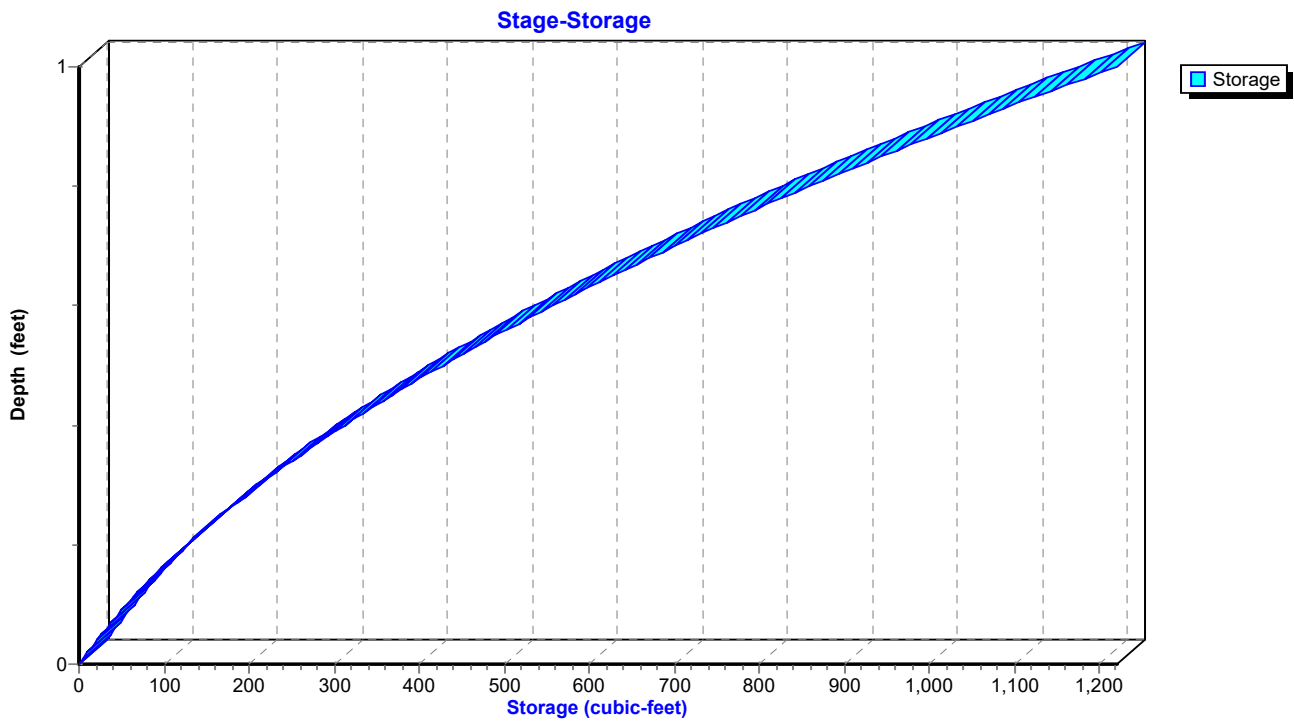
Hydrograph



### Reach 1R: Existing Swale



### Reach 1R: Existing Swale



**Hydrograph for Reach 1R: Existing Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 316.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 316.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>316.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.00</b>  | <b>4</b>             | <b>316.01</b>    | <b>0.01</b>   |
| 15.00        | 0.00         | 1                    | 316.00           | 0.00          |
| 17.50        | 0.00         | 1                    | 316.00           | 0.00          |
| 20.00        | 0.00         | 1                    | 316.00           | 0.00          |
| 22.50        | 0.00         | 1                    | 316.00           | 0.00          |
| 25.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 316.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 316.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 316.00           | 0.00          |

**Stage-Discharge for Reach 1R: Existing Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 316.00              | 0.00                 | 0.00               | 316.53              | 3.56                 | 6.77               |
| 316.01              | 0.33                 | 0.01               | 316.54              | 3.59                 | 7.03               |
| 316.02              | 0.51                 | 0.02               | 316.55              | 3.63                 | 7.29               |
| 316.03              | 0.66                 | 0.04               | 316.56              | 3.67                 | 7.56               |
| 316.04              | 0.80                 | 0.07               | 316.57              | 3.70                 | 7.83               |
| 316.05              | 0.92                 | 0.10               | 316.58              | 3.74                 | 8.11               |
| 316.06              | 1.03                 | 0.13               | 316.59              | 3.77                 | 8.39               |
| 316.07              | 1.13                 | 0.17               | 316.60              | 3.81                 | 8.68               |
| 316.08              | 1.22                 | 0.22               | 316.61              | 3.84                 | 8.98               |
| 316.09              | 1.31                 | 0.27               | 316.62              | 3.88                 | 9.28               |
| 316.10              | 1.40                 | 0.32               | 316.63              | 3.91                 | 9.58               |
| 316.11              | 1.48                 | 0.38               | 316.64              | 3.94                 | 9.89               |
| 316.12              | 1.55                 | 0.44               | 316.65              | 3.98                 | 10.21              |
| 316.13              | 1.63                 | 0.51               | 316.66              | 4.01                 | 10.54              |
| 316.14              | 1.70                 | 0.58               | 316.67              | 4.04                 | 10.87              |
| 316.15              | 1.77                 | 0.65               | 316.68              | 4.08                 | 11.20              |
| 316.16              | 1.84                 | 0.73               | 316.69              | 4.11                 | 11.54              |
| 316.17              | 1.90                 | 0.81               | 316.70              | 4.14                 | 11.89              |
| 316.18              | 1.96                 | 0.90               | 316.71              | 4.17                 | 12.24              |
| 316.19              | 2.02                 | 0.99               | 316.72              | 4.21                 | 12.60              |
| 316.20              | 2.08                 | 1.08               | 316.73              | 4.24                 | 12.97              |
| 316.21              | 2.14                 | 1.18               | 316.74              | 4.27                 | 13.34              |
| 316.22              | 2.20                 | 1.29               | 316.75              | 4.30                 | 13.71              |
| 316.23              | 2.25                 | 1.39               | 316.76              | 4.33                 | 14.10              |
| 316.24              | 2.31                 | 1.51               | 316.77              | 4.37                 | 14.49              |
| 316.25              | 2.36                 | 1.62               | 316.78              | 4.40                 | 14.88              |
| 316.26              | 2.41                 | 1.74               | 316.79              | 4.43                 | 15.29              |
| 316.27              | 2.46                 | 1.87               | 316.80              | 4.46                 | 15.69              |
| 316.28              | 2.51                 | 2.00               | 316.81              | 4.49                 | 16.11              |
| 316.29              | 2.56                 | 2.13               | 316.82              | 4.52                 | 16.53              |
| 316.30              | 2.61                 | 2.27               | 316.83              | 4.55                 | 16.96              |
| 316.31              | 2.66                 | 2.41               | 316.84              | 4.58                 | 17.39              |
| 316.32              | 2.70                 | 2.56               | 316.85              | 4.61                 | 17.83              |
| 316.33              | 2.75                 | 2.71               | 316.86              | 4.64                 | 18.28              |
| 316.34              | 2.79                 | 2.87               | 316.87              | 4.67                 | 18.73              |
| 316.35              | 2.84                 | 3.03               | 316.88              | 4.70                 | 19.19              |
| 316.36              | 2.88                 | 3.20               | 316.89              | 4.73                 | 19.66              |
| 316.37              | 2.93                 | 3.37               | 316.90              | 4.76                 | 20.13              |
| 316.38              | 2.97                 | 3.54               | 316.91              | 4.79                 | 20.61              |
| 316.39              | 3.01                 | 3.72               | 316.92              | 4.82                 | 21.10              |
| 316.40              | 3.05                 | 3.91               | 316.93              | 4.85                 | 21.59              |
| 316.41              | 3.09                 | 4.10               | 316.94              | 4.88                 | 22.09              |
| 316.42              | 3.14                 | 4.29               | 316.95              | 4.90                 | 22.60              |
| 316.43              | 3.18                 | 4.49               | 316.96              | 4.93                 | 23.11              |
| 316.44              | 3.22                 | 4.70               | 316.97              | 4.96                 | 23.63              |
| 316.45              | 3.26                 | 4.91               | 316.98              | 4.99                 | 24.16              |
| 316.46              | 3.29                 | 5.12               | 316.99              | 5.02                 | 24.70              |
| 316.47              | 3.33                 | 5.34               | 317.00              | <b>5.05</b>          | <b>25.24</b>       |
| 316.48              | 3.37                 | 5.57               |                     |                      |                    |
| 316.49              | 3.41                 | 5.80               |                     |                      |                    |
| 316.50              | 3.45                 | 6.03               |                     |                      |                    |
| 316.51              | 3.48                 | 6.27               |                     |                      |                    |
| 316.52              | 3.52                 | 6.52               |                     |                      |                    |

**Stage-Area-Storage for Reach 1R: Existing Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 316.00              | 0.0                 | 0                       | 316.53              | 1.9                 | 464                     |
| 316.01              | 0.0                 | 5                       | 316.54              | 2.0                 | 477                     |
| 316.02              | 0.0                 | 10                      | 316.55              | 2.0                 | 490                     |
| 316.03              | 0.1                 | 15                      | 316.56              | 2.1                 | 503                     |
| 316.04              | 0.1                 | 21                      | 316.57              | 2.1                 | 516                     |
| 316.05              | 0.1                 | 26                      | 316.58              | 2.2                 | 529                     |
| 316.06              | 0.1                 | 32                      | 316.59              | 2.2                 | 543                     |
| 316.07              | 0.2                 | 38                      | 316.60              | 2.3                 | 556                     |
| 316.08              | 0.2                 | 44                      | 316.61              | 2.3                 | 570                     |
| 316.09              | 0.2                 | 50                      | 316.62              | 2.4                 | 584                     |
| 316.10              | 0.2                 | 56                      | 316.63              | 2.5                 | 598                     |
| 316.11              | 0.3                 | 63                      | 316.64              | 2.5                 | 612                     |
| 316.12              | 0.3                 | 69                      | 316.65              | 2.6                 | 626                     |
| 316.13              | 0.3                 | 76                      | 316.66              | 2.6                 | 641                     |
| 316.14              | 0.3                 | 83                      | 316.67              | 2.7                 | 656                     |
| 316.15              | 0.4                 | 90                      | 316.68              | 2.7                 | 670                     |
| 316.16              | 0.4                 | 97                      | 316.69              | 2.8                 | 685                     |
| 316.17              | 0.4                 | 104                     | 316.70              | 2.9                 | 700                     |
| 316.18              | 0.5                 | 112                     | 316.71              | 2.9                 | 715                     |
| 316.19              | 0.5                 | 119                     | 316.72              | 3.0                 | 731                     |
| 316.20              | 0.5                 | 127                     | 316.73              | 3.1                 | 746                     |
| 316.21              | 0.6                 | 135                     | 316.74              | 3.1                 | 762                     |
| 316.22              | 0.6                 | 143                     | 316.75              | 3.2                 | 778                     |
| 316.23              | 0.6                 | 151                     | 316.76              | 3.3                 | 794                     |
| 316.24              | 0.7                 | 159                     | 316.77              | 3.3                 | 810                     |
| 316.25              | 0.7                 | 168                     | 316.78              | 3.4                 | 826                     |
| 316.26              | 0.7                 | 176                     | 316.79              | 3.5                 | 842                     |
| 316.27              | 0.8                 | 185                     | 316.80              | 3.5                 | 859                     |
| 316.28              | 0.8                 | 194                     | 316.81              | 3.6                 | 876                     |
| 316.29              | 0.8                 | 203                     | 316.82              | 3.7                 | 892                     |
| 316.30              | 0.9                 | 212                     | 316.83              | 3.7                 | 909                     |
| 316.31              | 0.9                 | 222                     | 316.84              | 3.8                 | 926                     |
| 316.32              | 0.9                 | 231                     | 316.85              | 3.9                 | 944                     |
| 316.33              | 1.0                 | 241                     | 316.86              | 3.9                 | 961                     |
| 316.34              | 1.0                 | 251                     | 316.87              | 4.0                 | 979                     |
| 316.35              | 1.1                 | 260                     | 316.88              | 4.1                 | 996                     |
| 316.36              | 1.1                 | 271                     | 316.89              | 4.2                 | 1,014                   |
| 316.37              | 1.2                 | 281                     | 316.90              | 4.2                 | 1,032                   |
| 316.38              | 1.2                 | 291                     | 316.91              | 4.3                 | 1,050                   |
| 316.39              | 1.2                 | 302                     | 316.92              | 4.4                 | 1,069                   |
| 316.40              | 1.3                 | 312                     | 316.93              | 4.5                 | 1,087                   |
| 316.41              | 1.3                 | 323                     | 316.94              | 4.5                 | 1,106                   |
| 316.42              | 1.4                 | 334                     | 316.95              | 4.6                 | 1,124                   |
| 316.43              | 1.4                 | 345                     | 316.96              | 4.7                 | 1,143                   |
| 316.44              | 1.5                 | 356                     | 316.97              | 4.8                 | 1,162                   |
| 316.45              | 1.5                 | 368                     | 316.98              | 4.8                 | 1,181                   |
| 316.46              | 1.6                 | 379                     | 316.99              | 4.9                 | 1,201                   |
| 316.47              | 1.6                 | 391                     | 317.00              | <b>5.0</b>          | <b>1,220</b>            |
| 316.48              | 1.7                 | 403                     |                     |                     |                         |
| 316.49              | 1.7                 | 415                     |                     |                     |                         |
| 316.50              | 1.8                 | 427                     |                     |                     |                         |
| 316.51              | 1.8                 | 439                     |                     |                     |                         |
| 316.52              | 1.9                 | 452                     |                     |                     |                         |

**Summary for Reach 2R: Proposed RRv Swale**

Inflow Area = 0.830 ac, 18.55% Impervious, Inflow Depth = 0.20" for WQv event  
 Inflow = 0.24 cfs @ 12.00 hrs, Volume= 0.014 af  
 Outflow = 0.11 cfs @ 12.11 hrs, Volume= 0.014 af, Atten= 52%, Lag= 6.4 min  
 Routed to Pond 3P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.47 fps, Min. Travel Time= 13.9 min  
 Avg. Velocity = 0.17 fps, Avg. Travel Time= 38.5 min

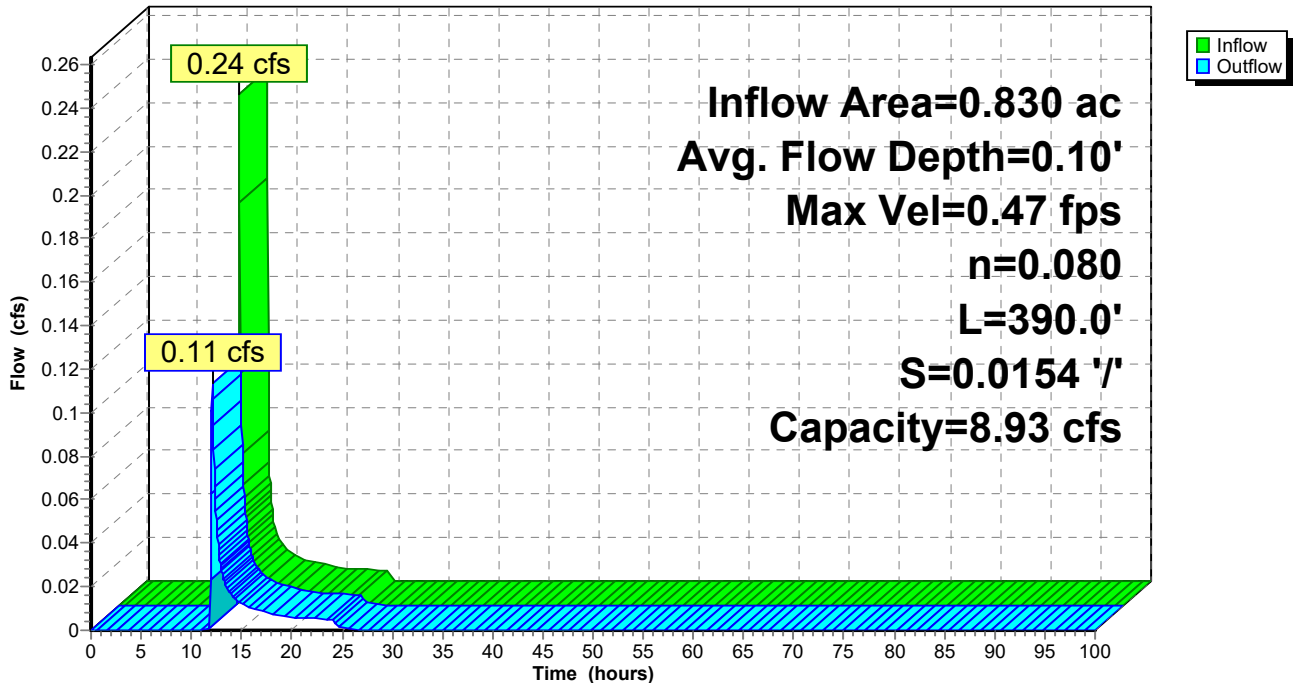
Peak Storage= 95 cf @ 12.11 hrs  
 Average Depth at Peak Storage= 0.10' , Surface Width= 2.63'  
 Bank-Full Depth= 1.04' Flow Area= 5.3 sf, Capacity= 8.93 cfs

2.00' x 1.04' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 8.24'  
 Length= 390.0' Slope= 0.0154 ' / '  
 Inlet Invert= 318.00', Outlet Invert= 312.00'

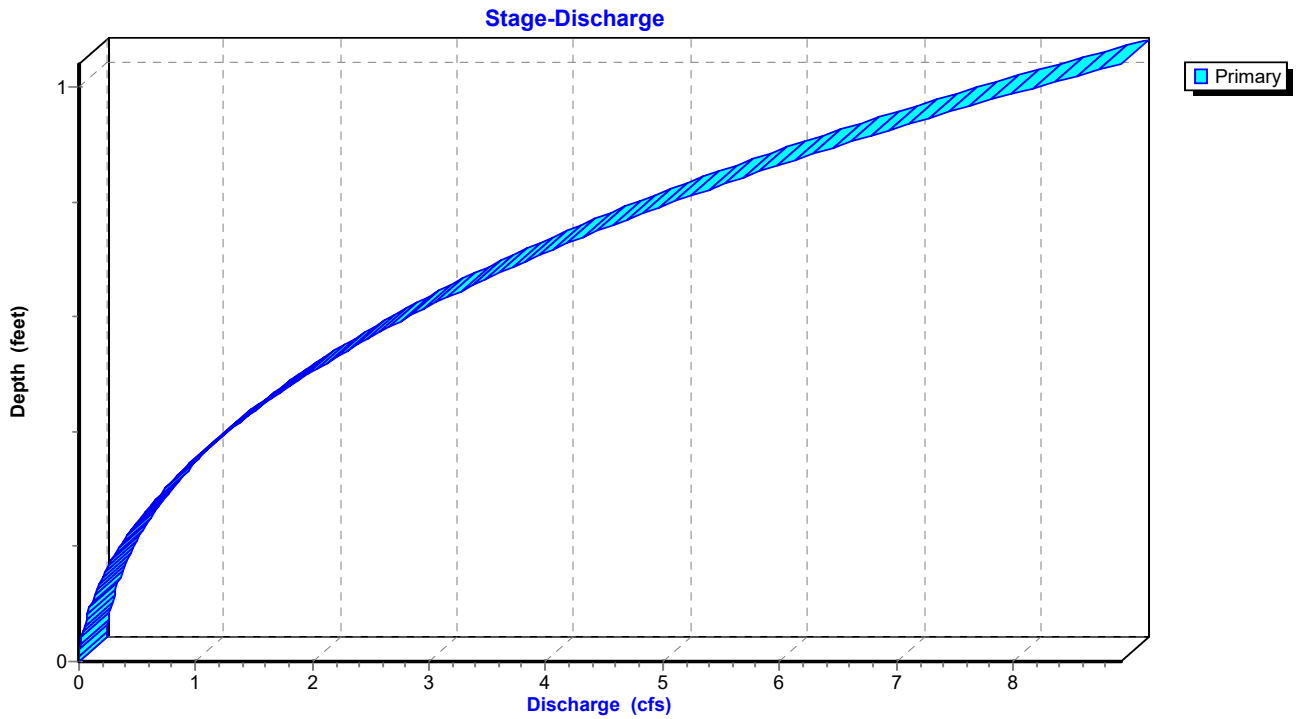


**Reach 2R: Proposed RRv Swale**

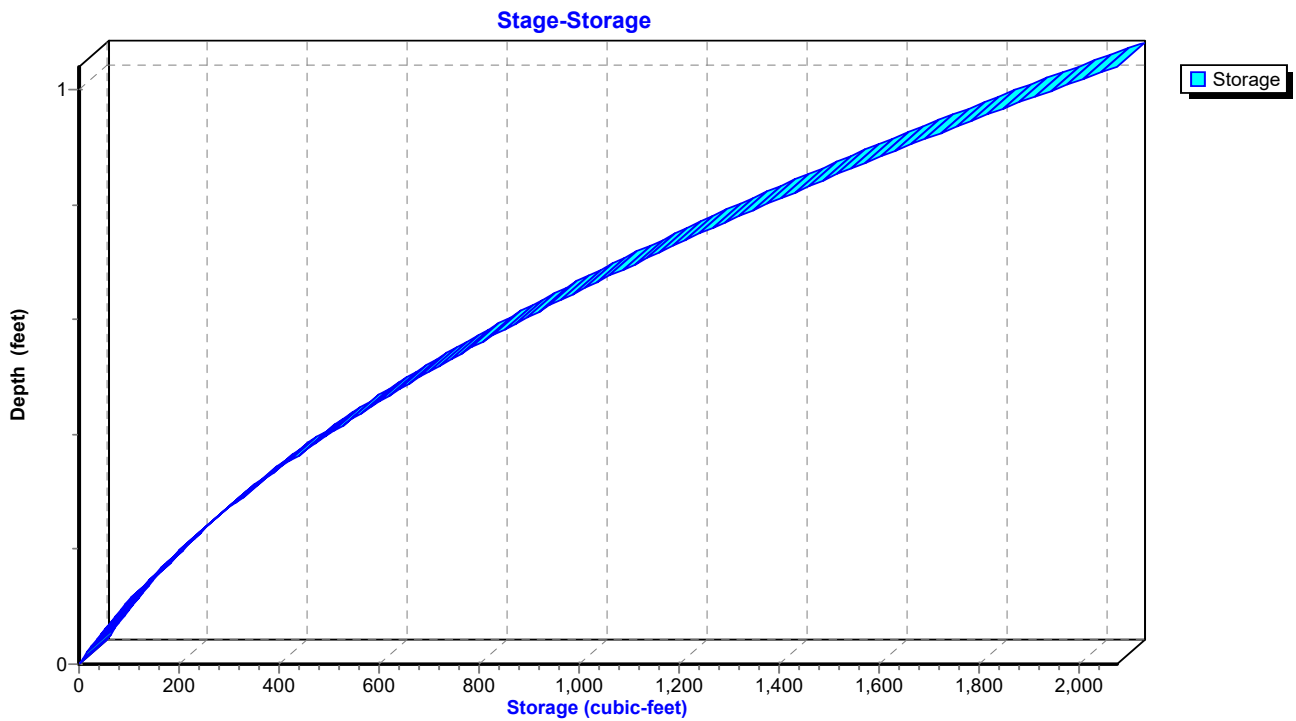
Hydrograph



### Reach 2R: Proposed RRv Swale



### Reach 2R: Proposed RRv Swale



**Hydrograph for Reach 2R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 318.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 318.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>318.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.03</b>  | <b>56</b>            | <b>318.07</b>    | <b>0.05</b>   |
| 15.00        | 0.01         | 23                   | 318.03           | 0.01          |
| 17.50        | 0.01         | 18                   | 318.02           | 0.01          |
| 20.00        | 0.01         | 15                   | 318.02           | 0.01          |
| 22.50        | 0.01         | 13                   | 318.02           | 0.01          |
| 25.00        | 0.00         | 5                    | 318.01           | 0.00          |
| 27.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 318.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 318.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 318.00           | 0.00          |



**Stage-Discharge for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 318.00              | 0.00                 | 0.00               | 318.53              | 1.16                 | 2.20               |
| 318.01              | 0.10                 | 0.00               | 318.54              | 1.17                 | 2.28               |
| 318.02              | 0.17                 | 0.01               | 318.55              | 1.18                 | 2.37               |
| 318.03              | 0.22                 | 0.01               | 318.56              | 1.19                 | 2.46               |
| 318.04              | 0.26                 | 0.02               | 318.57              | 1.20                 | 2.54               |
| 318.05              | 0.30                 | 0.03               | 318.58              | 1.21                 | 2.63               |
| 318.06              | 0.33                 | 0.04               | 318.59              | 1.23                 | 2.73               |
| 318.07              | 0.37                 | 0.06               | 318.60              | 1.24                 | 2.82               |
| 318.08              | 0.40                 | 0.07               | 318.61              | 1.25                 | 2.92               |
| 318.09              | 0.43                 | 0.09               | 318.62              | 1.26                 | 3.01               |
| 318.10              | 0.45                 | 0.10               | 318.63              | 1.27                 | 3.11               |
| 318.11              | 0.48                 | 0.12               | 318.64              | 1.28                 | 3.22               |
| 318.12              | 0.50                 | 0.14               | 318.65              | 1.29                 | 3.32               |
| 318.13              | 0.53                 | 0.16               | 318.66              | 1.30                 | 3.42               |
| 318.14              | 0.55                 | 0.19               | 318.67              | 1.31                 | 3.53               |
| 318.15              | 0.57                 | 0.21               | 318.68              | 1.32                 | 3.64               |
| 318.16              | 0.60                 | 0.24               | 318.69              | 1.34                 | 3.75               |
| 318.17              | 0.62                 | 0.26               | 318.70              | 1.35                 | 3.86               |
| 318.18              | 0.64                 | 0.29               | 318.71              | 1.36                 | 3.98               |
| 318.19              | 0.66                 | 0.32               | 318.72              | 1.37                 | 4.09               |
| 318.20              | 0.68                 | 0.35               | 318.73              | 1.38                 | 4.21               |
| 318.21              | 0.70                 | 0.38               | 318.74              | 1.39                 | 4.33               |
| 318.22              | 0.71                 | 0.42               | 318.75              | 1.40                 | 4.46               |
| 318.23              | 0.73                 | 0.45               | 318.76              | 1.41                 | 4.58               |
| 318.24              | 0.75                 | 0.49               | 318.77              | 1.42                 | 4.71               |
| 318.25              | 0.77                 | 0.53               | 318.78              | 1.43                 | 4.84               |
| 318.26              | 0.78                 | 0.57               | 318.79              | 1.44                 | 4.97               |
| 318.27              | 0.80                 | 0.61               | 318.80              | 1.45                 | 5.10               |
| 318.28              | 0.82                 | 0.65               | 318.81              | 1.46                 | 5.23               |
| 318.29              | 0.83                 | 0.69               | 318.82              | 1.47                 | 5.37               |
| 318.30              | 0.85                 | 0.74               | 318.83              | 1.48                 | 5.51               |
| 318.31              | 0.86                 | 0.78               | 318.84              | 1.49                 | 5.65               |
| 318.32              | 0.88                 | 0.83               | 318.85              | 1.50                 | 5.79               |
| 318.33              | 0.89                 | 0.88               | 318.86              | 1.51                 | 5.94               |
| 318.34              | 0.91                 | 0.93               | 318.87              | 1.52                 | 6.09               |
| 318.35              | 0.92                 | 0.98               | 318.88              | 1.53                 | 6.24               |
| 318.36              | 0.94                 | 1.04               | 318.89              | 1.54                 | 6.39               |
| 318.37              | 0.95                 | 1.09               | 318.90              | 1.55                 | 6.54               |
| 318.38              | 0.96                 | 1.15               | 318.91              | 1.56                 | 6.70               |
| 318.39              | 0.98                 | 1.21               | 318.92              | 1.57                 | 6.86               |
| 318.40              | 0.99                 | 1.27               | 318.93              | 1.57                 | 7.02               |
| 318.41              | 1.01                 | 1.33               | 318.94              | 1.58                 | 7.18               |
| 318.42              | 1.02                 | 1.40               | 318.95              | 1.59                 | 7.34               |
| 318.43              | 1.03                 | 1.46               | 318.96              | 1.60                 | 7.51               |
| 318.44              | 1.04                 | 1.53               | 318.97              | 1.61                 | 7.68               |
| 318.45              | 1.06                 | 1.59               | 318.98              | 1.62                 | 7.85               |
| 318.46              | 1.07                 | 1.66               | 318.99              | 1.63                 | 8.02               |
| 318.47              | 1.08                 | 1.74               | 319.00              | 1.64                 | 8.20               |
| 318.48              | 1.10                 | 1.81               | 319.01              | 1.65                 | 8.38               |
| 318.49              | 1.11                 | 1.88               | 319.02              | 1.66                 | 8.56               |
| 318.50              | 1.12                 | 1.96               | 319.03              | 1.67                 | 8.74               |
| 318.51              | 1.13                 | 2.04               | 319.04              | <b>1.68</b>          | <b>8.93</b>        |
| 318.52              | 1.14                 | 2.12               |                     |                      |                    |

**Stage-Area-Storage for Reach 2R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 318.00              | 0.0                 | 0                       | 318.53              | 1.9                 | 742                     |
| 318.01              | 0.0                 | 8                       | 318.54              | 2.0                 | 762                     |
| 318.02              | 0.0                 | 16                      | 318.55              | 2.0                 | 783                     |
| 318.03              | 0.1                 | 24                      | 318.56              | 2.1                 | 804                     |
| 318.04              | 0.1                 | 33                      | 318.57              | 2.1                 | 825                     |
| 318.05              | 0.1                 | 42                      | 318.58              | 2.2                 | 846                     |
| 318.06              | 0.1                 | 51                      | 318.59              | 2.2                 | 868                     |
| 318.07              | 0.2                 | 60                      | 318.60              | 2.3                 | 889                     |
| 318.08              | 0.2                 | 70                      | 318.61              | 2.3                 | 911                     |
| 318.09              | 0.2                 | 80                      | 318.62              | 2.4                 | 933                     |
| 318.10              | 0.2                 | 90                      | 318.63              | 2.5                 | 956                     |
| 318.11              | 0.3                 | 100                     | 318.64              | 2.5                 | 978                     |
| 318.12              | 0.3                 | 110                     | 318.65              | 2.6                 | 1,001                   |
| 318.13              | 0.3                 | 121                     | 318.66              | 2.6                 | 1,024                   |
| 318.14              | 0.3                 | 132                     | 318.67              | 2.7                 | 1,048                   |
| 318.15              | 0.4                 | 143                     | 318.68              | 2.7                 | 1,071                   |
| 318.16              | 0.4                 | 155                     | 318.69              | 2.8                 | 1,095                   |
| 318.17              | 0.4                 | 166                     | 318.70              | 2.9                 | 1,119                   |
| 318.18              | 0.5                 | 178                     | 318.71              | 2.9                 | 1,144                   |
| 318.19              | 0.5                 | 190                     | 318.72              | 3.0                 | 1,168                   |
| 318.20              | 0.5                 | 203                     | 318.73              | 3.1                 | 1,193                   |
| 318.21              | 0.6                 | 215                     | 318.74              | 3.1                 | 1,218                   |
| 318.22              | 0.6                 | 228                     | 318.75              | 3.2                 | 1,243                   |
| 318.23              | 0.6                 | 241                     | 318.76              | 3.3                 | 1,269                   |
| 318.24              | 0.7                 | 255                     | 318.77              | 3.3                 | 1,294                   |
| 318.25              | 0.7                 | 268                     | 318.78              | 3.4                 | 1,320                   |
| 318.26              | 0.7                 | 282                     | 318.79              | 3.5                 | 1,346                   |
| 318.27              | 0.8                 | 296                     | 318.80              | 3.5                 | 1,373                   |
| 318.28              | 0.8                 | 310                     | 318.81              | 3.6                 | 1,399                   |
| 318.29              | 0.8                 | 325                     | 318.82              | 3.7                 | 1,426                   |
| 318.30              | 0.9                 | 339                     | 318.83              | 3.7                 | 1,453                   |
| 318.31              | 0.9                 | 354                     | 318.84              | 3.8                 | 1,481                   |
| 318.32              | 0.9                 | 369                     | 318.85              | 3.9                 | 1,508                   |
| 318.33              | 1.0                 | 385                     | 318.86              | 3.9                 | 1,536                   |
| 318.34              | 1.0                 | 400                     | 318.87              | 4.0                 | 1,564                   |
| 318.35              | 1.1                 | 416                     | 318.88              | 4.1                 | 1,592                   |
| 318.36              | 1.1                 | 432                     | 318.89              | 4.2                 | 1,621                   |
| 318.37              | 1.2                 | 449                     | 318.90              | 4.2                 | 1,650                   |
| 318.38              | 1.2                 | 465                     | 318.91              | 4.3                 | 1,679                   |
| 318.39              | 1.2                 | 482                     | 318.92              | 4.4                 | 1,708                   |
| 318.40              | 1.3                 | 499                     | 318.93              | 4.5                 | 1,737                   |
| 318.41              | 1.3                 | 517                     | 318.94              | 4.5                 | 1,767                   |
| 318.42              | 1.4                 | 534                     | 318.95              | 4.6                 | 1,797                   |
| 318.43              | 1.4                 | 552                     | 318.96              | 4.7                 | 1,827                   |
| 318.44              | 1.5                 | 570                     | 318.97              | 4.8                 | 1,857                   |
| 318.45              | 1.5                 | 588                     | 318.98              | 4.8                 | 1,888                   |
| 318.46              | 1.6                 | 606                     | 318.99              | 4.9                 | 1,919                   |
| 318.47              | 1.6                 | 625                     | 319.00              | 5.0                 | 1,950                   |
| 318.48              | 1.7                 | 644                     | 319.01              | 5.1                 | 1,981                   |
| 318.49              | 1.7                 | 663                     | 319.02              | 5.2                 | 2,013                   |
| 318.50              | 1.8                 | 683                     | 319.03              | 5.2                 | 2,045                   |
| 318.51              | 1.8                 | 702                     | 319.04              | <b>5.3</b>          | <b>2,077</b>            |
| 318.52              | 1.9                 | 722                     |                     |                     |                         |

### Summary for Reach 3R: Proposed RRv Swale

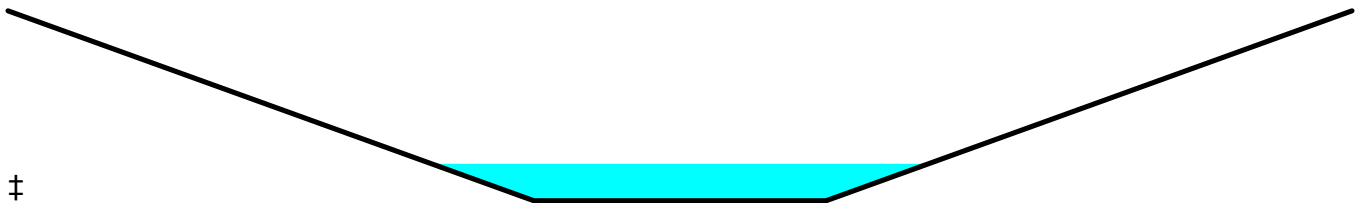
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.16' @ 12.00 hrs

Inflow Area = 0.744 ac, 40.73% Impervious, Inflow Depth = 0.33" for WQv event  
Inflow = 0.36 cfs @ 11.99 hrs, Volume= 0.020 af  
Outflow = 0.32 cfs @ 12.03 hrs, Volume= 0.020 af, Atten= 11%, Lag= 2.2 min  
Routed to Pond 3P : Proposed Stormwater Pond

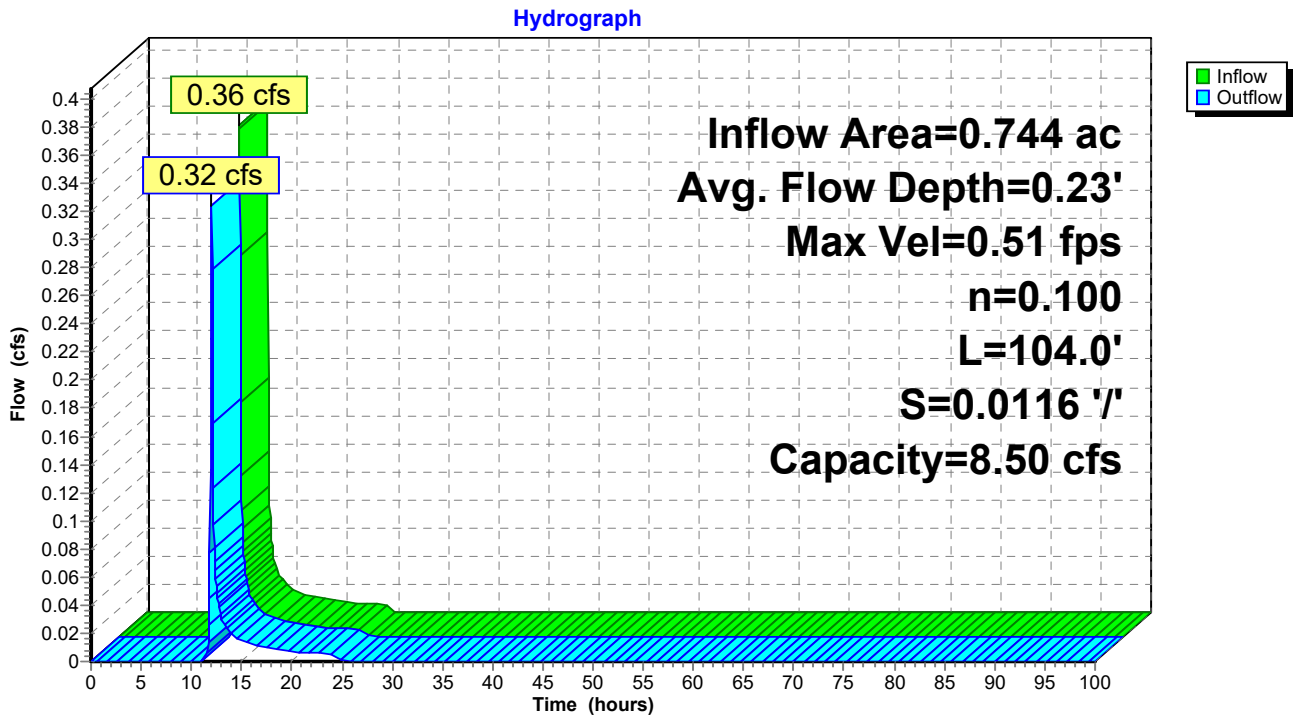
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.51 fps, Min. Travel Time= 3.4 min  
Avg. Velocity = 0.15 fps, Avg. Travel Time= 11.3 min

Peak Storage= 66 cf @ 12.03 hrs  
Average Depth at Peak Storage= 0.23' , Surface Width= 3.40'  
Bank-Full Depth= 1.20' Flow Area= 6.7 sf, Capacity= 8.50 cfs

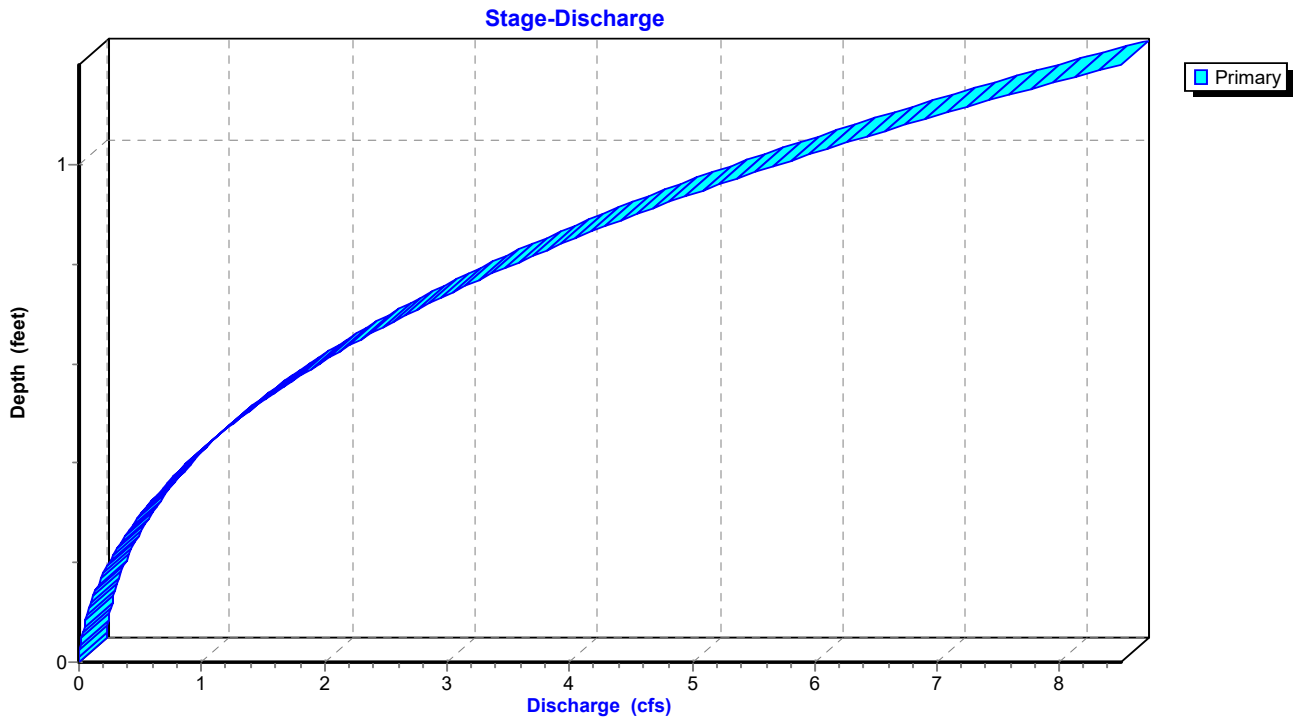
2.00' x 1.20' deep channel, n= 0.100 Earth, dense brush, high stage  
Side Slope Z-value= 3.0 '/' Top Width= 9.20'  
Length= 104.0' Slope= 0.0116 '/'  
Inlet Invert= 312.21', Outlet Invert= 311.00'



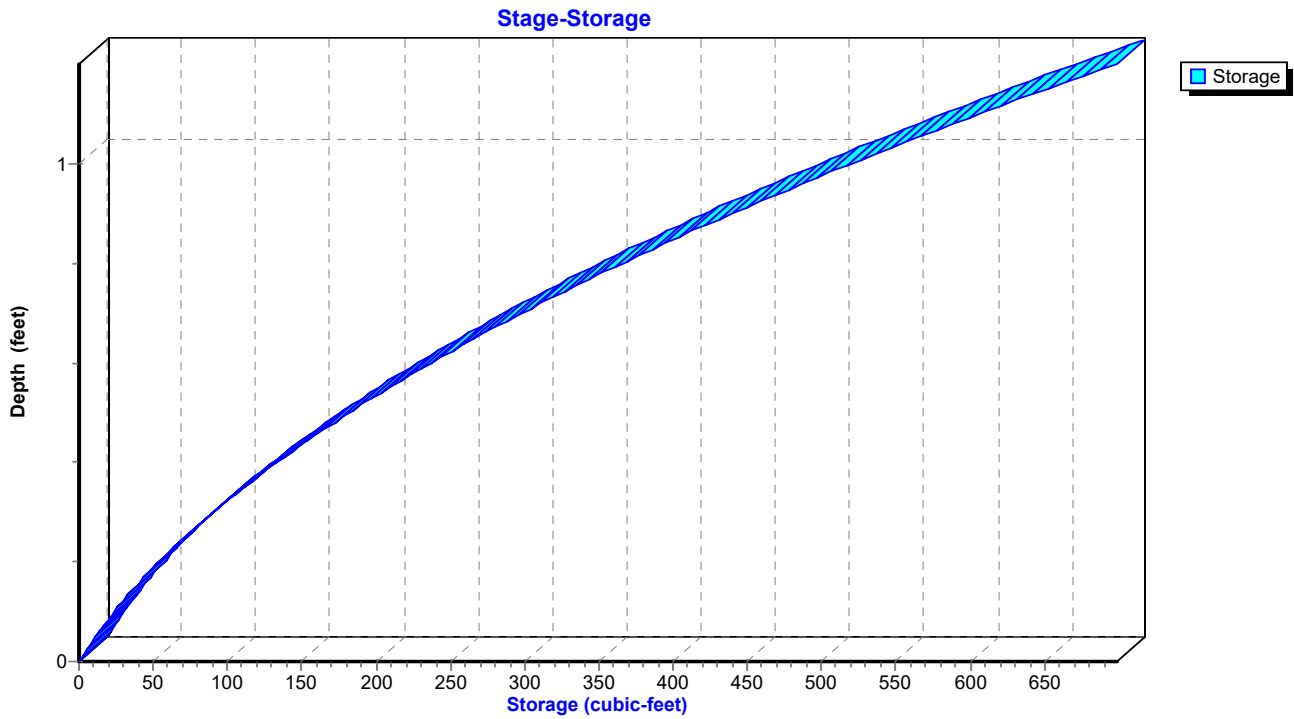
**Reach 3R: Proposed RRv Swale**



**Reach 3R: Proposed RRv Swale**



### Reach 3R: Proposed RRv Swale



**Hydrograph for Reach 3R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.21           | 0.00          |
| 7.50         | 0.00         | 0                    | 312.21           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>312.21</b>    | <b>0.00</b>   |
| 12.50        | <b>0.05</b>  | <b>20</b>            | <b>312.29</b>    | <b>0.05</b>   |
| 15.00        | 0.01         | 9                    | 312.25           | 0.01          |
| 17.50        | 0.01         | 7                    | 312.24           | 0.01          |
| 20.00        | 0.01         | 5                    | 312.24           | 0.01          |
| 22.50        | 0.01         | 5                    | 312.23           | 0.01          |
| 25.00        | 0.00         | 1                    | 312.21           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.21           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.21           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.21           | 0.00          |

**1096 Proposed Stormwater Conditions Final D Soils FarType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

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**Stage-Discharge for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.21              | 0.00                 | 0.00               | 312.74              | 0.80                 | 1.53               | 313.27              | 1.18                 | 6.47               |
| 312.22              | 0.07                 | 0.00               | 312.75              | 0.81                 | 1.59               | 313.28              | 1.19                 | 6.61               |
| 312.23              | 0.11                 | 0.00               | 312.76              | 0.82                 | 1.65               | 313.29              | 1.19                 | 6.74               |
| 312.24              | 0.15                 | 0.01               | 312.77              | 0.83                 | 1.71               | 313.30              | 1.20                 | 6.88               |
| 312.25              | 0.18                 | 0.02               | 312.78              | 0.84                 | 1.77               | 313.31              | 1.20                 | 7.02               |
| 312.26              | 0.21                 | 0.02               | 312.79              | 0.84                 | 1.83               | 313.32              | 1.21                 | 7.16               |
| 312.27              | 0.23                 | 0.03               | 312.80              | 0.85                 | 1.90               | 313.33              | 1.22                 | 7.30               |
| 312.28              | 0.25                 | 0.04               | 312.81              | 0.86                 | 1.96               | 313.34              | 1.22                 | 7.44               |
| 312.29              | 0.28                 | 0.05               | 312.82              | 0.87                 | 2.03               | 313.35              | 1.23                 | 7.59               |
| 312.30              | 0.30                 | 0.06               | 312.83              | 0.88                 | 2.10               | 313.36              | 1.23                 | 7.74               |
| 312.31              | 0.32                 | 0.07               | 312.84              | 0.88                 | 2.17               | 313.37              | 1.24                 | 7.89               |
| 312.32              | 0.33                 | 0.09               | 312.85              | 0.89                 | 2.24               | 313.38              | 1.25                 | 8.04               |
| 312.33              | 0.35                 | 0.10               | 312.86              | 0.90                 | 2.31               | 313.39              | 1.25                 | 8.19               |
| 312.34              | 0.37                 | 0.11               | 312.87              | 0.91                 | 2.38               | 313.40              | 1.26                 | 8.34               |
| 312.35              | 0.38                 | 0.13               | 312.88              | 0.91                 | 2.46               | 313.41              | <b>1.26</b>          | <b>8.50</b>        |
| 312.36              | 0.40                 | 0.15               | 312.89              | 0.92                 | 2.53               |                     |                      |                    |
| 312.37              | 0.41                 | 0.16               | 312.90              | 0.93                 | 2.61               |                     |                      |                    |
| 312.38              | 0.43                 | 0.18               | 312.91              | 0.94                 | 2.69               |                     |                      |                    |
| 312.39              | 0.44                 | 0.20               | 312.92              | 0.94                 | 2.77               |                     |                      |                    |
| 312.40              | 0.46                 | 0.22               | 312.93              | 0.95                 | 2.85               |                     |                      |                    |
| 312.41              | 0.47                 | 0.25               | 312.94              | 0.96                 | 2.93               |                     |                      |                    |
| 312.42              | 0.48                 | 0.27               | 312.95              | 0.97                 | 3.02               |                     |                      |                    |
| 312.43              | 0.50                 | 0.29               | 312.96              | 0.97                 | 3.10               |                     |                      |                    |
| 312.44              | 0.51                 | 0.32               | 312.97              | 0.98                 | 3.19               |                     |                      |                    |
| 312.45              | 0.52                 | 0.34               | 312.98              | 0.99                 | 3.28               |                     |                      |                    |
| 312.46              | 0.53                 | 0.37               | 312.99              | 0.99                 | 3.36               |                     |                      |                    |
| 312.47              | 0.55                 | 0.39               | 313.00              | 1.00                 | 3.46               |                     |                      |                    |
| 312.48              | 0.56                 | 0.42               | 313.01              | 1.01                 | 3.55               |                     |                      |                    |
| 312.49              | 0.57                 | 0.45               | 313.02              | 1.01                 | 3.64               |                     |                      |                    |
| 312.50              | 0.58                 | 0.48               | 313.03              | 1.02                 | 3.74               |                     |                      |                    |
| 312.51              | 0.59                 | 0.51               | 313.04              | 1.03                 | 3.83               |                     |                      |                    |
| 312.52              | 0.60                 | 0.55               | 313.05              | 1.04                 | 3.93               |                     |                      |                    |
| 312.53              | 0.61                 | 0.58               | 313.06              | 1.04                 | 4.03               |                     |                      |                    |
| 312.54              | 0.62                 | 0.61               | 313.07              | 1.05                 | 4.13               |                     |                      |                    |
| 312.55              | 0.63                 | 0.65               | 313.08              | 1.06                 | 4.23               |                     |                      |                    |
| 312.56              | 0.64                 | 0.69               | 313.09              | 1.06                 | 4.34               |                     |                      |                    |
| 312.57              | 0.65                 | 0.72               | 313.10              | 1.07                 | 4.44               |                     |                      |                    |
| 312.58              | 0.66                 | 0.76               | 313.11              | 1.08                 | 4.55               |                     |                      |                    |
| 312.59              | 0.67                 | 0.80               | 313.12              | 1.08                 | 4.66               |                     |                      |                    |
| 312.60              | 0.68                 | 0.84               | 313.13              | 1.09                 | 4.77               |                     |                      |                    |
| 312.61              | 0.69                 | 0.88               | 313.14              | 1.10                 | 4.88               |                     |                      |                    |
| 312.62              | 0.70                 | 0.93               | 313.15              | 1.10                 | 4.99               |                     |                      |                    |
| 312.63              | 0.71                 | 0.97               | 313.16              | 1.11                 | 5.11               |                     |                      |                    |
| 312.64              | 0.72                 | 1.02               | 313.17              | 1.12                 | 5.22               |                     |                      |                    |
| 312.65              | 0.73                 | 1.06               | 313.18              | 1.12                 | 5.34               |                     |                      |                    |
| 312.66              | 0.74                 | 1.11               | 313.19              | 1.13                 | 5.46               |                     |                      |                    |
| 312.67              | 0.74                 | 1.16               | 313.20              | 1.13                 | 5.58               |                     |                      |                    |
| 312.68              | 0.75                 | 1.21               | 313.21              | 1.14                 | 5.71               |                     |                      |                    |
| 312.69              | 0.76                 | 1.26               | 313.22              | 1.15                 | 5.83               |                     |                      |                    |
| 312.70              | 0.77                 | 1.31               | 313.23              | 1.15                 | 5.95               |                     |                      |                    |
| 312.71              | 0.78                 | 1.36               | 313.24              | 1.16                 | 6.08               |                     |                      |                    |
| 312.72              | 0.79                 | 1.42               | 313.25              | 1.17                 | 6.21               |                     |                      |                    |
| 312.73              | 0.80                 | 1.47               | 313.26              | 1.17                 | 6.34               |                     |                      |                    |

**Stage-Area-Storage for Reach 3R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.21              | 0.0                 | 0                       | 313.27              | 5.5                 | 571                     |
| 312.23              | 0.0                 | 4                       | 313.29              | 5.7                 | 589                     |
| 312.25              | 0.1                 | 9                       | 313.31              | 5.8                 | 606                     |
| 312.27              | 0.1                 | 14                      | 313.33              | 6.0                 | 624                     |
| 312.29              | 0.2                 | 19                      | 313.35              | 6.2                 | 643                     |
| 312.31              | 0.2                 | 24                      | 313.37              | 6.4                 | 661                     |
| 312.33              | 0.3                 | 29                      | 313.39              | 6.5                 | 680                     |
| 312.35              | 0.3                 | 35                      | 313.41              | <b>6.7</b>          | <b>699</b>              |
| 312.37              | 0.4                 | 41                      |                     |                     |                         |
| 312.39              | 0.5                 | 48                      |                     |                     |                         |
| 312.41              | 0.5                 | 54                      |                     |                     |                         |
| 312.43              | 0.6                 | 61                      |                     |                     |                         |
| 312.45              | 0.7                 | 68                      |                     |                     |                         |
| 312.47              | 0.7                 | 75                      |                     |                     |                         |
| 312.49              | 0.8                 | 83                      |                     |                     |                         |
| 312.51              | 0.9                 | 90                      |                     |                     |                         |
| 312.53              | 0.9                 | 99                      |                     |                     |                         |
| 312.55              | 1.0                 | 107                     |                     |                     |                         |
| 312.57              | 1.1                 | 115                     |                     |                     |                         |
| 312.59              | 1.2                 | 124                     |                     |                     |                         |
| 312.61              | 1.3                 | 133                     |                     |                     |                         |
| 312.63              | 1.4                 | 142                     |                     |                     |                         |
| 312.65              | 1.5                 | 152                     |                     |                     |                         |
| 312.67              | 1.6                 | 162                     |                     |                     |                         |
| 312.69              | 1.7                 | 172                     |                     |                     |                         |
| 312.71              | 1.8                 | 182                     |                     |                     |                         |
| 312.73              | 1.9                 | 193                     |                     |                     |                         |
| 312.75              | 2.0                 | 203                     |                     |                     |                         |
| 312.77              | 2.1                 | 214                     |                     |                     |                         |
| 312.79              | 2.2                 | 226                     |                     |                     |                         |
| 312.81              | 2.3                 | 237                     |                     |                     |                         |
| 312.83              | 2.4                 | 249                     |                     |                     |                         |
| 312.85              | 2.5                 | 261                     |                     |                     |                         |
| 312.87              | 2.6                 | 273                     |                     |                     |                         |
| 312.89              | 2.7                 | 286                     |                     |                     |                         |
| 312.91              | 2.9                 | 298                     |                     |                     |                         |
| 312.93              | 3.0                 | 312                     |                     |                     |                         |
| 312.95              | 3.1                 | 325                     |                     |                     |                         |
| 312.97              | 3.3                 | 338                     |                     |                     |                         |
| 312.99              | 3.4                 | 352                     |                     |                     |                         |
| 313.01              | 3.5                 | 366                     |                     |                     |                         |
| 313.03              | 3.7                 | 380                     |                     |                     |                         |
| 313.05              | 3.8                 | 395                     |                     |                     |                         |
| 313.07              | 3.9                 | 410                     |                     |                     |                         |
| 313.09              | 4.1                 | 425                     |                     |                     |                         |
| 313.11              | 4.2                 | 440                     |                     |                     |                         |
| 313.13              | 4.4                 | 455                     |                     |                     |                         |
| 313.15              | 4.5                 | 471                     |                     |                     |                         |
| 313.17              | 4.7                 | 487                     |                     |                     |                         |
| 313.19              | 4.8                 | 503                     |                     |                     |                         |
| 313.21              | 5.0                 | 520                     |                     |                     |                         |
| 313.23              | 5.2                 | 537                     |                     |                     |                         |
| 313.25              | 5.3                 | 554                     |                     |                     |                         |



### Summary for Reach 4R: Proposed 10" Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

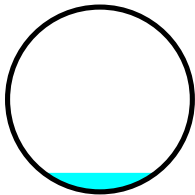
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.03' @ 12.10 hrs

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 0.22" for WQv event  
Inflow = 0.06 cfs @ 12.06 hrs, Volume= 0.004 af  
Outflow = 0.06 cfs @ 12.07 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.2 min  
Routed to Reach 3R : Proposed RRv Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 2.11 fps, Min. Travel Time= 0.3 min  
Avg. Velocity = 0.84 fps, Avg. Travel Time= 0.7 min

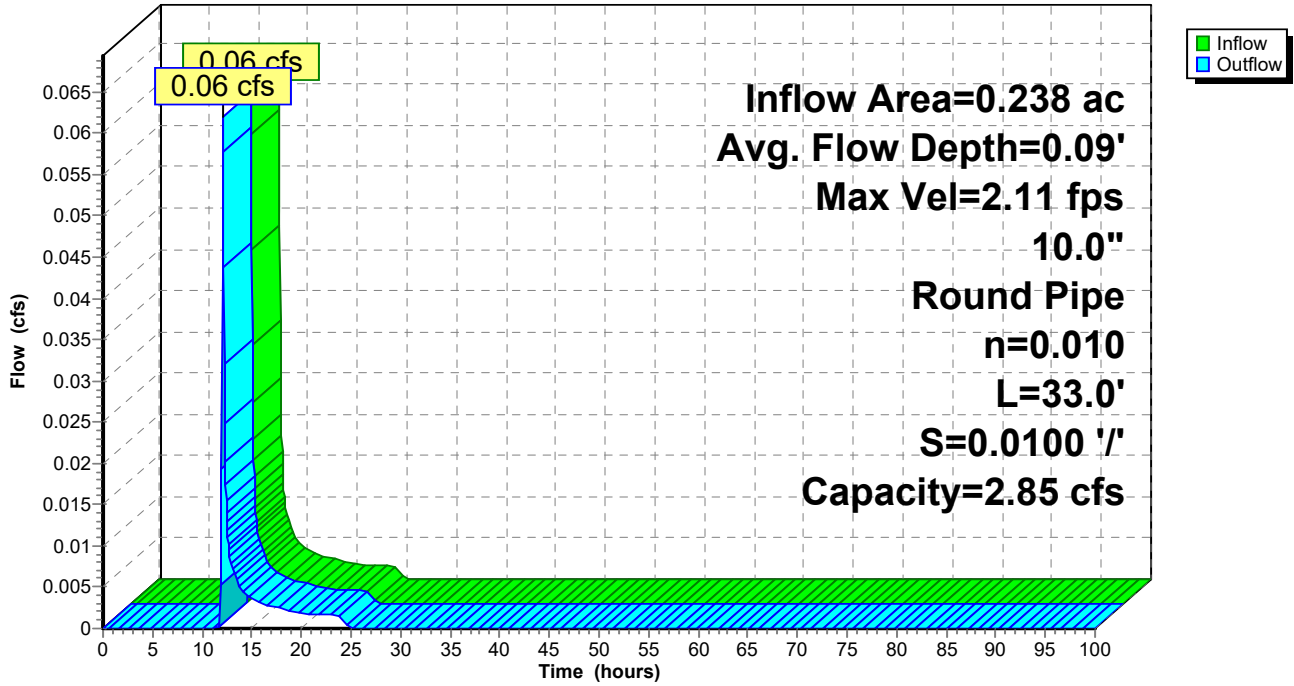
Peak Storage= 1 cf @ 12.07 hrs  
Average Depth at Peak Storage= 0.09' , Surface Width= 0.50'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.85 cfs

10.0" Round Pipe  
n= 0.010 PVC, smooth interior  
Length= 33.0' Slope= 0.0100 '/'  
Inlet Invert= 312.54', Outlet Invert= 312.21'



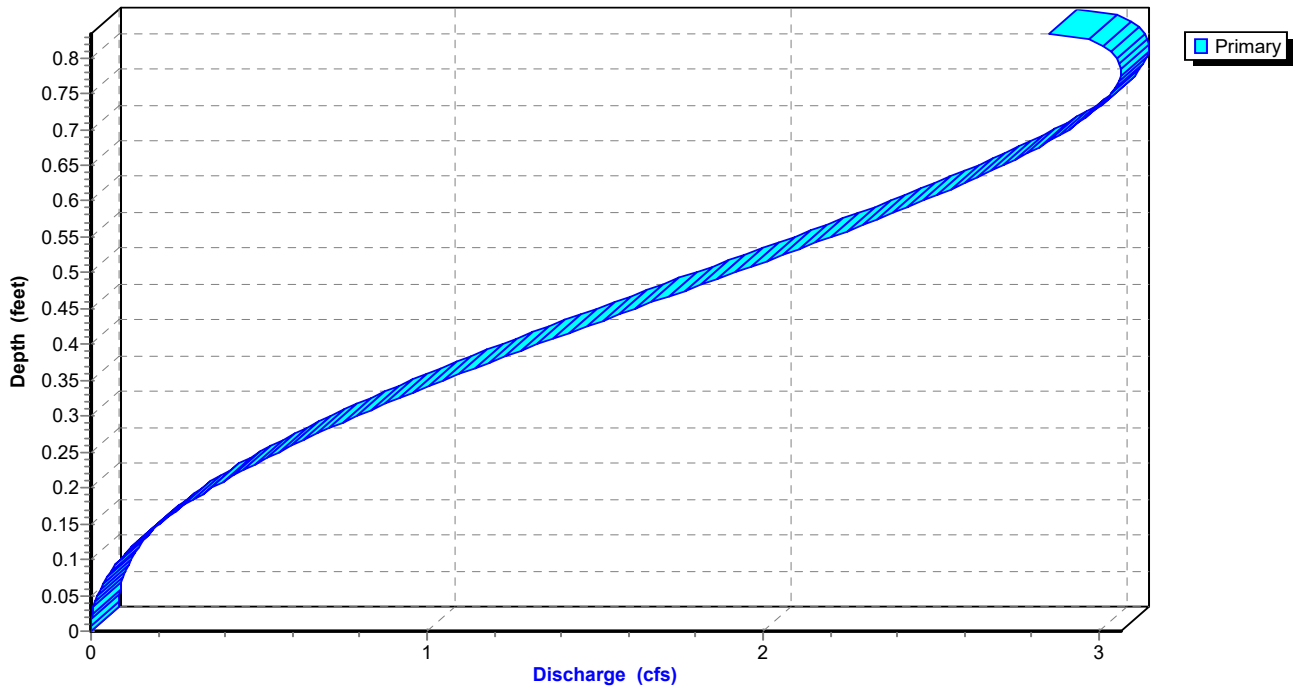
Reach 4R: Proposed 10" Culvert

Hydrograph

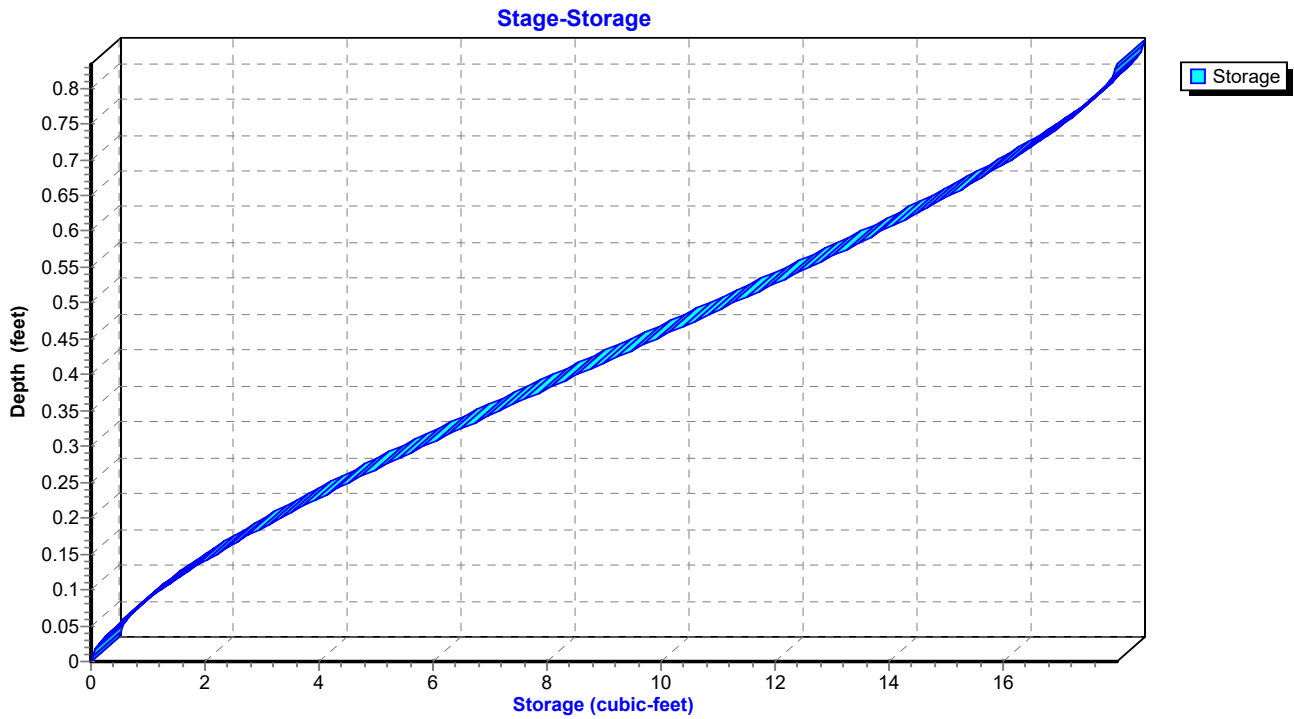


Reach 4R: Proposed 10" Culvert

Stage-Discharge



### Reach 4R: Proposed 10" Culvert



**Hydrograph for Reach 4R: Proposed 10" Culvert**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 2.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 5.00         | 0.00         | 0                    | 312.54           | 0.00          |
| 7.50         | 0.00         | 0                    | 312.54           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>312.54</b>    | <b>0.00</b>   |
| 12.50        | <b>0.01</b>  | <b>0</b>             | <b>312.58</b>    | <b>0.01</b>   |
| 15.00        | 0.00         | 0                    | 312.56           | 0.00          |
| 17.50        | 0.00         | 0                    | 312.56           | 0.00          |
| 20.00        | 0.00         | 0                    | 312.56           | 0.00          |
| 22.50        | 0.00         | 0                    | 312.56           | 0.00          |
| 25.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 27.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 30.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 32.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 35.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 37.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 40.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 42.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 45.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 47.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 50.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 52.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 55.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 57.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 60.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 62.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 65.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 67.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 70.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 72.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 75.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 77.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 80.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 82.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 85.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 87.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 90.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 92.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 95.00        | 0.00         | 0                    | 312.54           | 0.00          |
| 97.50        | 0.00         | 0                    | 312.54           | 0.00          |
| 100.00       | 0.00         | 0                    | 312.54           | 0.00          |

**Stage-Discharge for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 312.54              | 0.00                 | 0.00               | 313.07              | 5.70                 | 2.09               |
| 312.55              | 0.52                 | 0.00               | 313.08              | 5.74                 | 2.14               |
| 312.56              | 0.83                 | 0.00               | 313.09              | 5.76                 | 2.20               |
| 312.57              | 1.08                 | 0.01               | 313.10              | 5.79                 | 2.26               |
| 312.58              | 1.31                 | 0.01               | 313.11              | 5.82                 | 2.31               |
| 312.59              | 1.51                 | 0.02               | 313.12              | 5.84                 | 2.37               |
| 312.60              | 1.70                 | 0.03               | 313.13              | 5.86                 | 2.42               |
| 312.61              | 1.87                 | 0.04               | 313.14              | 5.88                 | 2.47               |
| 312.62              | 2.04                 | 0.05               | 313.15              | 5.90                 | 2.52               |
| 312.63              | 2.20                 | 0.07               | 313.16              | 5.91                 | 2.57               |
| 312.64              | 2.35                 | 0.09               | 313.17              | 5.93                 | 2.62               |
| 312.65              | 2.49                 | 0.11               | 313.18              | 5.94                 | 2.67               |
| 312.66              | 2.63                 | 0.13               | 313.19              | 5.94                 | 2.71               |
| 312.67              | 2.76                 | 0.15               | 313.20              | 5.95                 | 2.76               |
| 312.68              | 2.89                 | 0.17               | 313.21              | 5.95                 | 2.80               |
| 312.69              | 3.02                 | 0.20               | 313.22              | <b>5.95</b>          | 2.84               |
| 312.70              | 3.13                 | 0.23               | 313.23              | 5.95                 | 2.87               |
| 312.71              | 3.25                 | 0.26               | 313.24              | 5.95                 | 2.91               |
| 312.72              | 3.36                 | 0.29               | 313.25              | 5.94                 | 2.94               |
| 312.73              | 3.47                 | 0.32               | 313.26              | 5.93                 | 2.97               |
| 312.74              | 3.57                 | 0.36               | 313.27              | 5.91                 | 2.99               |
| 312.75              | 3.68                 | 0.40               | 313.28              | 5.89                 | 3.02               |
| 312.76              | 3.77                 | 0.43               | 313.29              | 5.87                 | 3.04               |
| 312.77              | 3.87                 | 0.47               | 313.30              | 5.84                 | 3.05               |
| 312.78              | 3.96                 | 0.52               | 313.31              | 5.81                 | 3.06               |
| 312.79              | 4.05                 | 0.56               | 313.32              | 5.77                 | <b>3.06</b>        |
| 312.80              | 4.14                 | 0.60               | 313.33              | 5.73                 | 3.06               |
| 312.81              | 4.23                 | 0.65               | 313.34              | 5.67                 | 3.05               |
| 312.82              | 4.31                 | 0.69               | 313.35              | 5.60                 | 3.03               |
| 312.83              | 4.39                 | 0.74               | 313.36              | 5.51                 | 2.99               |
| 312.84              | 4.47                 | 0.79               | 313.37              | 5.31                 | 2.90               |
| 312.85              | 4.54                 | 0.84               |                     |                      |                    |
| 312.86              | 4.62                 | 0.89               |                     |                      |                    |
| 312.87              | 4.69                 | 0.94               |                     |                      |                    |
| 312.88              | 4.76                 | 1.00               |                     |                      |                    |
| 312.89              | 4.82                 | 1.05               |                     |                      |                    |
| 312.90              | 4.89                 | 1.10               |                     |                      |                    |
| 312.91              | 4.95                 | 1.16               |                     |                      |                    |
| 312.92              | 5.01                 | 1.21               |                     |                      |                    |
| 312.93              | 5.07                 | 1.27               |                     |                      |                    |
| 312.94              | 5.13                 | 1.33               |                     |                      |                    |
| 312.95              | 5.19                 | 1.39               |                     |                      |                    |
| 312.96              | 5.24                 | 1.44               |                     |                      |                    |
| 312.97              | 5.29                 | 1.50               |                     |                      |                    |
| 312.98              | 5.34                 | 1.56               |                     |                      |                    |
| 312.99              | 5.39                 | 1.62               |                     |                      |                    |
| 313.00              | 5.43                 | 1.68               |                     |                      |                    |
| 313.01              | 5.48                 | 1.74               |                     |                      |                    |
| 313.02              | 5.52                 | 1.80               |                     |                      |                    |
| 313.03              | 5.56                 | 1.85               |                     |                      |                    |
| 313.04              | 5.60                 | 1.91               |                     |                      |                    |
| 313.05              | 5.64                 | 1.97               |                     |                      |                    |
| 313.06              | 5.67                 | 2.03               |                     |                      |                    |

**Stage-Area-Storage for Reach 4R: Proposed 10" Culvert**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 312.54              | 0.0                 | 0                       | 313.07              | 0.4                 | 12                      |
| 312.55              | 0.0                 | 0                       | 313.08              | 0.4                 | 12                      |
| 312.56              | 0.0                 | 0                       | 313.09              | 0.4                 | 13                      |
| 312.57              | 0.0                 | 0                       | 313.10              | 0.4                 | 13                      |
| 312.58              | 0.0                 | 0                       | 313.11              | 0.4                 | 13                      |
| 312.59              | 0.0                 | 0                       | 313.12              | 0.4                 | 13                      |
| 312.60              | 0.0                 | 1                       | 313.13              | 0.4                 | 14                      |
| 312.61              | 0.0                 | 1                       | 313.14              | 0.4                 | 14                      |
| 312.62              | 0.0                 | 1                       | 313.15              | 0.4                 | 14                      |
| 312.63              | 0.0                 | 1                       | 313.16              | 0.4                 | 14                      |
| 312.64              | 0.0                 | 1                       | 313.17              | 0.4                 | 15                      |
| 312.65              | 0.0                 | 1                       | 313.18              | 0.4                 | 15                      |
| 312.66              | 0.0                 | 2                       | 313.19              | 0.5                 | 15                      |
| 312.67              | 0.1                 | 2                       | 313.20              | 0.5                 | 15                      |
| 312.68              | 0.1                 | 2                       | 313.21              | 0.5                 | 16                      |
| 312.69              | 0.1                 | 2                       | 313.22              | 0.5                 | 16                      |
| 312.70              | 0.1                 | 2                       | 313.23              | 0.5                 | 16                      |
| 312.71              | 0.1                 | 3                       | 313.24              | 0.5                 | 16                      |
| 312.72              | 0.1                 | 3                       | 313.25              | 0.5                 | 16                      |
| 312.73              | 0.1                 | 3                       | 313.26              | 0.5                 | 17                      |
| 312.74              | 0.1                 | 3                       | 313.27              | 0.5                 | 17                      |
| 312.75              | 0.1                 | 4                       | 313.28              | 0.5                 | 17                      |
| 312.76              | 0.1                 | 4                       | 313.29              | 0.5                 | 17                      |
| 312.77              | 0.1                 | 4                       | 313.30              | 0.5                 | 17                      |
| 312.78              | 0.1                 | 4                       | 313.31              | 0.5                 | 17                      |
| 312.79              | 0.1                 | 5                       | 313.32              | 0.5                 | 18                      |
| 312.80              | 0.1                 | 5                       | 313.33              | 0.5                 | 18                      |
| 312.81              | 0.2                 | 5                       | 313.34              | 0.5                 | 18                      |
| 312.82              | 0.2                 | 5                       | 313.35              | 0.5                 | 18                      |
| 312.83              | 0.2                 | 6                       | 313.36              | 0.5                 | 18                      |
| 312.84              | 0.2                 | 6                       | 313.37              | <b>0.5</b>          | <b>18</b>               |
| 312.85              | 0.2                 | 6                       |                     |                     |                         |
| 312.86              | 0.2                 | 6                       |                     |                     |                         |
| 312.87              | 0.2                 | 7                       |                     |                     |                         |
| 312.88              | 0.2                 | 7                       |                     |                     |                         |
| 312.89              | 0.2                 | 7                       |                     |                     |                         |
| 312.90              | 0.2                 | 7                       |                     |                     |                         |
| 312.91              | 0.2                 | 8                       |                     |                     |                         |
| 312.92              | 0.2                 | 8                       |                     |                     |                         |
| 312.93              | 0.3                 | 8                       |                     |                     |                         |
| 312.94              | 0.3                 | 9                       |                     |                     |                         |
| 312.95              | 0.3                 | 9                       |                     |                     |                         |
| 312.96              | 0.3                 | 9                       |                     |                     |                         |
| 312.97              | 0.3                 | 9                       |                     |                     |                         |
| 312.98              | 0.3                 | 10                      |                     |                     |                         |
| 312.99              | 0.3                 | 10                      |                     |                     |                         |
| 313.00              | 0.3                 | 10                      |                     |                     |                         |
| 313.01              | 0.3                 | 10                      |                     |                     |                         |
| 313.02              | 0.3                 | 11                      |                     |                     |                         |
| 313.03              | 0.3                 | 11                      |                     |                     |                         |
| 313.04              | 0.3                 | 11                      |                     |                     |                         |
| 313.05              | 0.3                 | 12                      |                     |                     |                         |
| 313.06              | 0.4                 | 12                      |                     |                     |                         |

**Summary for Reach 5R: Proposed RRv Swale**

Inflow Area = 0.238 ac, 26.47% Impervious, Inflow Depth = 0.22" for WQv event  
 Inflow = 0.07 cfs @ 12.01 hrs, Volume= 0.004 af  
 Outflow = 0.06 cfs @ 12.06 hrs, Volume= 0.004 af, Atten= 17%, Lag= 3.1 min  
 Routed to Reach 4R : Proposed 10" Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.48 fps, Min. Travel Time= 4.7 min  
 Avg. Velocity = 0.16 fps, Avg. Travel Time= 14.4 min

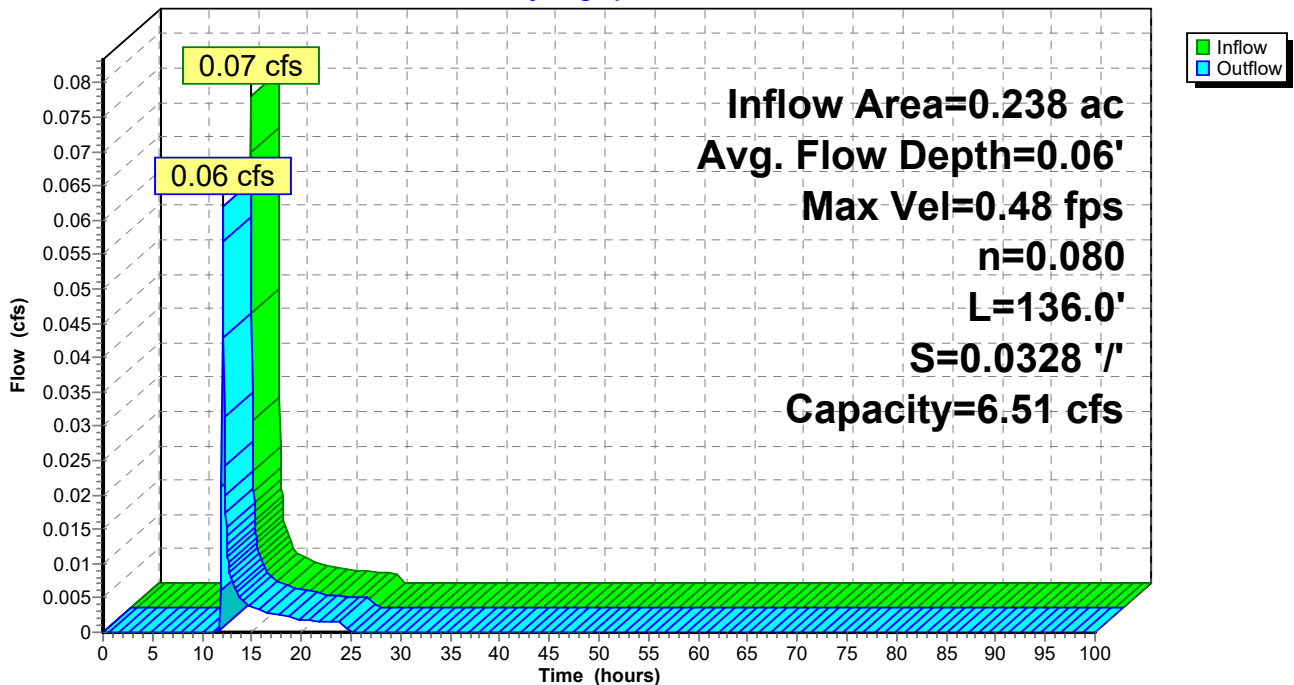
Peak Storage= 17 cf @ 12.06 hrs  
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.35'  
 Bank-Full Depth= 0.75' Flow Area= 3.2 sf, Capacity= 6.51 cfs

2.00' x 0.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 6.50'  
 Length= 136.0' Slope= 0.0328 '/  
 Inlet Invert= 317.00', Outlet Invert= 312.54'

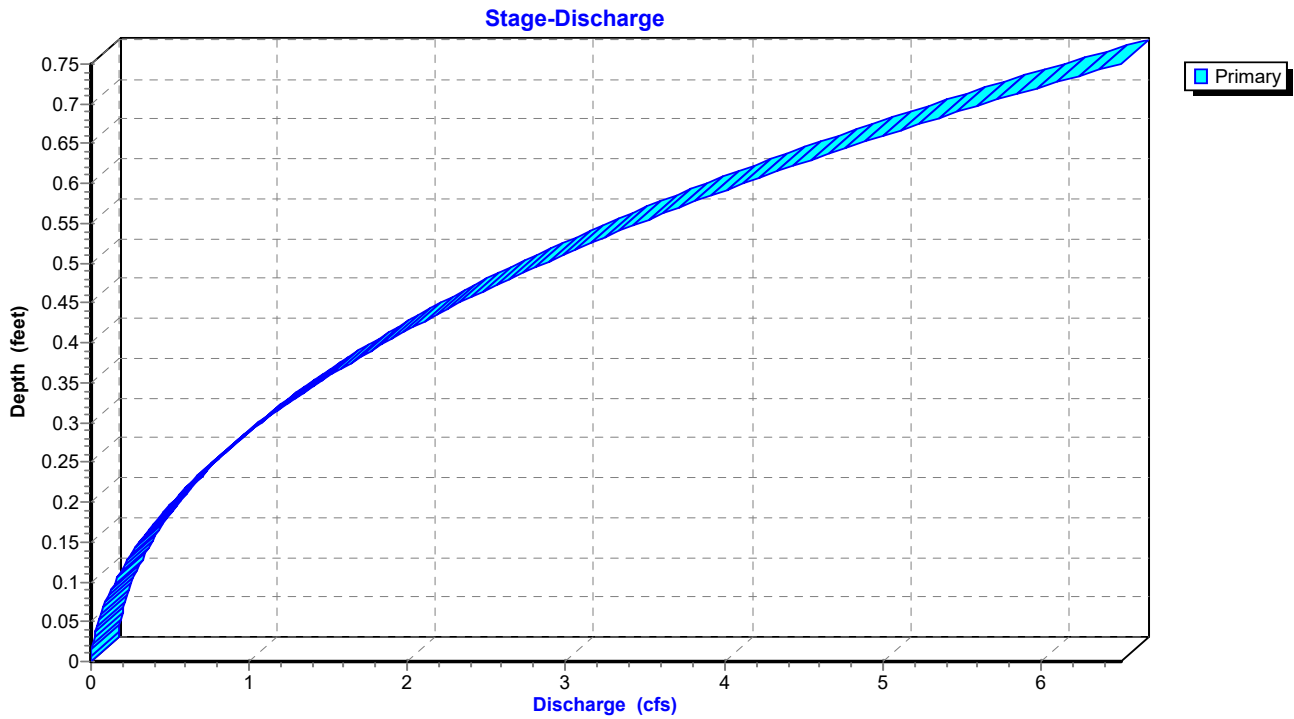


**Reach 5R: Proposed RRv Swale**

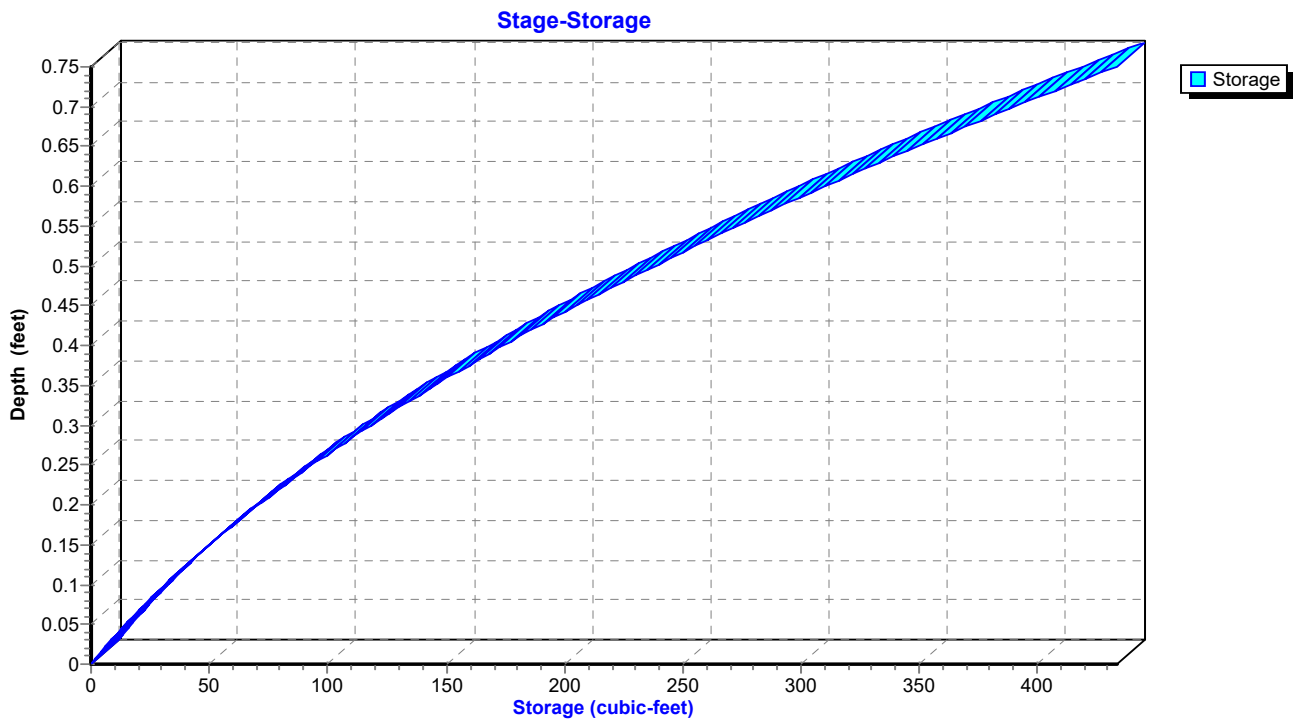
Hydrograph



### Reach 5R: Proposed RRv Swale



### Reach 5R: Proposed RRv Swale





**Hydrograph for Reach 5R: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 317.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 317.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>317.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.01</b>  | <b>6</b>             | <b>317.02</b>    | <b>0.01</b>   |
| 15.00        | 0.00         | 3                    | 317.01           | 0.00          |
| 17.50        | 0.00         | 2                    | 317.01           | 0.00          |
| 20.00        | 0.00         | 2                    | 317.01           | 0.00          |
| 22.50        | 0.00         | 2                    | 317.01           | 0.00          |
| 25.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 27.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 317.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 317.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 317.00           | 0.00          |

**Stage-Discharge for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 317.00              | 0.00                 | 0.00               | 317.53              | 1.69                 | 3.21               |
| 317.01              | 0.15                 | 0.00               | 317.54              | 1.71                 | 3.33               |
| 317.02              | 0.24                 | 0.01               | 317.55              | 1.72                 | 3.46               |
| 317.03              | 0.31                 | 0.02               | 317.56              | 1.74                 | 3.58               |
| 317.04              | 0.38                 | 0.03               | 317.57              | 1.76                 | 3.71               |
| 317.05              | 0.43                 | 0.05               | 317.58              | 1.77                 | 3.85               |
| 317.06              | 0.49                 | 0.06               | 317.59              | 1.79                 | 3.98               |
| 317.07              | 0.53                 | 0.08               | 317.60              | 1.81                 | 4.12               |
| 317.08              | 0.58                 | 0.10               | 317.61              | 1.82                 | 4.26               |
| 317.09              | 0.62                 | 0.13               | 317.62              | 1.84                 | 4.40               |
| 317.10              | 0.66                 | 0.15               | 317.63              | 1.85                 | 4.55               |
| 317.11              | 0.70                 | 0.18               | 317.64              | 1.87                 | 4.69               |
| 317.12              | 0.74                 | 0.21               | 317.65              | 1.89                 | 4.84               |
| 317.13              | 0.77                 | 0.24               | 317.66              | 1.90                 | 5.00               |
| 317.14              | 0.81                 | 0.27               | 317.67              | 1.92                 | 5.15               |
| 317.15              | 0.84                 | 0.31               | 317.68              | 1.93                 | 5.31               |
| 317.16              | 0.87                 | 0.35               | 317.69              | 1.95                 | 5.48               |
| 317.17              | 0.90                 | 0.38               | 317.70              | 1.97                 | 5.64               |
| 317.18              | 0.93                 | 0.43               | 317.71              | 1.98                 | 5.81               |
| 317.19              | 0.96                 | 0.47               | 317.72              | 2.00                 | 5.98               |
| 317.20              | 0.99                 | 0.51               | 317.73              | 2.01                 | 6.15               |
| 317.21              | 1.02                 | 0.56               | 317.74              | 2.03                 | 6.33               |
| 317.22              | 1.04                 | 0.61               | 317.75              | <b>2.04</b>          | <b>6.51</b>        |
| 317.23              | 1.07                 | 0.66               |                     |                      |                    |
| 317.24              | 1.09                 | 0.71               |                     |                      |                    |
| 317.25              | 1.12                 | 0.77               |                     |                      |                    |
| 317.26              | 1.14                 | 0.83               |                     |                      |                    |
| 317.27              | 1.17                 | 0.89               |                     |                      |                    |
| 317.28              | 1.19                 | 0.95               |                     |                      |                    |
| 317.29              | 1.21                 | 1.01               |                     |                      |                    |
| 317.30              | 1.24                 | 1.08               |                     |                      |                    |
| 317.31              | 1.26                 | 1.14               |                     |                      |                    |
| 317.32              | 1.28                 | 1.21               |                     |                      |                    |
| 317.33              | 1.30                 | 1.29               |                     |                      |                    |
| 317.34              | 1.33                 | 1.36               |                     |                      |                    |
| 317.35              | 1.35                 | 1.44               |                     |                      |                    |
| 317.36              | 1.37                 | 1.52               |                     |                      |                    |
| 317.37              | 1.39                 | 1.60               |                     |                      |                    |
| 317.38              | 1.41                 | 1.68               |                     |                      |                    |
| 317.39              | 1.43                 | 1.77               |                     |                      |                    |
| 317.40              | 1.45                 | 1.85               |                     |                      |                    |
| 317.41              | 1.47                 | 1.94               |                     |                      |                    |
| 317.42              | 1.49                 | 2.04               |                     |                      |                    |
| 317.43              | 1.51                 | 2.13               |                     |                      |                    |
| 317.44              | 1.53                 | 2.23               |                     |                      |                    |
| 317.45              | 1.54                 | 2.33               |                     |                      |                    |
| 317.46              | 1.56                 | 2.43               |                     |                      |                    |
| 317.47              | 1.58                 | 2.53               |                     |                      |                    |
| 317.48              | 1.60                 | 2.64               |                     |                      |                    |
| 317.49              | 1.62                 | 2.75               |                     |                      |                    |
| 317.50              | 1.64                 | 2.86               |                     |                      |                    |
| 317.51              | 1.65                 | 2.98               |                     |                      |                    |
| 317.52              | 1.67                 | 3.09               |                     |                      |                    |

**Stage-Area-Storage for Reach 5R: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 317.00              | 0.0                 | 0                       | 317.53              | 1.9                 | 259                     |
| 317.01              | 0.0                 | 3                       | 317.54              | 2.0                 | 266                     |
| 317.02              | 0.0                 | 6                       | 317.55              | 2.0                 | 273                     |
| 317.03              | 0.1                 | 9                       | 317.56              | 2.1                 | 280                     |
| 317.04              | 0.1                 | 12                      | 317.57              | 2.1                 | 288                     |
| 317.05              | 0.1                 | 15                      | 317.58              | 2.2                 | 295                     |
| 317.06              | 0.1                 | 18                      | 317.59              | 2.2                 | 303                     |
| 317.07              | 0.2                 | 21                      | 317.60              | 2.3                 | 310                     |
| 317.08              | 0.2                 | 24                      | 317.61              | 2.3                 | 318                     |
| 317.09              | 0.2                 | 28                      | 317.62              | 2.4                 | 325                     |
| 317.10              | 0.2                 | 31                      | 317.63              | 2.5                 | 333                     |
| 317.11              | 0.3                 | 35                      | 317.64              | 2.5                 | 341                     |
| 317.12              | 0.3                 | 39                      | 317.65              | 2.6                 | 349                     |
| 317.13              | 0.3                 | 42                      | 317.66              | 2.6                 | 357                     |
| 317.14              | 0.3                 | 46                      | 317.67              | 2.7                 | 365                     |
| 317.15              | 0.4                 | 50                      | 317.68              | 2.7                 | 374                     |
| 317.16              | 0.4                 | 54                      | 317.69              | 2.8                 | 382                     |
| 317.17              | 0.4                 | 58                      | 317.70              | 2.9                 | 390                     |
| 317.18              | 0.5                 | 62                      | 317.71              | 2.9                 | 399                     |
| 317.19              | 0.5                 | 66                      | 317.72              | 3.0                 | 407                     |
| 317.20              | 0.5                 | 71                      | 317.73              | 3.1                 | 416                     |
| 317.21              | 0.6                 | 75                      | 317.74              | 3.1                 | 425                     |
| 317.22              | 0.6                 | 80                      | 317.75              | <b>3.2</b>          | <b>434</b>              |
| 317.23              | 0.6                 | 84                      |                     |                     |                         |
| 317.24              | 0.7                 | 89                      |                     |                     |                         |
| 317.25              | 0.7                 | 94                      |                     |                     |                         |
| 317.26              | 0.7                 | 98                      |                     |                     |                         |
| 317.27              | 0.8                 | 103                     |                     |                     |                         |
| 317.28              | 0.8                 | 108                     |                     |                     |                         |
| 317.29              | 0.8                 | 113                     |                     |                     |                         |
| 317.30              | 0.9                 | 118                     |                     |                     |                         |
| 317.31              | 0.9                 | 124                     |                     |                     |                         |
| 317.32              | 0.9                 | 129                     |                     |                     |                         |
| 317.33              | 1.0                 | 134                     |                     |                     |                         |
| 317.34              | 1.0                 | 140                     |                     |                     |                         |
| 317.35              | 1.1                 | 145                     |                     |                     |                         |
| 317.36              | 1.1                 | 151                     |                     |                     |                         |
| 317.37              | 1.2                 | 157                     |                     |                     |                         |
| 317.38              | 1.2                 | 162                     |                     |                     |                         |
| 317.39              | 1.2                 | 168                     |                     |                     |                         |
| 317.40              | 1.3                 | 174                     |                     |                     |                         |
| 317.41              | 1.3                 | 180                     |                     |                     |                         |
| 317.42              | 1.4                 | 186                     |                     |                     |                         |
| 317.43              | 1.4                 | 192                     |                     |                     |                         |
| 317.44              | 1.5                 | 199                     |                     |                     |                         |
| 317.45              | 1.5                 | 205                     |                     |                     |                         |
| 317.46              | 1.6                 | 211                     |                     |                     |                         |
| 317.47              | 1.6                 | 218                     |                     |                     |                         |
| 317.48              | 1.7                 | 225                     |                     |                     |                         |
| 317.49              | 1.7                 | 231                     |                     |                     |                         |
| 317.50              | 1.8                 | 238                     |                     |                     |                         |
| 317.51              | 1.8                 | 245                     |                     |                     |                         |
| 317.52              | 1.9                 | 252                     |                     |                     |                         |

### Summary for Reach 6R: 12" Culvert Pond Discharge

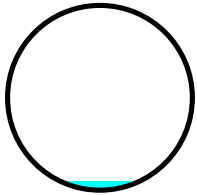
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth > 0.26" for WQv event  
Inflow = 0.02 cfs @ 18.90 hrs, Volume= 0.033 af  
Outflow = 0.02 cfs @ 18.91 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.2 min  
Routed to Pond 2ST : Existing Sediment Trap

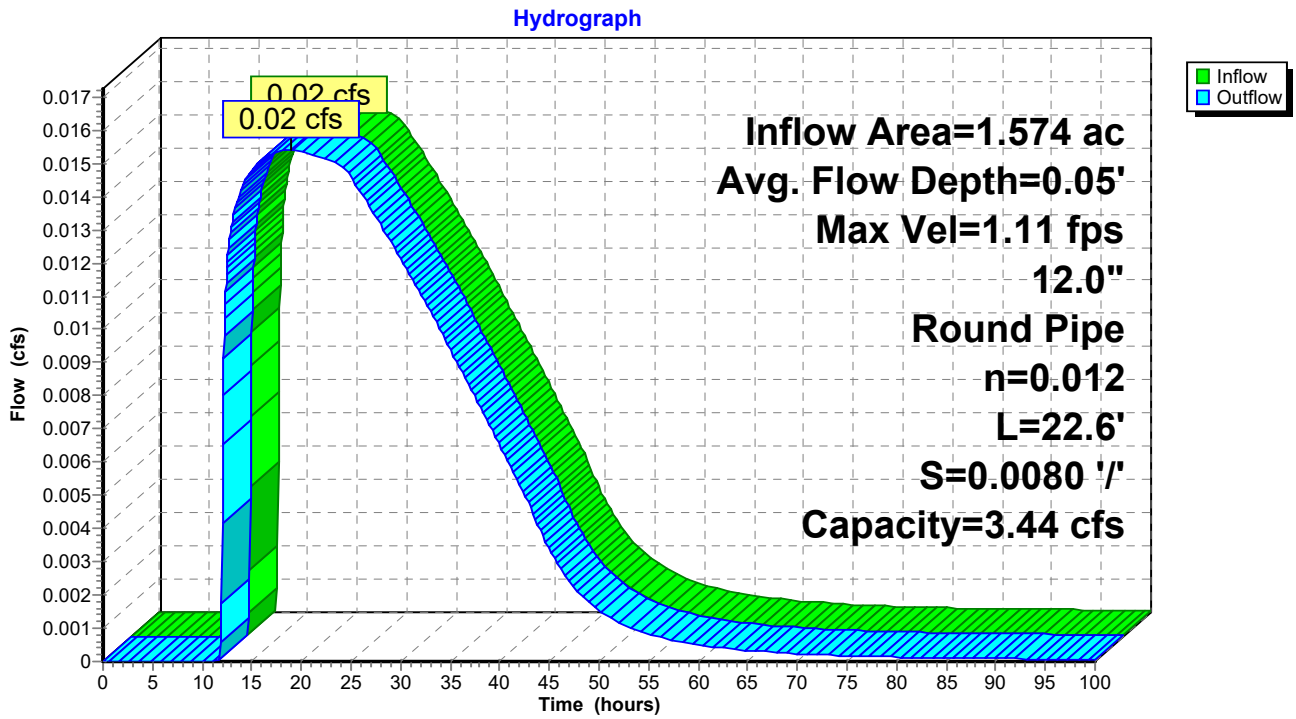
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 1.11 fps, Min. Travel Time= 0.3 min  
Avg. Velocity = 0.64 fps, Avg. Travel Time= 0.6 min

Peak Storage= 0 cf @ 18.91 hrs  
Average Depth at Peak Storage= 0.05' , Surface Width= 0.43'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.44 cfs

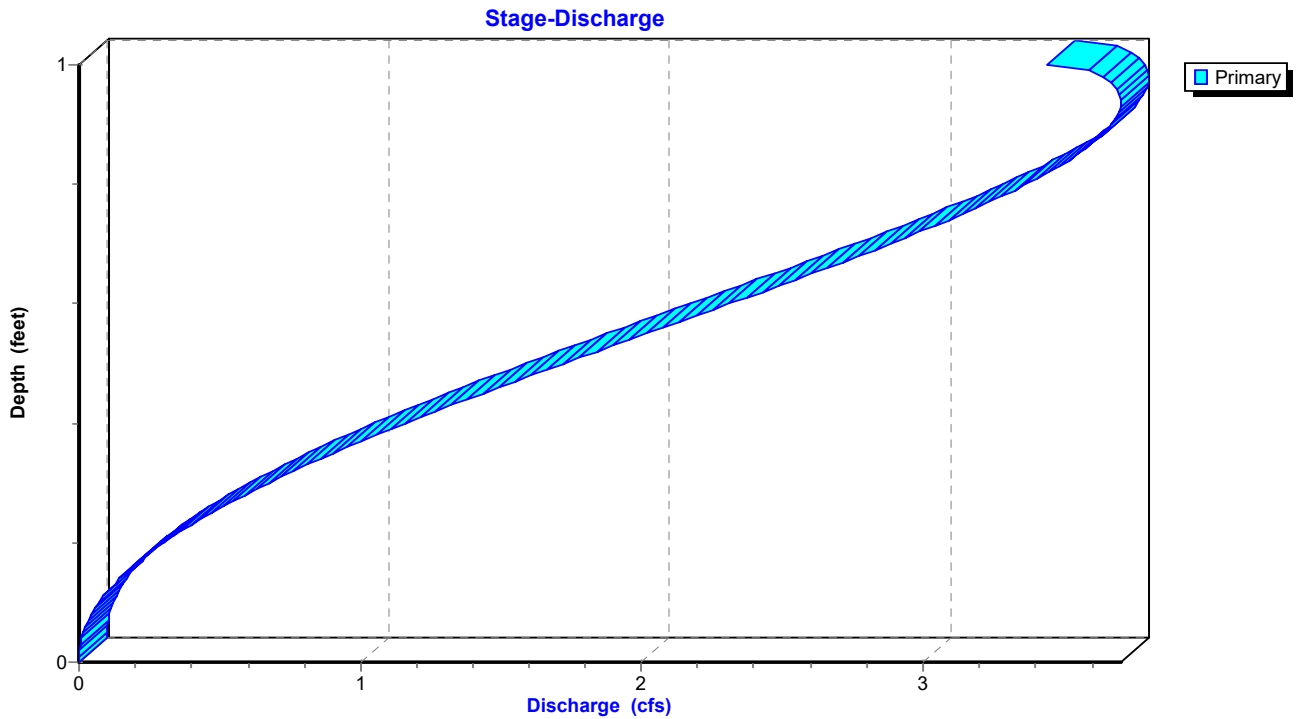
12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 22.6' Slope= 0.0080 '/'  
Inlet Invert= 309.83', Outlet Invert= 309.65'



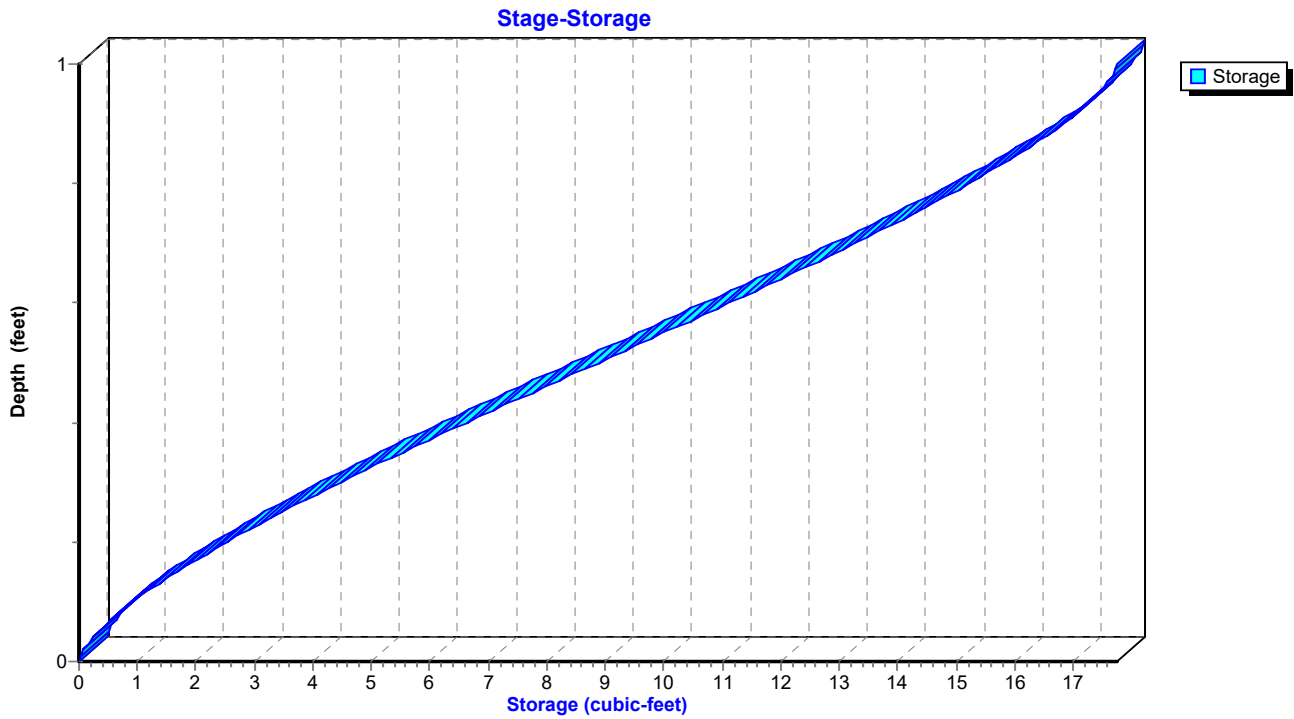
Reach 6R: 12" Culvert Pond Discharge



Reach 6R: 12" Culvert Pond Discharge



### Reach 6R: 12" Culvert Pond Discharge



**Hydrograph for Reach 6R: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 2.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 5.00         | 0.00         | 0                    | 309.83           | 0.00          |
| 7.50         | 0.00         | 0                    | 309.83           | 0.00          |
| 10.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 12.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 15.00        | 0.01         | 0                    | 309.88           | 0.01          |
| 17.50        | <b>0.02</b>  | <b>0</b>             | <b>309.88</b>    | <b>0.02</b>   |
| 20.00        | <b>0.02</b>  | <b>0</b>             | <b>309.88</b>    | <b>0.02</b>   |
| 22.50        | 0.02         | 0                    | 309.88           | 0.02          |
| 25.00        | 0.01         | 0                    | 309.88           | 0.01          |
| 27.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 30.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 32.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 35.00        | 0.01         | 0                    | 309.87           | 0.01          |
| 37.50        | 0.01         | 0                    | 309.87           | 0.01          |
| 40.00        | 0.01         | 0                    | 309.86           | 0.01          |
| 42.50        | 0.01         | 0                    | 309.86           | 0.01          |
| 45.00        | 0.00         | 0                    | 309.85           | 0.00          |
| 47.50        | 0.00         | 0                    | 309.85           | 0.00          |
| 50.00        | 0.00         | 0                    | 309.85           | 0.00          |
| 52.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 55.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 57.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 60.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 62.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 65.00        | 0.00         | 0                    | 309.84           | 0.00          |
| 67.50        | 0.00         | 0                    | 309.84           | 0.00          |
| 70.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 72.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 75.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 77.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 80.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 82.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 85.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 87.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 90.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 92.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 95.00        | 0.00         | 0                    | 309.83           | 0.00          |
| 97.50        | 0.00         | 0                    | 309.83           | 0.00          |
| 100.00       | 0.00         | 0                    | 309.83           | 0.00          |

**Stage-Discharge for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 309.83              | 0.00                 | 0.00               | 310.36              | 4.49                 | 1.90               |
| 309.84              | 0.39                 | 0.00               | 310.37              | 4.53                 | 1.96               |
| 309.85              | 0.62                 | 0.00               | 310.38              | 4.56                 | 2.02               |
| 309.86              | 0.81                 | 0.01               | 310.39              | 4.59                 | 2.08               |
| 309.87              | 0.97                 | 0.01               | 310.40              | 4.62                 | 2.14               |
| 309.88              | 1.13                 | 0.02               | 310.41              | 4.65                 | 2.20               |
| 309.89              | 1.27                 | 0.02               | 310.42              | 4.68                 | 2.26               |
| 309.90              | 1.40                 | 0.03               | 310.43              | 4.70                 | 2.31               |
| 309.91              | 1.53                 | 0.04               | 310.44              | 4.73                 | 2.37               |
| 309.92              | 1.65                 | 0.06               | 310.45              | 4.75                 | 2.43               |
| 309.93              | 1.76                 | 0.07               | 310.46              | 4.78                 | 2.49               |
| 309.94              | 1.87                 | 0.09               | 310.47              | 4.80                 | 2.55               |
| 309.95              | 1.97                 | 0.11               | 310.48              | 4.82                 | 2.61               |
| 309.96              | 2.07                 | 0.12               | 310.49              | 4.84                 | 2.66               |
| 309.97              | 2.17                 | 0.15               | 310.50              | 4.86                 | 2.72               |
| 309.98              | 2.27                 | 0.17               | 310.51              | 4.88                 | 2.77               |
| 309.99              | 2.36                 | 0.19               | 310.52              | 4.90                 | 2.83               |
| 310.00              | 2.45                 | 0.22               | 310.53              | 4.91                 | 2.88               |
| 310.01              | 2.53                 | 0.24               | 310.54              | 4.93                 | 2.94               |
| 310.02              | 2.62                 | 0.27               | 310.55              | 4.94                 | 2.99               |
| 310.03              | 2.70                 | 0.30               | 310.56              | 4.95                 | 3.04               |
| 310.04              | 2.78                 | 0.33               | 310.57              | 4.96                 | 3.09               |
| 310.05              | 2.85                 | 0.37               | 310.58              | 4.97                 | 3.14               |
| 310.06              | 2.93                 | 0.40               | 310.59              | 4.98                 | 3.19               |
| 310.07              | 3.00                 | 0.44               | 310.60              | 4.99                 | 3.24               |
| 310.08              | 3.07                 | 0.47               | 310.61              | 4.99                 | 3.28               |
| 310.09              | 3.14                 | 0.51               | 310.62              | 5.00                 | 3.32               |
| 310.10              | 3.21                 | 0.55               | 310.63              | 5.00                 | 3.37               |
| 310.11              | 3.28                 | 0.59               | 310.64              | <b>5.00</b>          | 3.41               |
| 310.12              | 3.34                 | 0.63               | 310.65              | 5.00                 | 3.45               |
| 310.13              | 3.40                 | 0.67               | 310.66              | 5.00                 | 3.48               |
| 310.14              | 3.47                 | 0.72               | 310.67              | 4.99                 | 3.52               |
| 310.15              | 3.53                 | 0.76               | 310.68              | 4.99                 | 3.55               |
| 310.16              | 3.58                 | 0.81               | 310.69              | 4.98                 | 3.58               |
| 310.17              | 3.64                 | 0.86               | 310.70              | 4.97                 | 3.61               |
| 310.18              | 3.70                 | 0.91               | 310.71              | 4.96                 | 3.63               |
| 310.19              | 3.75                 | 0.95               | 310.72              | 4.95                 | 3.65               |
| 310.20              | 3.80                 | 1.01               | 310.73              | 4.93                 | 3.67               |
| 310.21              | 3.86                 | 1.06               | 310.74              | 4.91                 | 3.69               |
| 310.22              | 3.91                 | 1.11               | 310.75              | 4.89                 | 3.70               |
| 310.23              | 3.96                 | 1.16               | 310.76              | 4.87                 | 3.70               |
| 310.24              | 4.00                 | 1.21               | 310.77              | 4.84                 | <b>3.71</b>        |
| 310.25              | 4.05                 | 1.27               | 310.78              | 4.80                 | 3.70               |
| 310.26              | 4.10                 | 1.32               | 310.79              | 4.76                 | 3.69               |
| 310.27              | 4.14                 | 1.38               | 310.80              | 4.72                 | 3.67               |
| 310.28              | 4.19                 | 1.43               | 310.81              | 4.66                 | 3.64               |
| 310.29              | 4.23                 | 1.49               | 310.82              | 4.58                 | 3.59               |
| 310.30              | 4.27                 | 1.55               | 310.83              | 4.39                 | 3.44               |
| 310.31              | 4.31                 | 1.61               |                     |                      |                    |
| 310.32              | 4.35                 | 1.66               |                     |                      |                    |
| 310.33              | 4.39                 | 1.72               |                     |                      |                    |
| 310.34              | 4.42                 | 1.78               |                     |                      |                    |
| 310.35              | 4.46                 | 1.84               |                     |                      |                    |



**Stage-Area-Storage for Reach 6R: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 309.83              | 0.0                 | 0                       | 310.36              | 0.4                 | 10                      |
| 309.84              | 0.0                 | 0                       | 310.37              | 0.4                 | 10                      |
| 309.85              | 0.0                 | 0                       | 310.38              | 0.4                 | 10                      |
| 309.86              | 0.0                 | 0                       | 310.39              | 0.5                 | 10                      |
| 309.87              | 0.0                 | 0                       | 310.40              | 0.5                 | 10                      |
| 309.88              | 0.0                 | 0                       | 310.41              | 0.5                 | 11                      |
| 309.89              | 0.0                 | 0                       | 310.42              | 0.5                 | 11                      |
| 309.90              | 0.0                 | 1                       | 310.43              | 0.5                 | 11                      |
| 309.91              | 0.0                 | 1                       | 310.44              | 0.5                 | 11                      |
| 309.92              | 0.0                 | 1                       | 310.45              | 0.5                 | 12                      |
| 309.93              | 0.0                 | 1                       | 310.46              | 0.5                 | 12                      |
| 309.94              | 0.0                 | 1                       | 310.47              | 0.5                 | 12                      |
| 309.95              | 0.1                 | 1                       | 310.48              | 0.5                 | 12                      |
| 309.96              | 0.1                 | 1                       | 310.49              | 0.5                 | 12                      |
| 309.97              | 0.1                 | 2                       | 310.50              | 0.6                 | 13                      |
| 309.98              | 0.1                 | 2                       | 310.51              | 0.6                 | 13                      |
| 309.99              | 0.1                 | 2                       | 310.52              | 0.6                 | 13                      |
| 310.00              | 0.1                 | 2                       | 310.53              | 0.6                 | 13                      |
| 310.01              | 0.1                 | 2                       | 310.54              | 0.6                 | 13                      |
| 310.02              | 0.1                 | 2                       | 310.55              | 0.6                 | 14                      |
| 310.03              | 0.1                 | 3                       | 310.56              | 0.6                 | 14                      |
| 310.04              | 0.1                 | 3                       | 310.57              | 0.6                 | 14                      |
| 310.05              | 0.1                 | 3                       | 310.58              | 0.6                 | 14                      |
| 310.06              | 0.1                 | 3                       | 310.59              | 0.6                 | 14                      |
| 310.07              | 0.1                 | 3                       | 310.60              | 0.6                 | 15                      |
| 310.08              | 0.2                 | 3                       | 310.61              | 0.7                 | 15                      |
| 310.09              | 0.2                 | 4                       | 310.62              | 0.7                 | 15                      |
| 310.10              | 0.2                 | 4                       | 310.63              | 0.7                 | 15                      |
| 310.11              | 0.2                 | 4                       | 310.64              | 0.7                 | 15                      |
| 310.12              | 0.2                 | 4                       | 310.65              | 0.7                 | 16                      |
| 310.13              | 0.2                 | 4                       | 310.66              | 0.7                 | 16                      |
| 310.14              | 0.2                 | 5                       | 310.67              | 0.7                 | 16                      |
| 310.15              | 0.2                 | 5                       | 310.68              | 0.7                 | 16                      |
| 310.16              | 0.2                 | 5                       | 310.69              | 0.7                 | 16                      |
| 310.17              | 0.2                 | 5                       | 310.70              | 0.7                 | 16                      |
| 310.18              | 0.2                 | 6                       | 310.71              | 0.7                 | 17                      |
| 310.19              | 0.3                 | 6                       | 310.72              | 0.7                 | 17                      |
| 310.20              | 0.3                 | 6                       | 310.73              | 0.7                 | 17                      |
| 310.21              | 0.3                 | 6                       | 310.74              | 0.8                 | 17                      |
| 310.22              | 0.3                 | 6                       | 310.75              | 0.8                 | 17                      |
| 310.23              | 0.3                 | 7                       | 310.76              | 0.8                 | 17                      |
| 310.24              | 0.3                 | 7                       | 310.77              | 0.8                 | 17                      |
| 310.25              | 0.3                 | 7                       | 310.78              | 0.8                 | 17                      |
| 310.26              | 0.3                 | 7                       | 310.79              | 0.8                 | 18                      |
| 310.27              | 0.3                 | 8                       | 310.80              | 0.8                 | 18                      |
| 310.28              | 0.3                 | 8                       | 310.81              | 0.8                 | 18                      |
| 310.29              | 0.4                 | 8                       | 310.82              | 0.8                 | 18                      |
| 310.30              | 0.4                 | 8                       | 310.83              | <b>0.8</b>          | <b>18</b>               |
| 310.31              | 0.4                 | 8                       |                     |                     |                         |
| 310.32              | 0.4                 | 9                       |                     |                     |                         |
| 310.33              | 0.4                 | 9                       |                     |                     |                         |
| 310.34              | 0.4                 | 9                       |                     |                     |                         |
| 310.35              | 0.4                 | 9                       |                     |                     |                         |

**Summary for Pond 1ST: Existing Sediment Trap**

Inflow Area = 3.182 ac, 9.18% Impervious, Inflow Depth = 0.00" for WQv event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach 1R : Existing Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 315.50' Surf.Area= 0.128 ac Storage= 0.193 af  
 Peak Elev= 315.50' @ 0.00 hrs Surf.Area= 0.128 ac Storage= 0.193 af

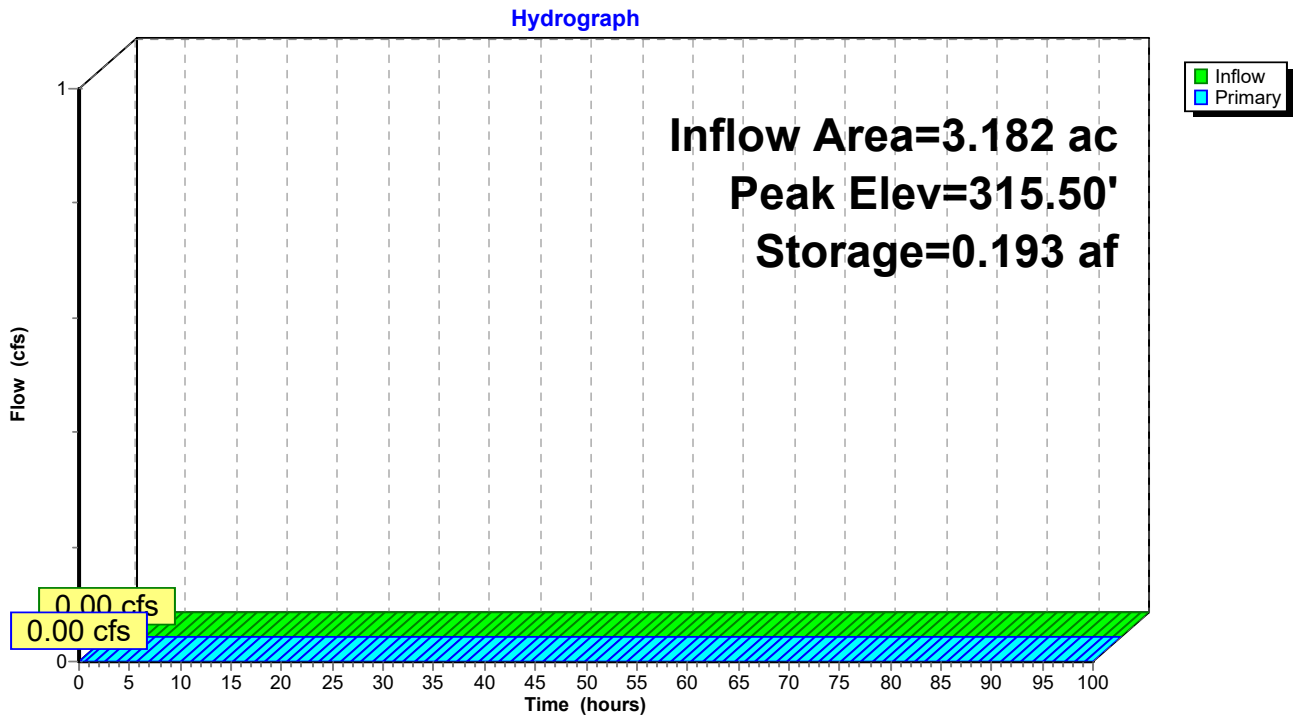
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no inflow)

| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |
|------------------|-------------------|---------------|--|-----------------------|------------------|
| #1               | 313.83'           | 0.443 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |
| 313.83           | 0.088             | 271.6         | 0.000  | 0.000                 | 0.088            |
| 314.00           | 0.107             | 290.3         | 0.017  | 0.017                 | 0.107            |
| 315.50           | 0.128             | 309.9         | 0.176  | 0.193                 | 0.131            |
| 316.00           | 0.139             | 319.8         | 0.067  | 0.259                 | 0.143            |
| 316.50           | 0.154             | 348.8         | 0.073  | 0.333                 | 0.179            |
| 317.00           | 0.295             | 446.8         | 0.110  | 0.443                 | 0.321            |

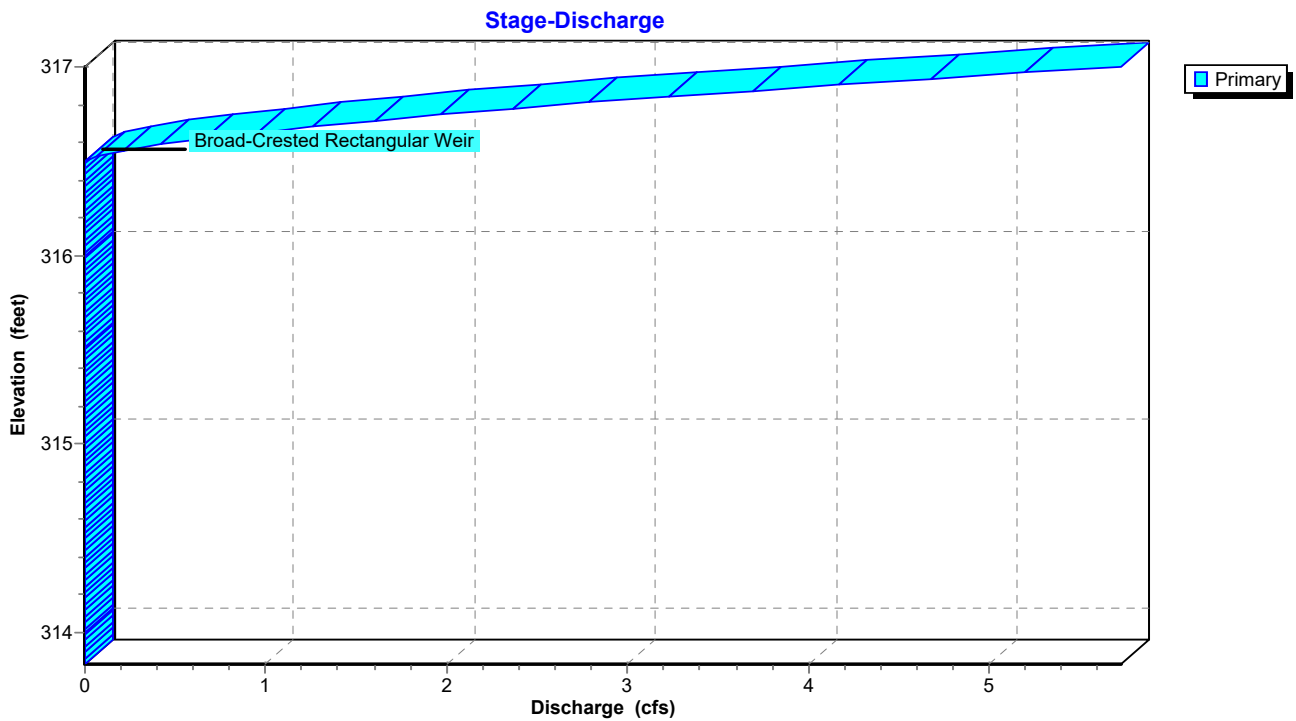
| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 316.50' | <b>6.0' long x 34.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60             |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63         |  |  |  |  |  |  |  |  |  |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=315.50' TW=316.00' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

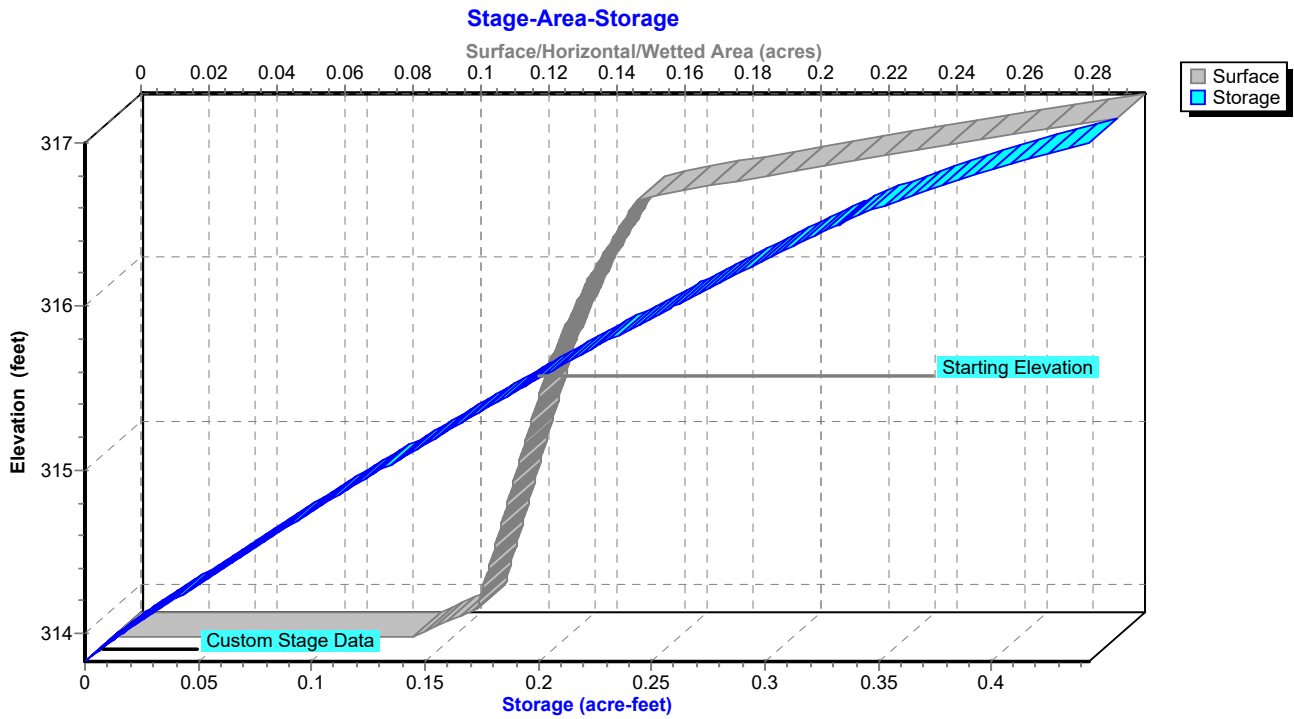
**Pond 1ST: Existing Sediment Trap**



**Pond 1ST: Existing Sediment Trap**



### Pond 1ST: Existing Sediment Trap



**Hydrograph for Pond 1ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 2.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 5.00         | 0.00         | 0.193               | 315.50           | 0.00          |
| 7.50         | 0.00         | 0.193               | 315.50           | 0.00          |
| 10.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 12.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 15.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 17.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 20.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 22.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 25.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 27.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 30.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 32.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 35.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 37.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 40.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 42.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 45.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 47.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 50.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 52.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 55.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 57.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 60.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 62.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 65.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 67.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 70.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 72.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 75.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 77.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 80.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 82.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 85.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 87.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 90.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 92.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 95.00        | 0.00         | 0.193               | 315.50           | 0.00          |
| 97.50        | 0.00         | 0.193               | 315.50           | 0.00          |
| 100.00       | 0.00         | 0.193               | 315.50           | 0.00          |

**Stage-Discharge for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 313.83              | 0.00             | 314.89              | 0.00             | 315.95              | 0.00             |
| 313.85              | 0.00             | 314.91              | 0.00             | 315.97              | 0.00             |
| 313.87              | 0.00             | 314.93              | 0.00             | 315.99              | 0.00             |
| 313.89              | 0.00             | 314.95              | 0.00             | 316.01              | 0.00             |
| 313.91              | 0.00             | 314.97              | 0.00             | 316.03              | 0.00             |
| 313.93              | 0.00             | 314.99              | 0.00             | 316.05              | 0.00             |
| 313.95              | 0.00             | 315.01              | 0.00             | 316.07              | 0.00             |
| 313.97              | 0.00             | 315.03              | 0.00             | 316.09              | 0.00             |
| 313.99              | 0.00             | 315.05              | 0.00             | 316.11              | 0.00             |
| 314.01              | 0.00             | 315.07              | 0.00             | 316.13              | 0.00             |
| 314.03              | 0.00             | 315.09              | 0.00             | 316.15              | 0.00             |
| 314.05              | 0.00             | 315.11              | 0.00             | 316.17              | 0.00             |
| 314.07              | 0.00             | 315.13              | 0.00             | 316.19              | 0.00             |
| 314.09              | 0.00             | 315.15              | 0.00             | 316.21              | 0.00             |
| 314.11              | 0.00             | 315.17              | 0.00             | 316.23              | 0.00             |
| 314.13              | 0.00             | 315.19              | 0.00             | 316.25              | 0.00             |
| 314.15              | 0.00             | 315.21              | 0.00             | 316.27              | 0.00             |
| 314.17              | 0.00             | 315.23              | 0.00             | 316.29              | 0.00             |
| 314.19              | 0.00             | 315.25              | 0.00             | 316.31              | 0.00             |
| 314.21              | 0.00             | 315.27              | 0.00             | 316.33              | 0.00             |
| 314.23              | 0.00             | 315.29              | 0.00             | 316.35              | 0.00             |
| 314.25              | 0.00             | 315.31              | 0.00             | 316.37              | 0.00             |
| 314.27              | 0.00             | 315.33              | 0.00             | 316.39              | 0.00             |
| 314.29              | 0.00             | 315.35              | 0.00             | 316.41              | 0.00             |
| 314.31              | 0.00             | 315.37              | 0.00             | 316.43              | 0.00             |
| 314.33              | 0.00             | 315.39              | 0.00             | 316.45              | 0.00             |
| 314.35              | 0.00             | 315.41              | 0.00             | 316.47              | 0.00             |
| 314.37              | 0.00             | 315.43              | 0.00             | 316.49              | 0.00             |
| 314.39              | 0.00             | 315.45              | 0.00             | 316.51              | 0.02             |
| 314.41              | 0.00             | 315.47              | 0.00             | 316.53              | 0.08             |
| 314.43              | 0.00             | 315.49              | 0.00             | 316.55              | 0.18             |
| 314.45              | 0.00             | 315.51              | 0.00             | 316.57              | 0.30             |
| 314.47              | 0.00             | 315.53              | 0.00             | 316.59              | 0.43             |
| 314.49              | 0.00             | 315.55              | 0.00             | 316.61              | 0.59             |
| 314.51              | 0.00             | 315.57              | 0.00             | 316.63              | 0.75             |
| 314.53              | 0.00             | 315.59              | 0.00             | 316.65              | 0.93             |
| 314.55              | 0.00             | 315.61              | 0.00             | 316.67              | 1.13             |
| 314.57              | 0.00             | 315.63              | 0.00             | 316.69              | 1.33             |
| 314.59              | 0.00             | 315.65              | 0.00             | 316.71              | 1.55             |
| 314.61              | 0.00             | 315.67              | 0.00             | 316.73              | 1.78             |
| 314.63              | 0.00             | 315.69              | 0.00             | 316.75              | 2.01             |
| 314.65              | 0.00             | 315.71              | 0.00             | 316.77              | 2.26             |
| 314.67              | 0.00             | 315.73              | 0.00             | 316.79              | 2.52             |
| 314.69              | 0.00             | 315.75              | 0.00             | 316.81              | 2.79             |
| 314.71              | 0.00             | 315.77              | 0.00             | 316.83              | 3.06             |
| 314.73              | 0.00             | 315.79              | 0.00             | 316.85              | 3.35             |
| 314.75              | 0.00             | 315.81              | 0.00             | 316.87              | 3.64             |
| 314.77              | 0.00             | 315.83              | 0.00             | 316.89              | 3.94             |
| 314.79              | 0.00             | 315.85              | 0.00             | 316.91              | 4.25             |
| 314.81              | 0.00             | 315.87              | 0.00             | 316.93              | 4.57             |
| 314.83              | 0.00             | 315.89              | 0.00             | 316.95              | 4.89             |
| 314.85              | 0.00             | 315.91              | 0.00             | 316.97              | 5.22             |
| 314.87              | 0.00             | 315.93              | 0.00             | 316.99              | <b>5.56</b>      |

**Stage-Area-Storage for Pond 1ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 313.83              | 0.088              | 0.000                  | 316.48              | 0.153              | 0.329                  |
| 313.88              | 0.093              | 0.005                  | 316.53              | 0.161              | 0.337                  |
| 313.93              | 0.099              | 0.009                  | 316.58              | 0.174              | 0.346                  |
| 313.98              | 0.105              | 0.014                  | 316.63              | 0.186              | 0.355                  |
| 314.03              | 0.107              | 0.020                  | 316.68              | 0.200              | 0.364                  |
| 314.08              | 0.108              | 0.025                  | 316.73              | 0.213              | 0.375                  |
| 314.13              | 0.109              | 0.031                  | 316.78              | 0.227              | 0.386                  |
| 314.18              | 0.109              | 0.036                  | 316.83              | 0.242              | 0.397                  |
| 314.23              | 0.110              | 0.042                  | 316.88              | 0.257              | 0.410                  |
| 314.28              | 0.111              | 0.047                  | 316.93              | 0.273              | 0.423                  |
| 314.33              | 0.111              | 0.053                  | 316.98              | <b>0.288</b>       | <b>0.437</b>           |
| 314.38              | 0.112              | 0.058                  |                     |                    |                        |
| 314.43              | 0.113              | 0.064                  |                     |                    |                        |
| 314.48              | 0.114              | 0.069                  |                     |                    |                        |
| 314.53              | 0.114              | 0.075                  |                     |                    |                        |
| 314.58              | 0.115              | 0.081                  |                     |                    |                        |
| 314.63              | 0.116              | 0.087                  |                     |                    |                        |
| 314.68              | 0.116              | 0.092                  |                     |                    |                        |
| 314.73              | 0.117              | 0.098                  |                     |                    |                        |
| 314.78              | 0.118              | 0.104                  |                     |                    |                        |
| 314.83              | 0.118              | 0.110                  |                     |                    |                        |
| 314.88              | 0.119              | 0.116                  |                     |                    |                        |
| 314.93              | 0.120              | 0.122                  |                     |                    |                        |
| 314.98              | 0.121              | 0.128                  |                     |                    |                        |
| 315.03              | 0.121              | 0.134                  |                     |                    |                        |
| 315.08              | 0.122              | 0.140                  |                     |                    |                        |
| 315.13              | 0.123              | 0.146                  |                     |                    |                        |
| 315.18              | 0.123              | 0.152                  |                     |                    |                        |
| 315.23              | 0.124              | 0.159                  |                     |                    |                        |
| 315.28              | 0.125              | 0.165                  |                     |                    |                        |
| 315.33              | 0.126              | 0.171                  |                     |                    |                        |
| 315.38              | 0.126              | 0.177                  |                     |                    |                        |
| 315.43              | 0.127              | 0.184                  |                     |                    |                        |
| 315.48              | 0.128              | 0.190                  |                     |                    |                        |
| 315.53              | 0.129              | 0.196                  |                     |                    |                        |
| 315.58              | 0.130              | 0.203                  |                     |                    |                        |
| 315.63              | 0.131              | 0.209                  |                     |                    |                        |
| 315.68              | 0.132              | 0.216                  |                     |                    |                        |
| 315.73              | 0.133              | 0.223                  |                     |                    |                        |
| 315.78              | 0.134              | 0.229                  |                     |                    |                        |
| 315.83              | 0.135              | 0.236                  |                     |                    |                        |
| 315.88              | 0.136              | 0.243                  |                     |                    |                        |
| 315.93              | 0.137              | 0.250                  |                     |                    |                        |
| 315.98              | 0.139              | 0.257                  |                     |                    |                        |
| 316.03              | 0.140              | 0.263                  |                     |                    |                        |
| 316.08              | 0.141              | 0.271                  |                     |                    |                        |
| 316.13              | 0.143              | 0.278                  |                     |                    |                        |
| 316.18              | 0.144              | 0.285                  |                     |                    |                        |
| 316.23              | 0.146              | 0.292                  |                     |                    |                        |
| 316.28              | 0.147              | 0.299                  |                     |                    |                        |
| 316.33              | 0.149              | 0.307                  |                     |                    |                        |
| 316.38              | 0.150              | 0.314                  |                     |                    |                        |
| 316.43              | 0.152              | 0.322                  |                     |                    |                        |

**Summary for Pond 2ST: Existing Sediment Trap**

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth > 0.09" for WQv event  
 Inflow = 0.13 cfs @ 12.02 hrs, Volume= 0.042 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 307.50' Surf.Area= 0.026 ac Storage= 0.011 af  
 Peak Elev= 308.63' @ 100.00 hrs Surf.Area= 0.049 ac Storage= 0.053 af (0.042 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

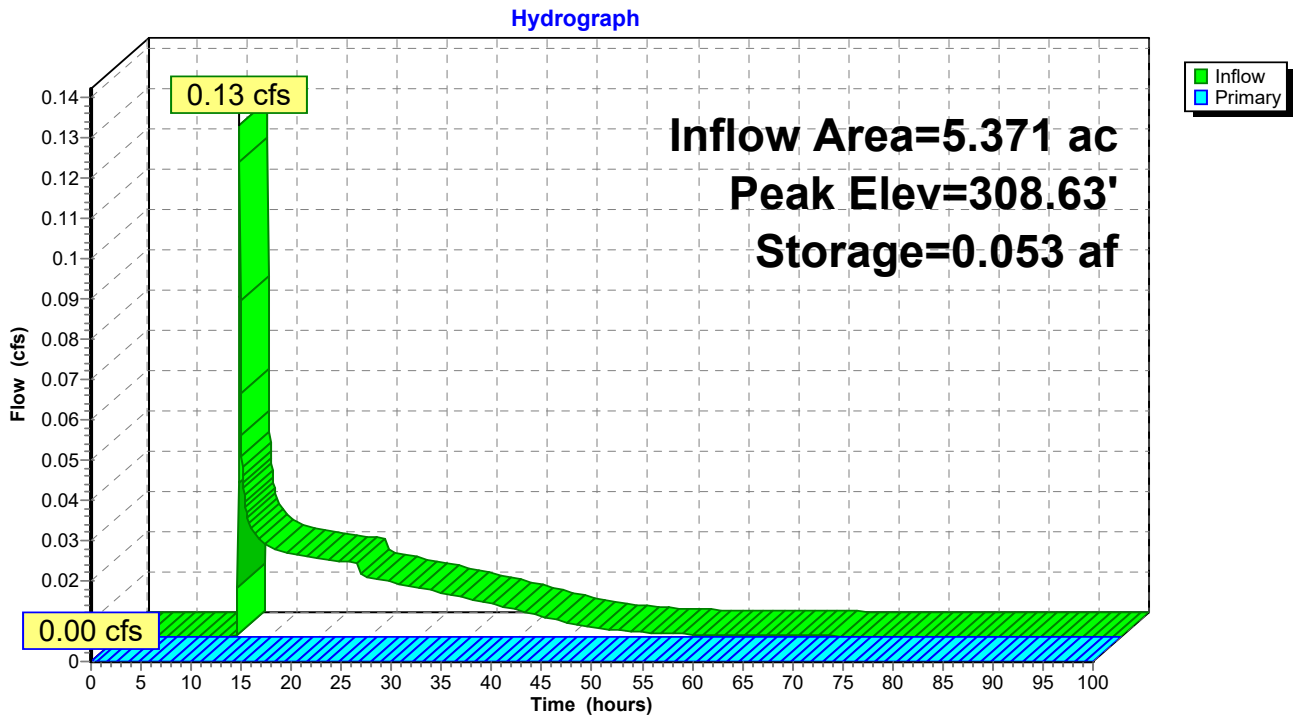
| Volume           | Invert            | Avail.Storage | Storage Description  |                       |                  |
|------------------|-------------------|---------------|--|-----------------------|------------------|
| #1               | 307.00'           | 0.248 af      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                       |                  |
| Elevation (feet) | Surf.Area (acres) | Perim. (feet) | Inc.Store (acre-feet)                                      | Cum.Store (acre-feet) | Wet.Area (acres) |
| 307.00           | 0.019             | 188.4         | 0.000  | 0.000                 | 0.019            |
| 307.50           | 0.026             | 206.4         | 0.011  | 0.011                 | 0.032            |
| 308.00           | 0.036             | 232.2         | 0.015  | 0.027                 | 0.053            |
| 309.00           | 0.057             | 269.3         | 0.046  | 0.073                 | 0.087            |
| 310.00           | 0.083             | 316.3         | 0.070  | 0.142                 | 0.138            |
| 311.00           | 0.131             | 434.9         | 0.106  | 0.248                 | 0.301            |

| Device | Routing | Invert  | Outlet Devices  |  |  |  |  |  |  |  |  |  |
|--------|---------|---------|---|--|--|--|--|--|--|--|--|--|
| #1     | Primary | 310.17' | <b>11.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |
|        |         |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00   |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                              |  |  |  |  |  |  |  |  |  |
|        |         |         | Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64    |  |  |  |  |  |  |  |  |  |
|        |         |         | 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74                         |  |  |  |  |  |  |  |  |  |

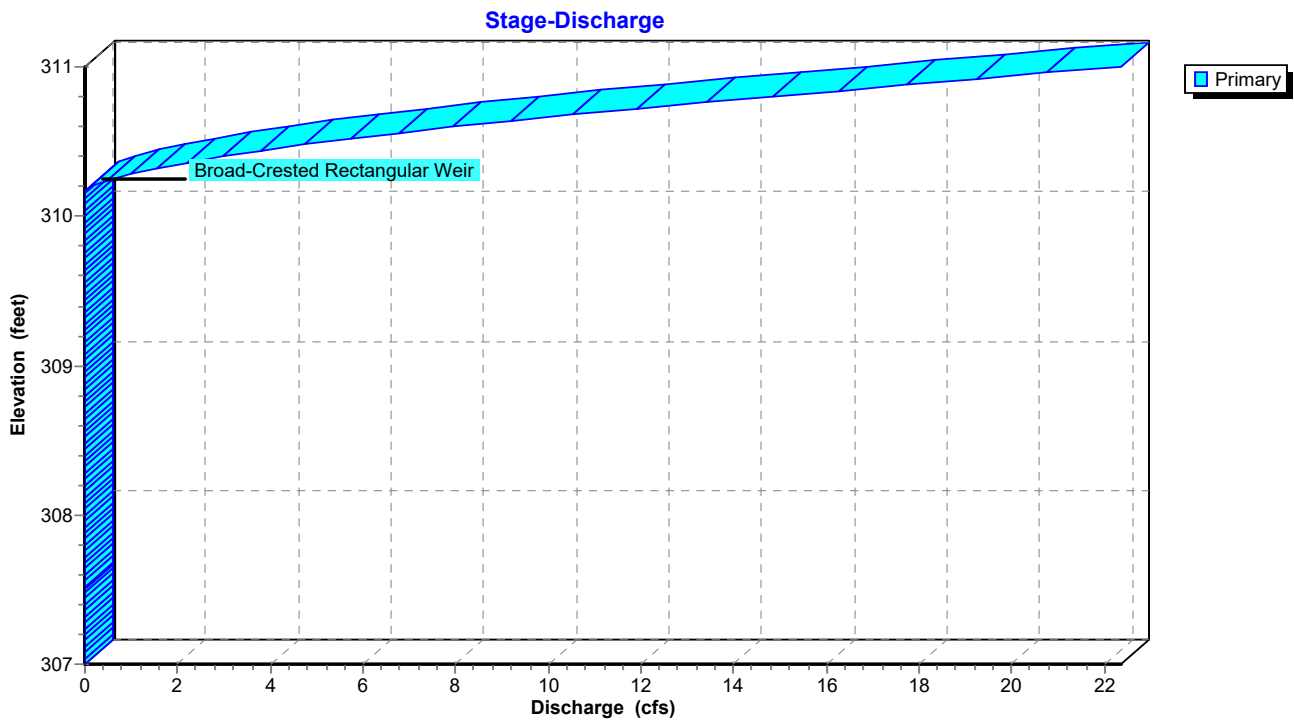
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=307.50' TW=0.00' (Dynamic Tailwater)  
 ↑1=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)



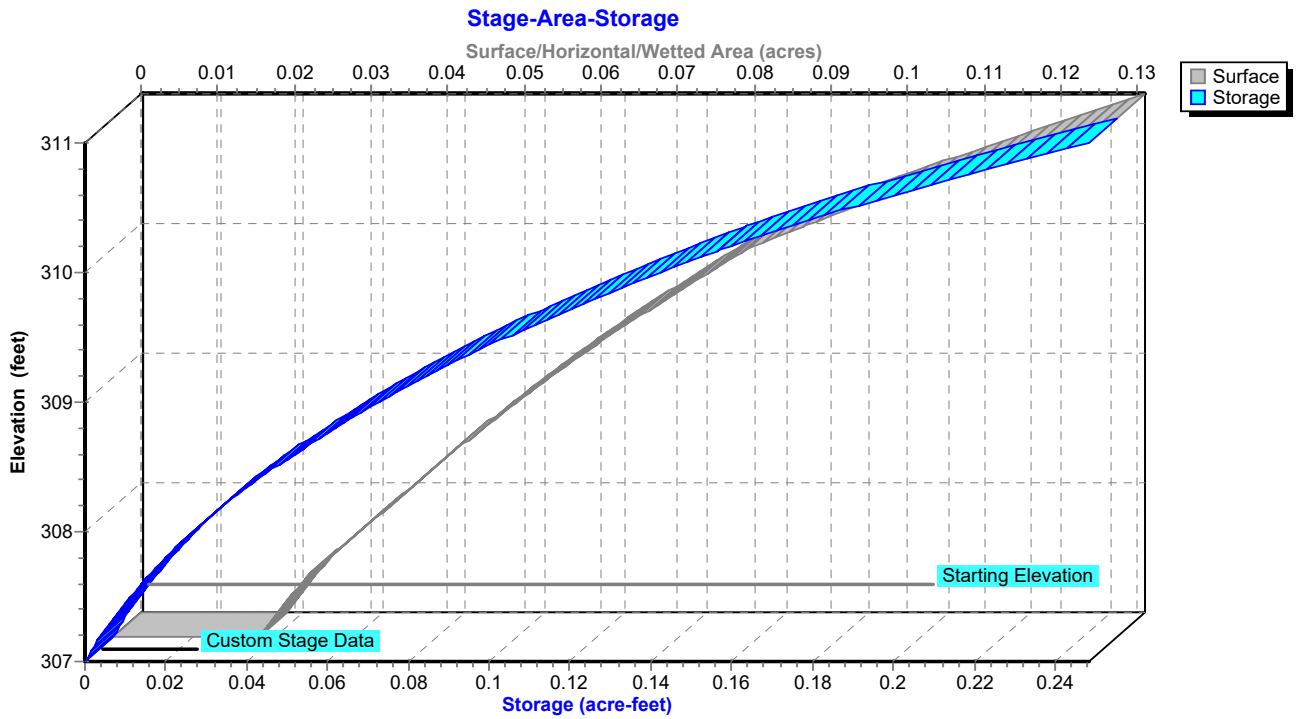
**Pond 2ST: Existing Sediment Trap**



**Pond 2ST: Existing Sediment Trap**



### Pond 2ST: Existing Sediment Trap



**Hydrograph for Pond 2ST: Existing Sediment Trap**

| Time (hours) | Inflow (cfs) | Storage (acre-feet) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|---------------------|------------------|---------------|
| 0.00         | 0.00         | 0.011               | 307.50           | <b>0.00</b>   |
| 2.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 5.00         | 0.00         | 0.011               | 307.50           | 0.00          |
| 7.50         | 0.00         | 0.011               | 307.50           | 0.00          |
| 10.00        | <b>0.00</b>  | 0.011               | 307.50           | 0.00          |
| 12.50        | <b>0.04</b>  | 0.014               | 307.62           | 0.00          |
| 15.00        | 0.02         | 0.020               | 307.80           | 0.00          |
| 17.50        | 0.02         | 0.024               | 307.93           | 0.00          |
| 20.00        | 0.02         | 0.028               | 308.05           | 0.00          |
| 22.50        | 0.02         | 0.032               | 308.15           | 0.00          |
| 25.00        | 0.01         | 0.036               | 308.24           | 0.00          |
| 27.50        | 0.01         | 0.039               | 308.31           | 0.00          |
| 30.00        | 0.01         | 0.041               | 308.37           | 0.00          |
| 32.50        | 0.01         | 0.044               | 308.43           | 0.00          |
| 35.00        | 0.01         | 0.046               | 308.47           | 0.00          |
| 37.50        | 0.01         | 0.048               | 308.51           | 0.00          |
| 40.00        | 0.01         | 0.049               | 308.54           | 0.00          |
| 42.50        | 0.01         | 0.050               | 308.57           | 0.00          |
| 45.00        | 0.00         | 0.051               | 308.59           | 0.00          |
| 47.50        | 0.00         | 0.052               | 308.60           | 0.00          |
| 50.00        | 0.00         | 0.052               | 308.61           | 0.00          |
| 52.50        | 0.00         | 0.052               | 308.61           | 0.00          |
| 55.00        | 0.00         | 0.053               | 308.62           | 0.00          |
| 57.50        | 0.00         | 0.053               | 308.62           | 0.00          |
| 60.00        | 0.00         | 0.053               | 308.62           | 0.00          |
| 62.50        | 0.00         | 0.053               | 308.62           | 0.00          |
| 65.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 67.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 70.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 72.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 75.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 77.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 80.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 82.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 85.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 87.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 90.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 92.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 95.00        | 0.00         | 0.053               | 308.63           | 0.00          |
| 97.50        | 0.00         | 0.053               | 308.63           | 0.00          |
| 100.00       | 0.00         | <b>0.053</b>        | <b>308.63</b>    | 0.00          |

**Stage-Discharge for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) | Elevation<br>(feet) | Primary<br>(cfs) |
|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| 307.00              | 0.00             | 308.06              | 0.00             | 309.12              | 0.00             | 310.18              | 0.03             |
| 307.02              | 0.00             | 308.08              | 0.00             | 309.14              | 0.00             | 310.20              | 0.14             |
| 307.04              | 0.00             | 308.10              | 0.00             | 309.16              | 0.00             | 310.22              | 0.30             |
| 307.06              | 0.00             | 308.12              | 0.00             | 309.18              | 0.00             | 310.24              | 0.50             |
| 307.08              | 0.00             | 308.14              | 0.00             | 309.20              | 0.00             | 310.26              | 0.72             |
| 307.10              | 0.00             | 308.16              | 0.00             | 309.22              | 0.00             | 310.28              | 0.98             |
| 307.12              | 0.00             | 308.18              | 0.00             | 309.24              | 0.00             | 310.30              | 1.25             |
| 307.14              | 0.00             | 308.20              | 0.00             | 309.26              | 0.00             | 310.32              | 1.55             |
| 307.16              | 0.00             | 308.22              | 0.00             | 309.28              | 0.00             | 310.34              | 1.87             |
| 307.18              | 0.00             | 308.24              | 0.00             | 309.30              | 0.00             | 310.36              | 2.21             |
| 307.20              | 0.00             | 308.26              | 0.00             | 309.32              | 0.00             | 310.38              | 2.58             |
| 307.22              | 0.00             | 308.28              | 0.00             | 309.34              | 0.00             | 310.40              | 2.97             |
| 307.24              | 0.00             | 308.30              | 0.00             | 309.36              | 0.00             | 310.42              | 3.38             |
| 307.26              | 0.00             | 308.32              | 0.00             | 309.38              | 0.00             | 310.44              | 3.81             |
| 307.28              | 0.00             | 308.34              | 0.00             | 309.40              | 0.00             | 310.46              | 4.26             |
| 307.30              | 0.00             | 308.36              | 0.00             | 309.42              | 0.00             | 310.48              | 4.73             |
| 307.32              | 0.00             | 308.38              | 0.00             | 309.44              | 0.00             | 310.50              | 5.22             |
| 307.34              | 0.00             | 308.40              | 0.00             | 309.46              | 0.00             | 310.52              | 5.72             |
| 307.36              | 0.00             | 308.42              | 0.00             | 309.48              | 0.00             | 310.54              | 6.25             |
| 307.38              | 0.00             | 308.44              | 0.00             | 309.50              | 0.00             | 310.56              | 6.79             |
| 307.40              | 0.00             | 308.46              | 0.00             | 309.52              | 0.00             | 310.58              | 7.36             |
| 307.42              | 0.00             | 308.48              | 0.00             | 309.54              | 0.00             | 310.60              | 7.95             |
| 307.44              | 0.00             | 308.50              | 0.00             | 309.56              | 0.00             | 310.62              | 8.57             |
| 307.46              | 0.00             | 308.52              | 0.00             | 309.58              | 0.00             | 310.64              | 9.20             |
| 307.48              | 0.00             | 308.54              | 0.00             | 309.60              | 0.00             | 310.66              | 9.86             |
| 307.50              | 0.00             | 308.56              | 0.00             | 309.62              | 0.00             | 310.68              | 10.53            |
| 307.52              | 0.00             | 308.58              | 0.00             | 309.64              | 0.00             | 310.70              | 11.22            |
| 307.54              | 0.00             | 308.60              | 0.00             | 309.66              | 0.00             | 310.72              | 11.93            |
| 307.56              | 0.00             | 308.62              | 0.00             | 309.68              | 0.00             | 310.74              | 12.67            |
| 307.58              | 0.00             | 308.64              | 0.00             | 309.70              | 0.00             | 310.76              | 13.42            |
| 307.60              | 0.00             | 308.66              | 0.00             | 309.72              | 0.00             | 310.78              | 14.15            |
| 307.62              | 0.00             | 308.68              | 0.00             | 309.74              | 0.00             | 310.80              | 14.84            |
| 307.64              | 0.00             | 308.70              | 0.00             | 309.76              | 0.00             | 310.82              | 15.55            |
| 307.66              | 0.00             | 308.72              | 0.00             | 309.78              | 0.00             | 310.84              | 16.27            |
| 307.68              | 0.00             | 308.74              | 0.00             | 309.80              | 0.00             | 310.86              | 16.99            |
| 307.70              | 0.00             | 308.76              | 0.00             | 309.82              | 0.00             | 310.88              | 17.73            |
| 307.72              | 0.00             | 308.78              | 0.00             | 309.84              | 0.00             | 310.90              | 18.48            |
| 307.74              | 0.00             | 308.80              | 0.00             | 309.86              | 0.00             | 310.92              | 19.24            |
| 307.76              | 0.00             | 308.82              | 0.00             | 309.88              | 0.00             | 310.94              | 20.00            |
| 307.78              | 0.00             | 308.84              | 0.00             | 309.90              | 0.00             | 310.96              | 20.78            |
| 307.80              | 0.00             | 308.86              | 0.00             | 309.92              | 0.00             | 310.98              | 21.57            |
| 307.82              | 0.00             | 308.88              | 0.00             | 309.94              | 0.00             | 311.00              | <b>22.36</b>     |
| 307.84              | 0.00             | 308.90              | 0.00             | 309.96              | 0.00             |                     |                  |
| 307.86              | 0.00             | 308.92              | 0.00             | 309.98              | 0.00             |                     |                  |
| 307.88              | 0.00             | 308.94              | 0.00             | 310.00              | 0.00             |                     |                  |
| 307.90              | 0.00             | 308.96              | 0.00             | 310.02              | 0.00             |                     |                  |
| 307.92              | 0.00             | 308.98              | 0.00             | 310.04              | 0.00             |                     |                  |
| 307.94              | 0.00             | 309.00              | 0.00             | 310.06              | 0.00             |                     |                  |
| 307.96              | 0.00             | 309.02              | 0.00             | 310.08              | 0.00             |                     |                  |
| 307.98              | 0.00             | 309.04              | 0.00             | 310.10              | 0.00             |                     |                  |
| 308.00              | 0.00             | 309.06              | 0.00             | 310.12              | 0.00             |                     |                  |
| 308.02              | 0.00             | 309.08              | 0.00             | 310.14              | 0.00             |                     |                  |
| 308.04              | 0.00             | 309.10              | 0.00             | 310.16              | 0.00             |                     |                  |

**Stage-Area-Storage for Pond 2ST: Existing Sediment Trap**

| Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) | Elevation<br>(feet) | Surface<br>(acres) | Storage<br>(acre-feet) |
|---------------------|--------------------|------------------------|---------------------|--------------------|------------------------|
| 307.00              | 0.019              | 0.000                  | 309.65              | 0.073              | 0.115                  |
| 307.05              | 0.020              | 0.001                  | 309.70              | 0.075              | 0.119                  |
| 307.10              | 0.020              | 0.002                  | 309.75              | 0.076              | 0.122                  |
| 307.15              | 0.021              | 0.003                  | 309.80              | 0.077              | 0.126                  |
| 307.20              | 0.022              | 0.004                  | 309.85              | 0.079              | 0.130                  |
| 307.25              | 0.022              | 0.005                  | 309.90              | 0.080              | 0.134                  |
| 307.30              | 0.023              | 0.006                  | 309.95              | 0.082              | 0.138                  |
| 307.35              | 0.024              | 0.007                  | 310.00              | 0.083              | 0.142                  |
| 307.40              | 0.025              | 0.009                  | 310.05              | 0.085              | 0.147                  |
| 307.45              | 0.025              | 0.010                  | 310.10              | 0.087              | 0.151                  |
| 307.50              | 0.026              | 0.011                  | 310.15              | 0.090              | 0.155                  |
| 307.55              | 0.027              | 0.013                  | 310.20              | 0.092              | 0.160                  |
| 307.60              | 0.028              | 0.014                  | 310.25              | 0.094              | 0.164                  |
| 307.65              | 0.029              | 0.015                  | 310.30              | 0.096              | 0.169                  |
| 307.70              | 0.030              | 0.017                  | 310.35              | 0.099              | 0.174                  |
| 307.75              | 0.031              | 0.018                  | 310.40              | 0.101              | 0.179                  |
| 307.80              | 0.032              | 0.020                  | 310.45              | 0.103              | 0.184                  |
| 307.85              | 0.033              | 0.021                  | 310.50              | 0.106              | 0.189                  |
| 307.90              | 0.034              | 0.023                  | 310.55              | 0.108              | 0.195                  |
| 307.95              | 0.035              | 0.025                  | 310.60              | 0.110              | 0.200                  |
| 308.00              | 0.036              | 0.027                  | 310.65              | 0.113              | 0.206                  |
| 308.05              | 0.037              | 0.028                  | 310.70              | 0.115              | 0.211                  |
| 308.10              | 0.038              | 0.030                  | 310.75              | 0.118              | 0.217                  |
| 308.15              | 0.039              | 0.032                  | 310.80              | 0.121              | 0.223                  |
| 308.20              | 0.040              | 0.034                  | 310.85              | 0.123              | 0.229                  |
| 308.25              | 0.041              | 0.036                  | 310.90              | 0.126              | 0.236                  |
| 308.30              | 0.042              | 0.038                  | 310.95              | 0.128              | 0.242                  |
| 308.35              | 0.043              | 0.040                  | 311.00              | <b>0.131</b>       | <b>0.248</b>           |
| 308.40              | 0.044              | 0.043                  |                     |                    |                        |
| 308.45              | 0.045              | 0.045                  |                     |                    |                        |
| 308.50              | 0.046              | 0.047                  |                     |                    |                        |
| 308.55              | 0.047              | 0.049                  |                     |                    |                        |
| 308.60              | 0.048              | 0.052                  |                     |                    |                        |
| 308.65              | 0.049              | 0.054                  |                     |                    |                        |
| 308.70              | 0.050              | 0.057                  |                     |                    |                        |
| 308.75              | 0.051              | 0.059                  |                     |                    |                        |
| 308.80              | 0.052              | 0.062                  |                     |                    |                        |
| 308.85              | 0.054              | 0.064                  |                     |                    |                        |
| 308.90              | 0.055              | 0.067                  |                     |                    |                        |
| 308.95              | 0.056              | 0.070                  |                     |                    |                        |
| 309.00              | 0.057              | 0.073                  |                     |                    |                        |
| 309.05              | 0.058              | 0.076                  |                     |                    |                        |
| 309.10              | 0.059              | 0.079                  |                     |                    |                        |
| 309.15              | 0.061              | 0.082                  |                     |                    |                        |
| 309.20              | 0.062              | 0.085                  |                     |                    |                        |
| 309.25              | 0.063              | 0.088                  |                     |                    |                        |
| 309.30              | 0.064              | 0.091                  |                     |                    |                        |
| 309.35              | 0.066              | 0.094                  |                     |                    |                        |
| 309.40              | 0.067              | 0.097                  |                     |                    |                        |
| 309.45              | 0.068              | 0.101                  |                     |                    |                        |
| 309.50              | 0.069              | 0.104                  |                     |                    |                        |
| 309.55              | 0.071              | 0.108                  |                     |                    |                        |
| 309.60              | 0.072              | 0.111                  |                     |                    |                        |

**Summary for Pond 3P: Proposed Stormwater Pond**

Inflow Area = 1.574 ac, 29.03% Impervious, Inflow Depth = 0.26" for WQv event  
 Inflow = 0.42 cfs @ 12.04 hrs, Volume= 0.034 af  
 Outflow = 0.02 cfs @ 18.90 hrs, Volume= 0.033 af, Atten= 96%, Lag= 411.5 min  
 Primary = 0.02 cfs @ 18.90 hrs, Volume= 0.033 af  
 Routed to Reach 6R : 12" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Pond 2ST : Existing Sediment Trap

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 309.83' Surf.Area= 1,843 sf Storage= 1,307 cf  
 Peak Elev= 310.22' @ 18.90 hrs Surf.Area= 2,448 sf Storage= 2,170 cf (863 cf above start)

Plug-Flow detention time= 2,387.9 min calculated for 0.003 af (10% of inflow)  
 Center-of-Mass det. time= 766.4 min ( 1,666.3 - 899.9 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 311.25' | 8,217 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 308.00' | 3,905 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 307.25' | 1,412 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 13,534 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 311.25           | 3,844             | 283.0         | 0                      | 0                      | 3,844            |
| 312.00           | 4,629             | 305.0         | 3,173                  | 3,173                  | 4,897            |
| 312.95           | 6,020             | 367.0         | 5,044                  | 8,217                  | 8,228            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 308.00           | 58                | 51.0          | 0                      | 0                      | 58               |
| 309.00           | 305               | 90.0          | 165                    | 165                    | 501              |
| 310.00           | 1,751             | 173.0         | 929                    | 1,094                  | 2,243            |
| 311.00           | 2,543             | 203.0         | 2,135                  | 3,229                  | 3,160            |
| 311.25           | 2,867             | 219.0         | 676                    | 3,905                  | 3,700            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 307.25           | 22                | 18.0          | 0                      | 0                      | 22               |
| 308.00           | 103               | 36.0          | 43                     | 43                     | 102              |
| 309.00           | 241               | 56.0          | 167                    | 210                    | 255              |
| 310.00           | 465               | 78.0          | 347                    | 557                    | 499              |
| 311.00           | 814               | 105.0         | 631                    | 1,189                  | 903              |
| 311.25           | 976               | 119.0         | 223                    | 1,412                  | 1,154            |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 311.68' | <b>15.0' long x 6.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 |

|    |         |         |  |      |      |      |      |      |      |      |
|----|---------|---------|--|------|------|------|------|------|------|------|
|    |         |         | 2.65   | 2.66 | 2.66 | 2.67 | 2.69 | 2.72 | 2.76 | 2.83 |
| #2 | Primary | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600                                  |      |      |      |      |      |      |      |
|    |         |         | Limited to weir flow at low heads  |      |      |      |      |      |      |      |
| #3 | Primary | 310.92' | <b>10.0" Vert. Orifice/Grate</b> C= 0.600                                  |      |      |      |      |      |      |      |
|    |         |         | Limited to weir flow at low heads  |      |      |      |      |      |      |      |
| #4 | Primary | 309.83' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads |      |      |      |      |      |      |      |

**Primary OutFlow** Max=0.02 cfs @ 18.90 hrs HW=310.22' TW=309.88' (Dynamic Tailwater)

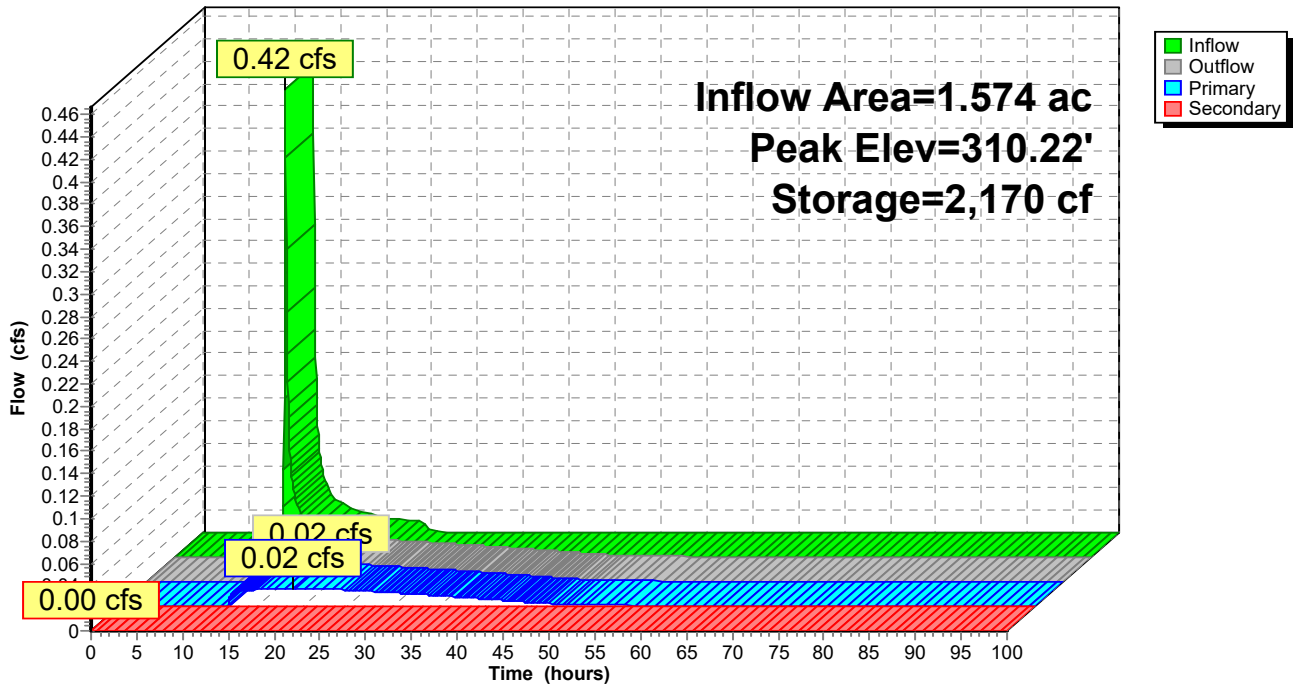
- ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)
- ↳ **3=Orifice/Grate** ( Controls 0.00 cfs)
- ↳ **4=Orifice/Grate** (Orifice Controls 0.02 cfs @ 2.82 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=309.83' TW=307.50' (Dynamic Tailwater)

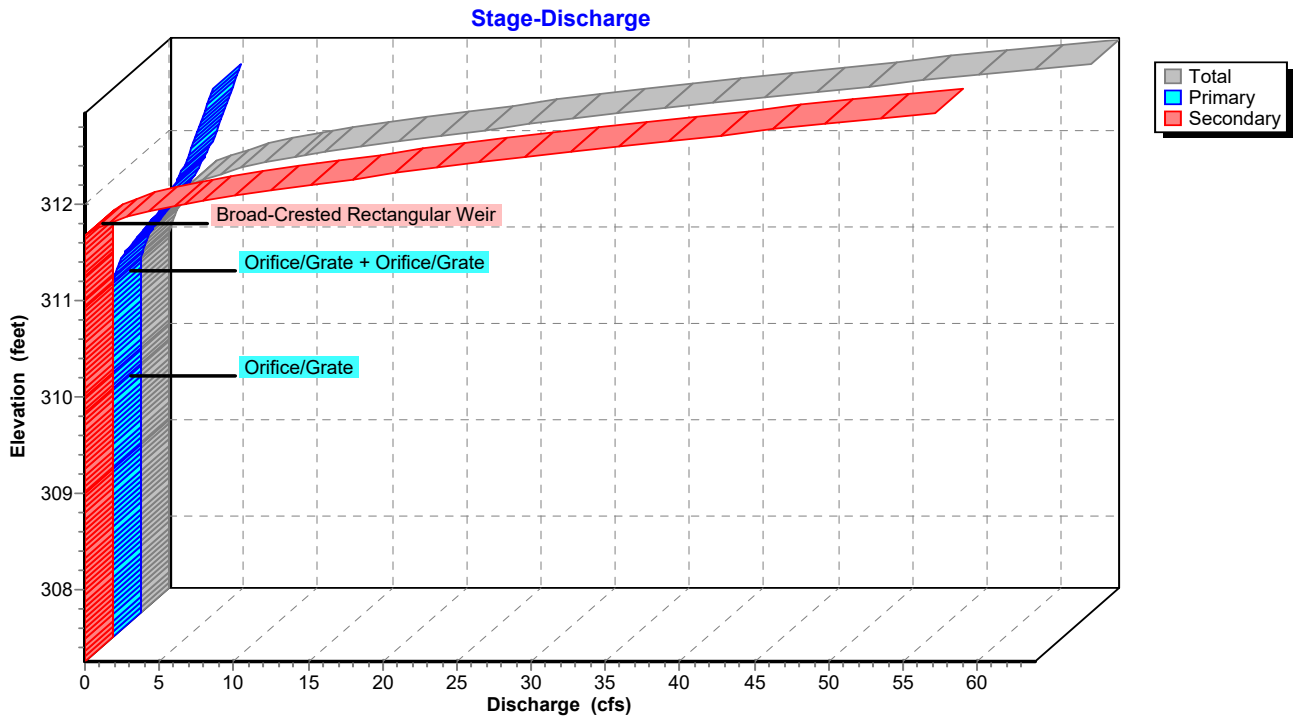
- ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Pond 3P: Proposed Stormwater Pond**

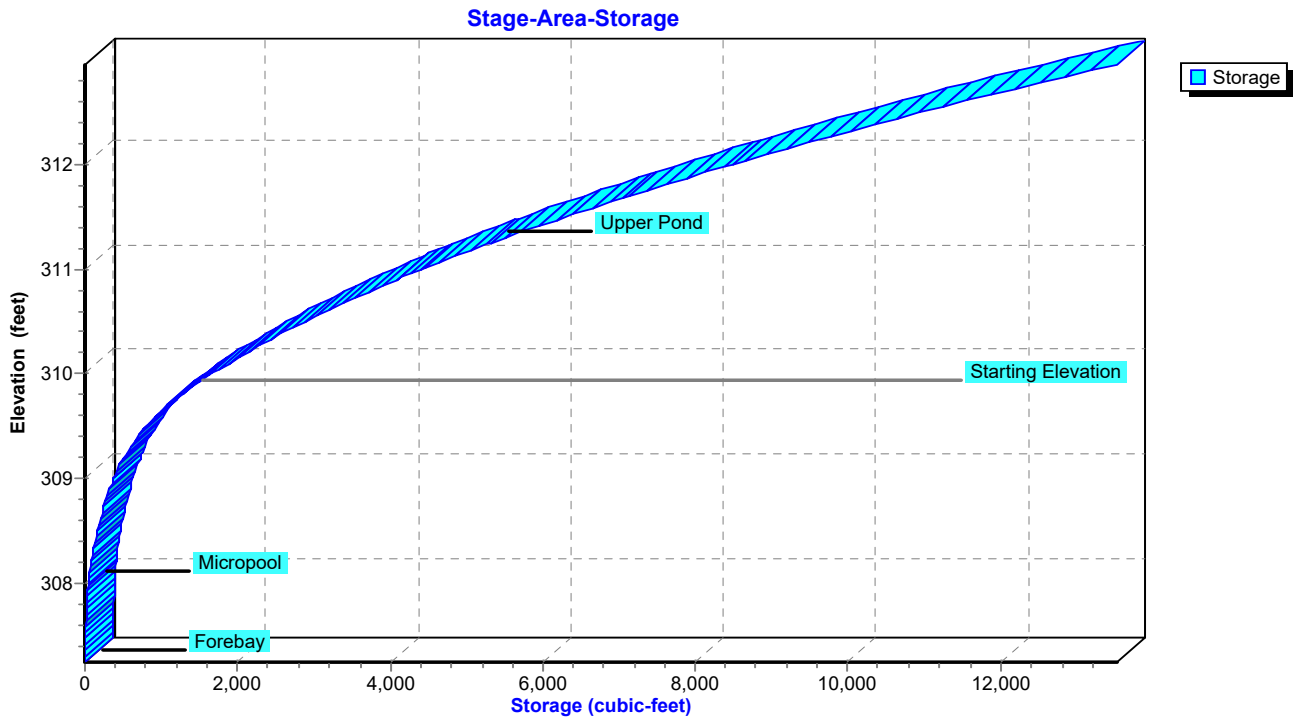
Hydrograph



### Pond 3P: Proposed Stormwater Pond



### Pond 3P: Proposed Stormwater Pond





**Hydrograph for Pond 3P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.00</b>  | 1,307                | 309.83           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>0.10</b>  | 1,826                | 310.08           | 0.01          | 0.01          | 0.00            |
| 15.00        | 0.03         | 2,104                | 310.20           | 0.01          | 0.01          | 0.00            |
| 17.50        | 0.02         | <b>2,163</b>         | <b>310.22</b>    | <b>0.02</b>   | <b>0.02</b>   | 0.00            |
| 20.00        | 0.01         | <b>2,165</b>         | <b>310.22</b>    | <b>0.02</b>   | <b>0.02</b>   | 0.00            |
| 22.50        | 0.01         | 2,137                | 310.21           | 0.02          | 0.02          | 0.00            |
| 25.00        | 0.00         | 2,081                | 310.19           | 0.01          | 0.01          | 0.00            |
| 27.50        | 0.00         | 1,961                | 310.14           | 0.01          | 0.01          | 0.00            |
| 30.00        | 0.00         | 1,846                | 310.09           | 0.01          | 0.01          | 0.00            |
| 32.50        | 0.00         | 1,743                | 310.04           | 0.01          | 0.01          | 0.00            |
| 35.00        | 0.00         | 1,652                | 310.00           | 0.01          | 0.01          | 0.00            |
| 37.50        | 0.00         | 1,574                | 309.96           | 0.01          | 0.01          | 0.00            |
| 40.00        | 0.00         | 1,508                | 309.93           | 0.01          | 0.01          | 0.00            |
| 42.50        | 0.00         | 1,456                | 309.91           | 0.01          | 0.01          | 0.00            |
| 45.00        | 0.00         | 1,419                | 309.89           | 0.00          | 0.00          | 0.00            |
| 47.50        | 0.00         | 1,394                | 309.88           | 0.00          | 0.00          | 0.00            |
| 50.00        | 0.00         | 1,377                | 309.87           | 0.00          | 0.00          | 0.00            |
| 52.50        | 0.00         | 1,365                | 309.86           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,357                | 309.86           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,350                | 309.85           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,345                | 309.85           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,341                | 309.85           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,338                | 309.85           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,335                | 309.84           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,333                | 309.84           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,331                | 309.84           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,329                | 309.84           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,327                | 309.84           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,326                | 309.84           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,325                | 309.84           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,324                | 309.84           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,323                | 309.84           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,322                | 309.84           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,322                | 309.84           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,321                | 309.84           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,320                | 309.84           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,320                | 309.84           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 3P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 307.25              | 0.00               | 0.00             | 0.00               | 312.55              | 38.45              | 5.83             | 32.62              |
| 307.35              | 0.00               | 0.00             | 0.00               | 312.65              | 44.47              | 6.06             | 38.40              |
| 307.45              | 0.00               | 0.00             | 0.00               | 312.75              | 50.72              | 6.29             | 44.44              |
| 307.55              | 0.00               | 0.00             | 0.00               | 312.85              | 57.22              | 6.51             | 50.71              |
| 307.65              | 0.00               | 0.00             | 0.00               | 312.95              | <b>63.89</b>       | <b>6.72</b>      | <b>57.17</b>       |
| 307.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 307.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 308.95              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.05              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.15              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.25              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.35              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.45              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.55              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.65              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.75              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.85              | 0.00               | 0.00             | 0.00               |                     |                    |                  |                    |
| 309.95              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.05              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.15              | 0.01               | 0.01             | 0.00               |                     |                    |                  |                    |
| 310.25              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.35              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.45              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.55              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.65              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.75              | 0.02               | 0.02             | 0.00               |                     |                    |                  |                    |
| 310.85              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 310.95              | 0.03               | 0.03             | 0.00               |                     |                    |                  |                    |
| 311.05              | 0.16               | 0.16             | 0.00               |                     |                    |                  |                    |
| 311.15              | 0.43               | 0.43             | 0.00               |                     |                    |                  |                    |
| 311.25              | 0.82               | 0.82             | 0.00               |                     |                    |                  |                    |
| 311.35              | 1.30               | 1.30             | 0.00               |                     |                    |                  |                    |
| 311.45              | 1.85               | 1.85             | 0.00               |                     |                    |                  |                    |
| 311.55              | 2.42               | 2.42             | 0.00               |                     |                    |                  |                    |
| 311.65              | 2.98               | 2.98             | 0.00               |                     |                    |                  |                    |
| 311.75              | 4.08               | 3.42             | 0.66               |                     |                    |                  |                    |
| 311.85              | 6.29               | 3.80             | 2.49               |                     |                    |                  |                    |
| 311.95              | 9.24               | 4.15             | 5.09               |                     |                    |                  |                    |
| 312.05              | 12.88              | 4.47             | 8.40               |                     |                    |                  |                    |
| 312.15              | 17.23              | 4.78             | 12.45              |                     |                    |                  |                    |
| 312.25              | 22.30              | 5.06             | 17.24              |                     |                    |                  |                    |
| 312.35              | 27.48              | 5.33             | 22.15              |                     |                    |                  |                    |
| 312.45              | 32.78              | 5.58             | 27.19              |                     |                    |                  |                    |

**Stage-Area-Storage for Pond 3P: Proposed Stormwater Pond**

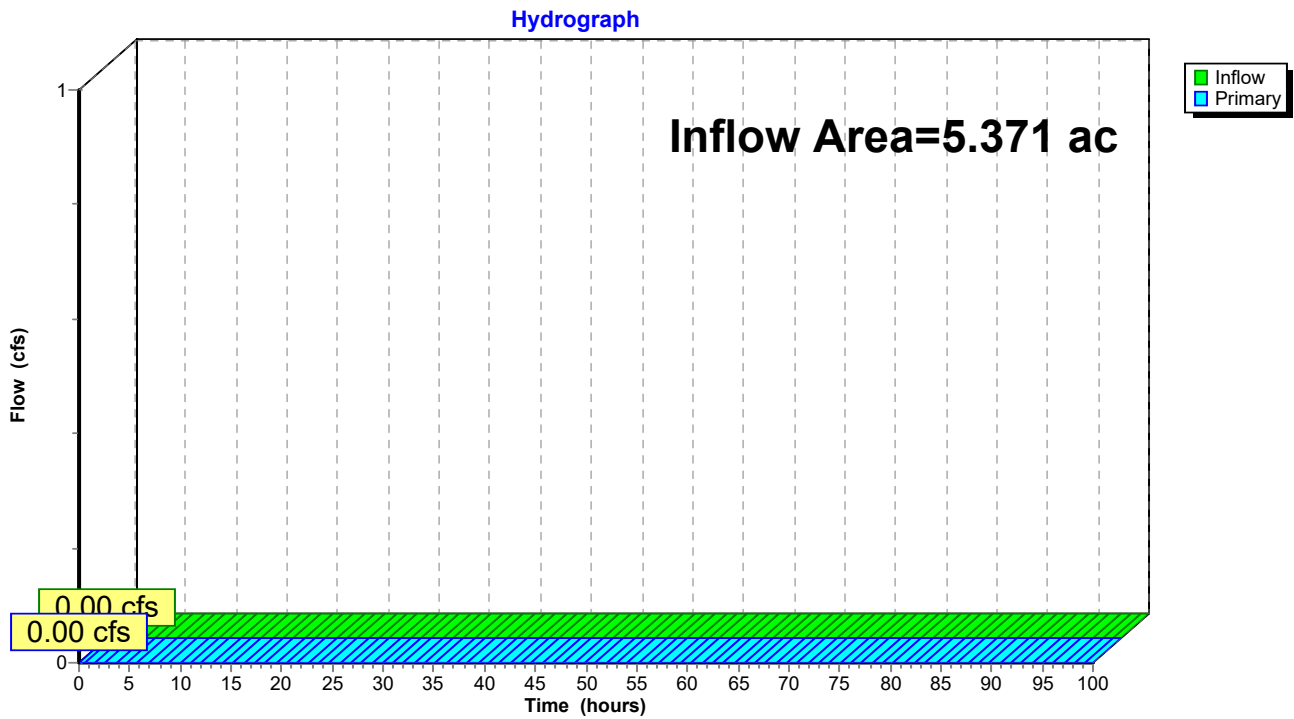
| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
| 307.25              | 0                       | 309.90              | 1,441                   | 312.55              | 11,248                  |
| 307.30              | 1                       | 309.95              | 1,544                   | 312.60              | 11,521                  |
| 307.35              | 3                       | 310.00              | 1,652                   | 312.65              | 11,797                  |
| 307.40              | 4                       | 310.05              | 1,764                   | 312.70              | 12,077                  |
| 307.45              | 6                       | 310.10              | 1,878                   | 312.75              | 12,361                  |
| 307.50              | 8                       | 310.15              | 1,996                   | 312.80              | 12,648                  |
| 307.55              | 10                      | 310.20              | 2,115                   | 312.85              | 12,939                  |
| 307.60              | 13                      | 310.25              | 2,238                   | 312.90              | 13,235                  |
| 307.65              | 15                      | 310.30              | 2,363                   | 312.95              | <b>13,534</b>           |
| 307.70              | 18                      | 310.35              | 2,491                   |                     |                         |
| 307.75              | 22                      | 310.40              | 2,622                   |                     |                         |
| 307.80              | 25                      | 310.45              | 2,756                   |                     |                         |
| 307.85              | 29                      | 310.50              | 2,892                   |                     |                         |
| 307.90              | 34                      | 310.55              | 3,031                   |                     |                         |
| 307.95              | 38                      | 310.60              | 3,173                   |                     |                         |
| 308.00              | 43                      | 310.65              | 3,318                   |                     |                         |
| 308.05              | 52                      | 310.70              | 3,466                   |                     |                         |
| 308.10              | 61                      | 310.75              | 3,617                   |                     |                         |
| 308.15              | 70                      | 310.80              | 3,771                   |                     |                         |
| 308.20              | 81                      | 310.85              | 3,928                   |                     |                         |
| 308.25              | 92                      | 310.90              | 4,088                   |                     |                         |
| 308.30              | 104                     | 310.95              | 4,251                   |                     |                         |
| 308.35              | 117                     | 311.00              | 4,418                   |                     |                         |
| 308.40              | 131                     | 311.05              | 4,588                   |                     |                         |
| 308.45              | 146                     | 311.10              | 4,763                   |                     |                         |
| 308.50              | 161                     | 311.15              | 4,943                   |                     |                         |
| 308.55              | 178                     | 311.20              | 5,127                   |                     |                         |
| 308.60              | 195                     | 311.25              | 5,317                   |                     |                         |
| 308.65              | 214                     | 311.30              | 5,510                   |                     |                         |
| 308.70              | 234                     | 311.35              | 5,706                   |                     |                         |
| 308.75              | 254                     | 311.40              | 5,905                   |                     |                         |
| 308.80              | 276                     | 311.45              | 6,106                   |                     |                         |
| 308.85              | 299                     | 311.50              | 6,309                   |                     |                         |
| 308.90              | 324                     | 311.55              | 6,516                   |                     |                         |
| 308.95              | 349                     | 311.60              | 6,724                   |                     |                         |
| 309.00              | 376                     | 311.65              | 6,936                   |                     |                         |
| 309.05              | 404                     | 311.70              | 7,150                   |                     |                         |
| 309.10              | 436                     | 311.75              | 7,366                   |                     |                         |
| 309.15              | 470                     | 311.80              | 7,586                   |                     |                         |
| 309.20              | 507                     | 311.85              | 7,808                   |                     |                         |
| 309.25              | 548                     | 311.90              | 8,032                   |                     |                         |
| 309.30              | 592                     | 311.95              | 8,260                   |                     |                         |
| 309.35              | 639                     | 312.00              | 8,490                   |                     |                         |
| 309.40              | 691                     | 312.05              | 8,723                   |                     |                         |
| 309.45              | 746                     | 312.10              | 8,960                   |                     |                         |
| 309.50              | 805                     | 312.15              | 9,200                   |                     |                         |
| 309.55              | 868                     | 312.20              | 9,443                   |                     |                         |
| 309.60              | 936                     | 312.25              | 9,690                   |                     |                         |
| 309.65              | 1,008                   | 312.30              | 9,941                   |                     |                         |
| 309.70              | 1,085                   | 312.35              | 10,195                  |                     |                         |
| 309.75              | 1,166                   | 312.40              | 10,453                  |                     |                         |
| 309.80              | 1,253                   | 312.45              | 10,714                  |                     |                         |
| 309.85              | 1,344                   | 312.50              | 10,979                  |                     |                         |

### Summary for Link AP1: Analysis Point 1

Inflow Area = 5.371 ac, 16.16% Impervious, Inflow Depth = 0.00" for WQv event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP1: Analysis Point 1



**Hydrograph for Link AP1: Analysis Point 1**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

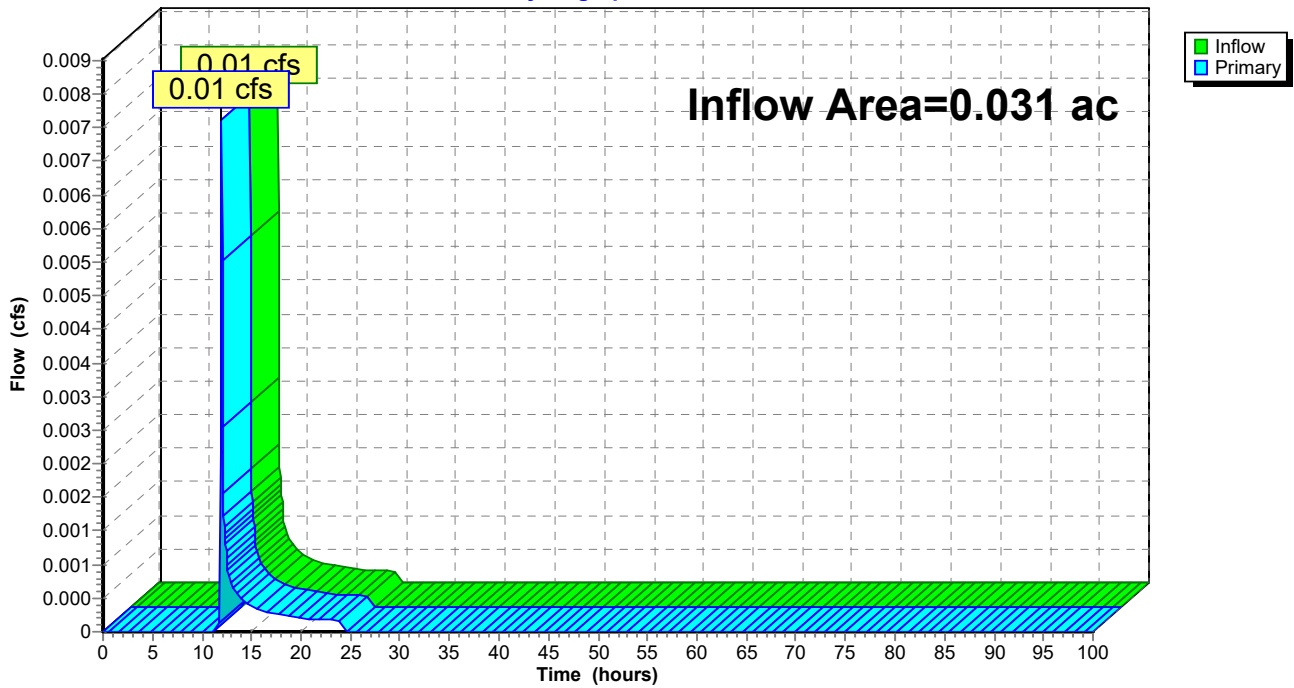
### Summary for Link AP2: Analysis Point 2

Inflow Area = 0.031 ac, 3.23% Impervious, Inflow Depth = 0.17" for WQv event  
Inflow = 0.01 cfs @ 12.00 hrs, Volume= 0.000 af  
Primary = 0.01 cfs @ 12.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP2: Analysis Point 2

Hydrograph



**Hydrograph for Link AP2: Analysis Point 2**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.01</b>  | 0.00             | <b>0.01</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

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**LEGEND**

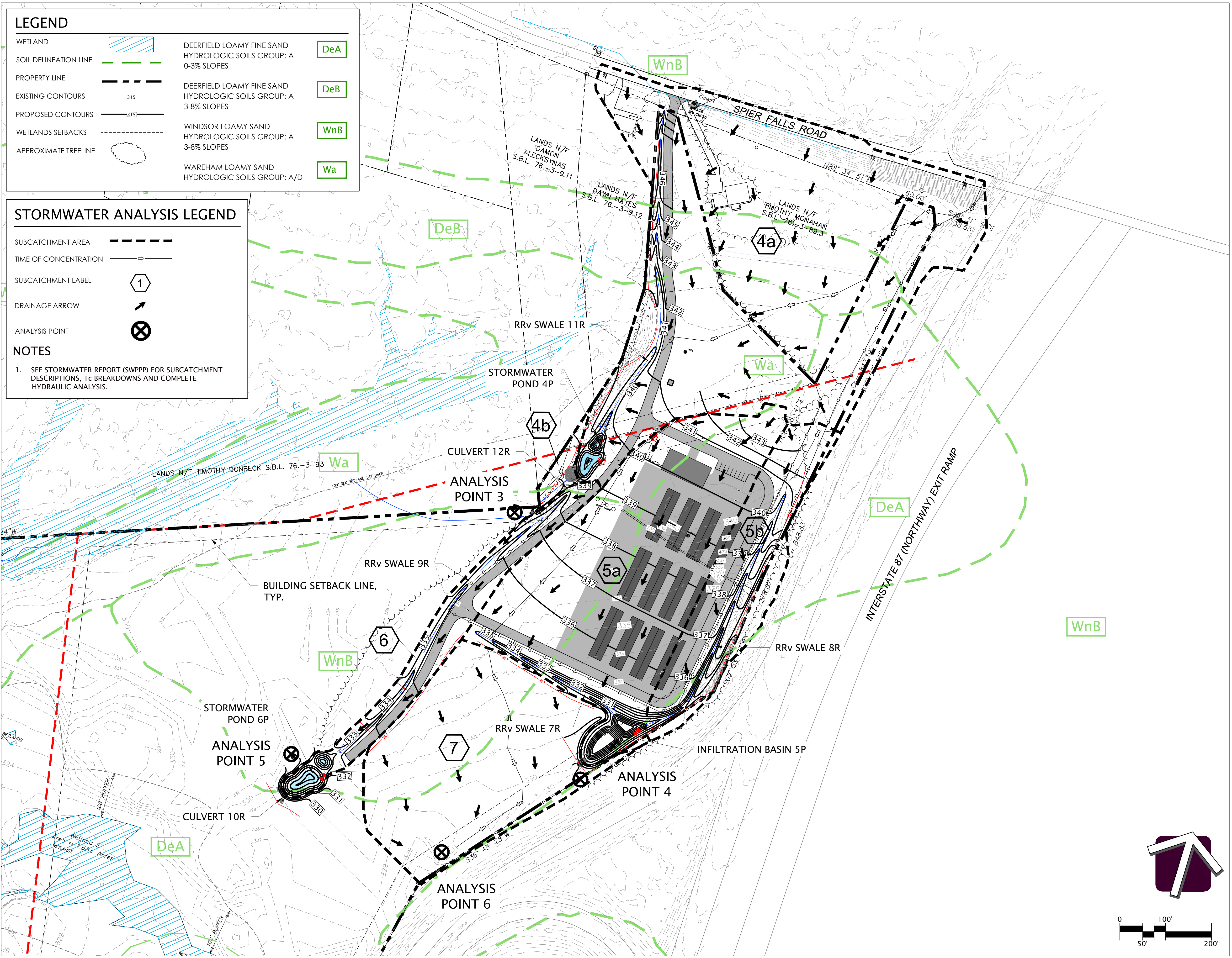
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|-----------------------|--|---|-----|
| WETLAND               |  | DEERFIELD LOAMY FINE SAND HYDROLOGIC SOILS GROUP: A 0-3% SLOPES | DeA |
| SOIL DELINEATION LINE |  | DEERFIELD LOAMY FINE SAND HYDROLOGIC SOILS GROUP: A 3-8% SLOPES | DeB |
| PROPERTY LINE         |  | WINDSOR LOAMY SAND HYDROLOGIC SOILS GROUP: A 3-8% SLOPES        | WnB |
| EXISTING CONTOURS     |  | WAREHAM LOAMY SAND HYDROLOGIC SOILS GROUP: A/D                  | Wa  |
| PROPOSED CONTOURS     |  |   |     |
| WETLANDS SETBACKS     |  |   |     |
| APPROXIMATE TREELINE  |  |   |     |

**STORMWATER ANALYSIS LEGEND**

|                       |  |
|-----------------------|--|
| SUBCATCHMENT AREA     |  |
| TIME OF CONCENTRATION |  |
| SUBCATCHMENT LABEL    |  |
| DRAINAGE ARROW        |  |
| ANALYSIS POINT        |  |

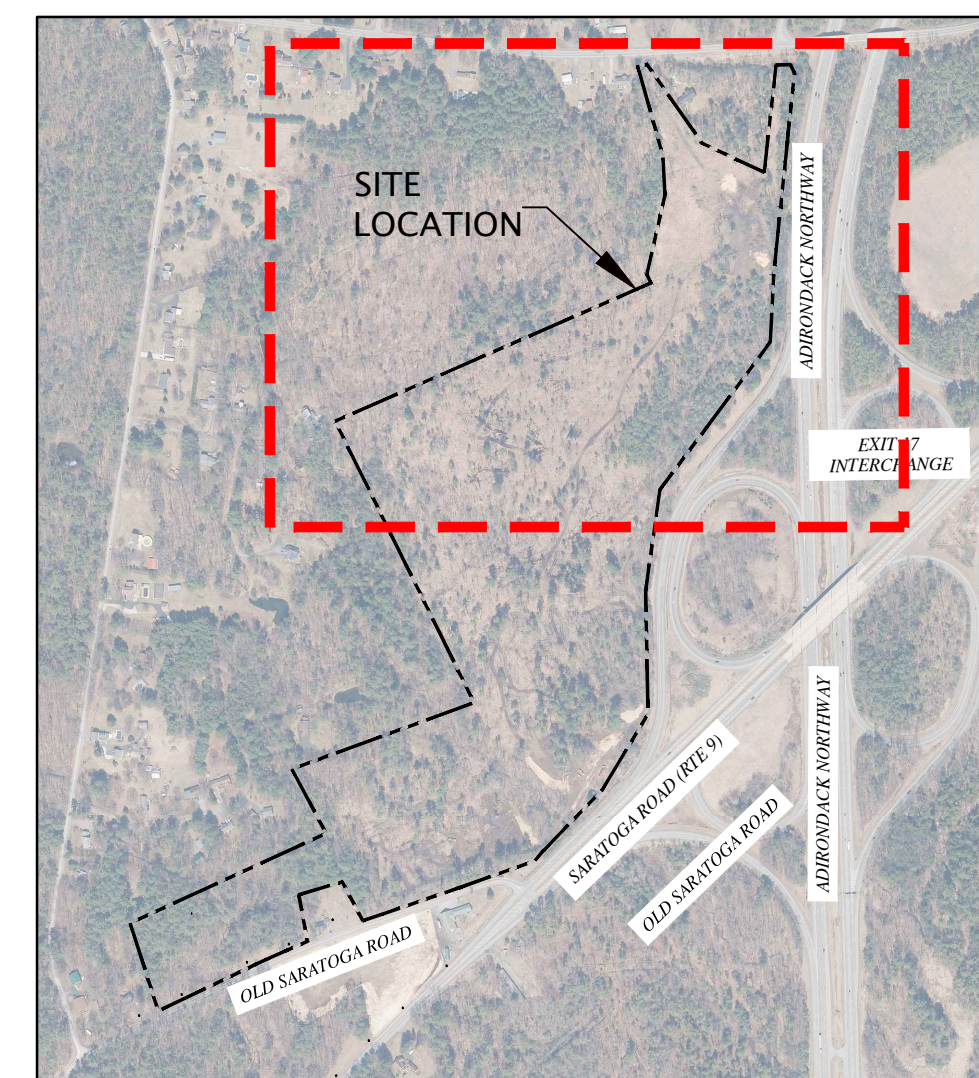
**NOTES**

- SEE STORMWATER REPORT (SWPPP) FOR SUBCATCHMENT DESCRIPTIONS, Tc BREAKDOWNS AND COMPLETE HYDRAULIC ANALYSIS.



PRELIMINARY  
NOT FOR  
CONSTRUCTION

SITE LOCATION MAP  
SCALE: NOT TO SCALE



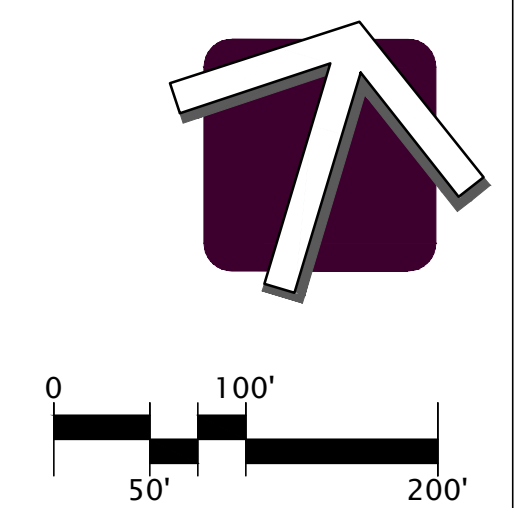
**Shangri-La  
Greenhouses and  
Farmstand**  
 Town of Moreau,  
Saratoga County, New York

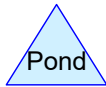
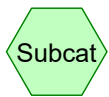
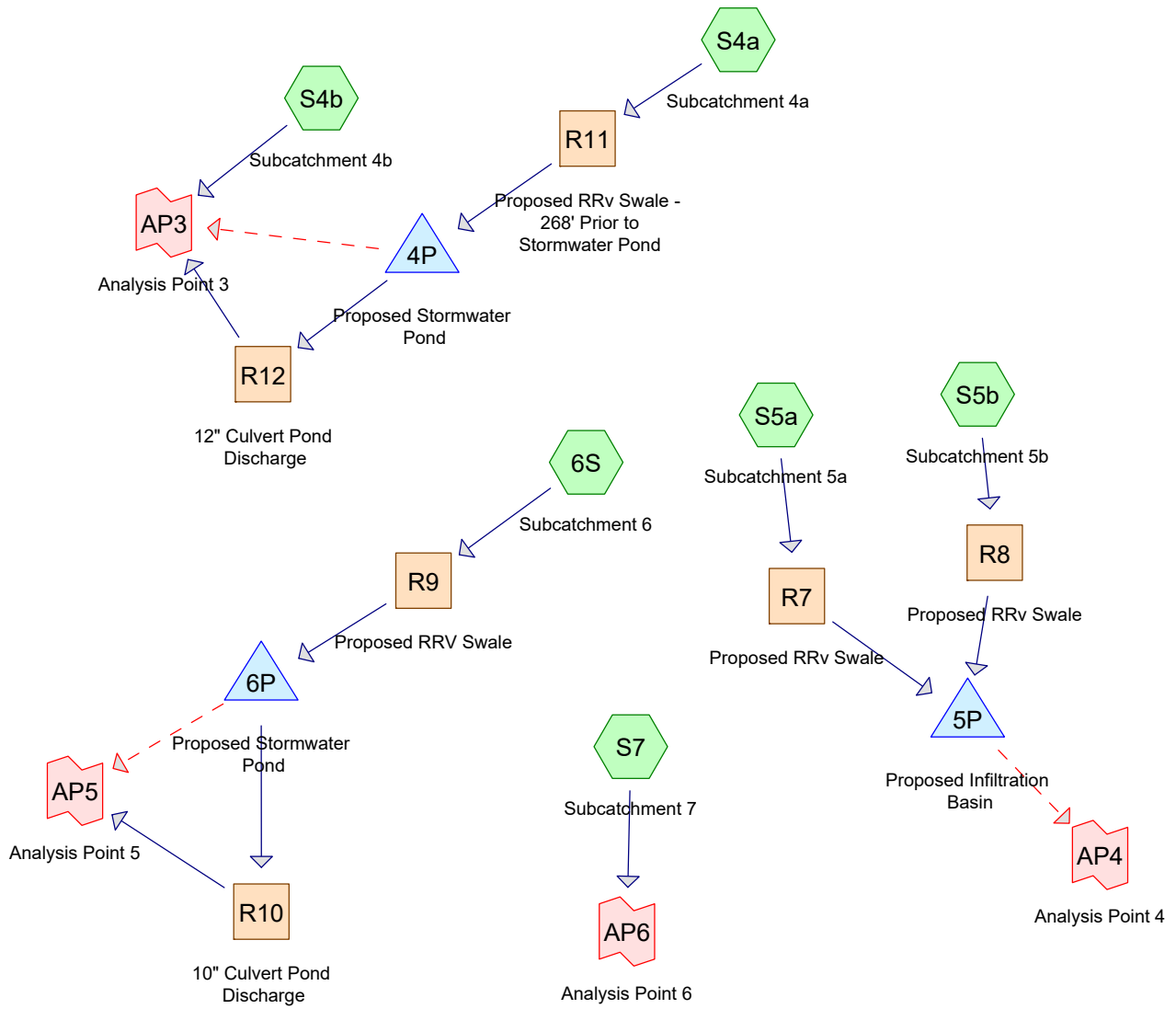
| Date | Revision | Drawn |
|------|----------|-------|
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|      |          |       |
|      |          |       |

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Drawn By: SRZ      Checked By: PL  
 Project No. 420-1096  
 Date: 2024-10-07

**Proposed Stormwater Map  
Greenhouses  
STR-2A**





# 1096 Proposed Stormwater Conditions\_Final D Soils Greenhouses

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## Rainfall Events Listing

| Event# | Event Name | Storm Type    | Curve | Mode    | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1      | 1-yr       | Type II 24-hr |       | Default | 24.00            | 1   | 2.24           | 2   |
| 2      | 10-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 3.72           | 2   |
| 3      | 25-yr      | Type II 24-hr |       | Default | 24.00            | 1   | 4.56           | 2   |
| 4      | 100-yr     | Type II 24-hr |       | Default | 24.00            | 1   | 6.24           | 2   |
| 5      | WQv        | Type II 24-hr |       | Default | 24.00            | 1   | 1.20           | 2   |

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## Area Listing (all nodes)

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)             |
|-----------------|-----------|---|
| 0.681           | 39        | >75% Grass cover, Good, HSG A (S4a)               |
| 2.177           | 80        | >75% Grass cover, Good, HSG D (S4a)               |
| 1.284           | 94        | Fallow, bare soil, HSG D (6S, S4a, S5a)           |
| 4.911           | 30        | Meadow, non-grazed, HSG A (6S, S4a, S5a, S5b, S7) |
| 2.873           | 78        | Meadow, non-grazed, HSG D (6S, S4b, S5a, S7)      |
| 2.376           | 98        | Paved parking, HSG A (S4a, S5a, S5b)              |
| 1.328           | 98        | Paved parking, HSG D (6S, S4a, S5a)               |
| 0.470           | 98        | Paved roads, HSG A (S4a)                          |
| 1.146           | 98        | Roofs, HSG A (S4a, S5a, S5b)                      |
| 0.153           | 98        | Roofs, HSG D (S4a, S5a)                           |
| 0.088           | 98        | Water Surface, HSG D (6S, S4a)                    |
| 5.087           | 30        | Woods, Good, HSG A (S4a, S5a, S5b)                |
| 0.633           | 77        | Woods, Good, HSG D (S4a, S4b)                     |
| <b>23.207</b>   | <b>62</b> | <b>TOTAL AREA</b>                                 |

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## Soil Listing (all nodes)

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 14.671          | HSG A         | 6S, S4a, S5a, S5b, S7   |
| 0.000           | HSG B         |                         |
| 0.000           | HSG C         |                         |
| 8.536           | HSG D         | 6S, S4a, S4b, S5a, S7   |
| 0.000           | Other         |                         |
| <b>23.207</b>   |               | <b>TOTAL AREA</b>       |

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## Ground Covers (all nodes)

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover        | Subcatchment<br>Numbers             |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------------|-------------------------------------|
| 0.681            | 0.000            | 0.000            | 2.177            | 0.000            | 2.858            | >75% Grass cover, Good | S4a                                 |
| 0.000            | 0.000            | 0.000            | 1.284            | 0.000            | 1.284            | Fallow, bare soil      | 6S, S4a,<br>S5a                     |
| 4.911            | 0.000            | 0.000            | 2.873            | 0.000            | 7.784            | Meadow, non-grazed     | 6S, S4a,<br>S4b,<br>S5a,<br>S5b, S7 |
| 2.376            | 0.000            | 0.000            | 1.328            | 0.000            | 3.704            | Paved parking          | 6S, S4a,<br>S5a, S5b                |
| 0.470            | 0.000            | 0.000            | 0.000            | 0.000            | 0.470            | Paved roads            | S4a                                 |
| 1.146            | 0.000            | 0.000            | 0.153            | 0.000            | 1.299            | Roofs                  | S4a,<br>S5a, S5b                    |
| 0.000            | 0.000            | 0.000            | 0.088            | 0.000            | 0.088            | Water Surface          | 6S, S4a                             |
| 5.087            | 0.000            | 0.000            | 0.633            | 0.000            | 5.720            | Woods, Good            | S4a,<br>S4b,<br>S5a, S5b            |
| <b>14.671</b>    | <b>0.000</b>     | <b>0.000</b>     | <b>8.536</b>     | <b>0.000</b>     | <b>23.207</b>    | <b>TOTAL AREA</b>      |                                     |



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## Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n     | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) | Node Name |
|-------|-------------|------------------|-------------------|---------------|---------------|-------|----------------|----------------------|----------------------|-----------|
| 1     | R10         | 329.33           | 329.00            | 27.0          | 0.0122        | 0.012 | 0.0            | 10.0                 | 0.0                  |           |
| 2     | R12         | 337.01           | 337.00            | 137.0         | 0.0001        | 0.012 | 0.0            | 12.0                 | 0.0                  |           |

**1096 Proposed Stormwater Conditions\_Final D Soils GreType II 24-hr 1-yr Rainfall=2.24"**

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|  |   |
|--|---|
| <b>Subcatchment 6S: Subcatchment 6</b>       | Runoff Area=1.299 ac 35.18% Impervious Runoff Depth=0.98"<br>Flow Length=73' Tc=9.6 min CN=85 Runoff=1.95 cfs 0.106 af  |
| <b>Subcatchment S4a: Subcatchment 4a</b>     | Runoff Area=10.222 ac 13.62% Impervious Runoff Depth=0.02"<br>Flow Length=907' Tc=38.7 min CN=53 Runoff=0.03 cfs 0.020 af                                     |
| <b>Subcatchment S4b: Subcatchment 4b</b>     | Runoff Area=0.188 ac 0.00% Impervious Runoff Depth=0.58"<br>Tc=6.0 min CN=77 Runoff=0.18 cfs 0.009 af   |
| <b>Subcatchment S5a: Subcatchment 5a</b>     | Runoff Area=5.515 ac 54.87% Impervious Runoff Depth=0.98"<br>Flow Length=634' Tc=17.7 min CN=85 Runoff=6.31 cfs 0.448 af                                      |
| <b>Subcatchment S5b: Subcatchment 5b</b>     | Runoff Area=2.075 ac 33.06% Impervious Runoff Depth=0.02"<br>Flow Length=207' Tc=68.8 min CN=52 Runoff=0.00 cfs 0.003 af                                      |
| <b>Subcatchment S7: Subcatchment 7</b>       | Runoff Area=3.908 ac 0.00% Impervious Runoff Depth=0.01"<br>Flow Length=531' Tc=19.9 min CN=50 Runoff=0.00 cfs 0.002 af                                       |
| <b>Reach R10: 10" Culvert Pond Discharge</b> | Avg. Flow Depth=0.11' Max Vel=2.27 fps Inflow=0.09 cfs 0.105 af<br>10.0" Round Pipe n=0.012 L=27.0' S=0.0122 '/' Capacity=2.62 cfs Outflow=0.09 cfs 0.105 af  |
| <b>Reach R11: Proposed RRv Swale - 268'</b>  | Avg. Flow Depth=0.04' Max Vel=0.32 fps Inflow=0.03 cfs 0.020 af<br>n=0.035 L=268.0' S=0.0047 '/' Capacity=16.83 cfs Outflow=0.03 cfs 0.020 af                 |
| <b>Reach R12: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=0.18' Max Vel=0.24 fps Inflow=0.02 cfs 0.019 af<br>12.0" Round Pipe n=0.012 L=137.0' S=0.0001 '/' Capacity=0.33 cfs Outflow=0.02 cfs 0.019 af |
| <b>Reach R7: Proposed RRv Swale</b>          | Avg. Flow Depth=0.72' Max Vel=1.34 fps Inflow=6.31 cfs 0.448 af<br>n=0.080 L=318.0' S=0.0126 '/' Capacity=35.37 cfs Outflow=5.95 cfs 0.448 af                 |
| <b>Reach R8: Proposed RRv Swale</b>          | Avg. Flow Depth=0.01' Max Vel=0.14 fps Inflow=0.00 cfs 0.003 af<br>n=0.080 L=568.0' S=0.0158 '/' Capacity=8.32 cfs Outflow=0.00 cfs 0.003 af                  |
| <b>Reach R9: Proposed RRV Swale</b>          | Avg. Flow Depth=0.46' Max Vel=0.64 fps Inflow=1.95 cfs 0.106 af<br>n=0.080 L=764.0' S=0.0056 '/' Capacity=8.04 cfs Outflow=1.00 cfs 0.106 af                  |
| <b>Pond 4P: Proposed Stormwater Pond</b>     | Peak Elev=337.20' Storage=1,753 cf Inflow=0.03 cfs 0.020 af<br>Primary=0.02 cfs 0.019 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.019 af                |
| <b>Pond 5P: Proposed Infiltration Basin</b>  | Peak Elev=326.44' Storage=1,444 cf Inflow=5.95 cfs 0.451 af<br>Discarded=4.35 cfs 0.451 af Secondary=0.00 cfs 0.000 af Outflow=4.35 cfs 0.451 af              |
| <b>Pond 6P: Proposed Stormwater Pond</b>     | Peak Elev=330.28' Storage=4,143 cf Inflow=1.00 cfs 0.106 af<br>Primary=0.09 cfs 0.105 af Secondary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.105 af                |
| <b>Link AP3: Analysis Point 3</b>            | Inflow=0.18 cfs 0.028 af<br>Primary=0.18 cfs 0.028 af   |

**Link AP4: Analysis Point 4**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP5: Analysis Point 5**

Inflow=0.09 cfs 0.105 af  
Primary=0.09 cfs 0.105 af

**Link AP6: Analysis Point 6**

Inflow=0.00 cfs 0.002 af  
Primary=0.00 cfs 0.002 af

**Total Runoff Area = 23.207 ac Runoff Volume = 0.587 af Average Runoff Depth = 0.30"**  
**76.04% Pervious = 17.646 ac 23.96% Impervious = 5.561 ac**

**Summary for Subcatchment 6S: Subcatchment 6**

Runoff = 1.95 cfs @ 12.01 hrs, Volume= 0.106 af, Depth= 0.98"  
 Routed to Reach R9 : Proposed RRV Swale

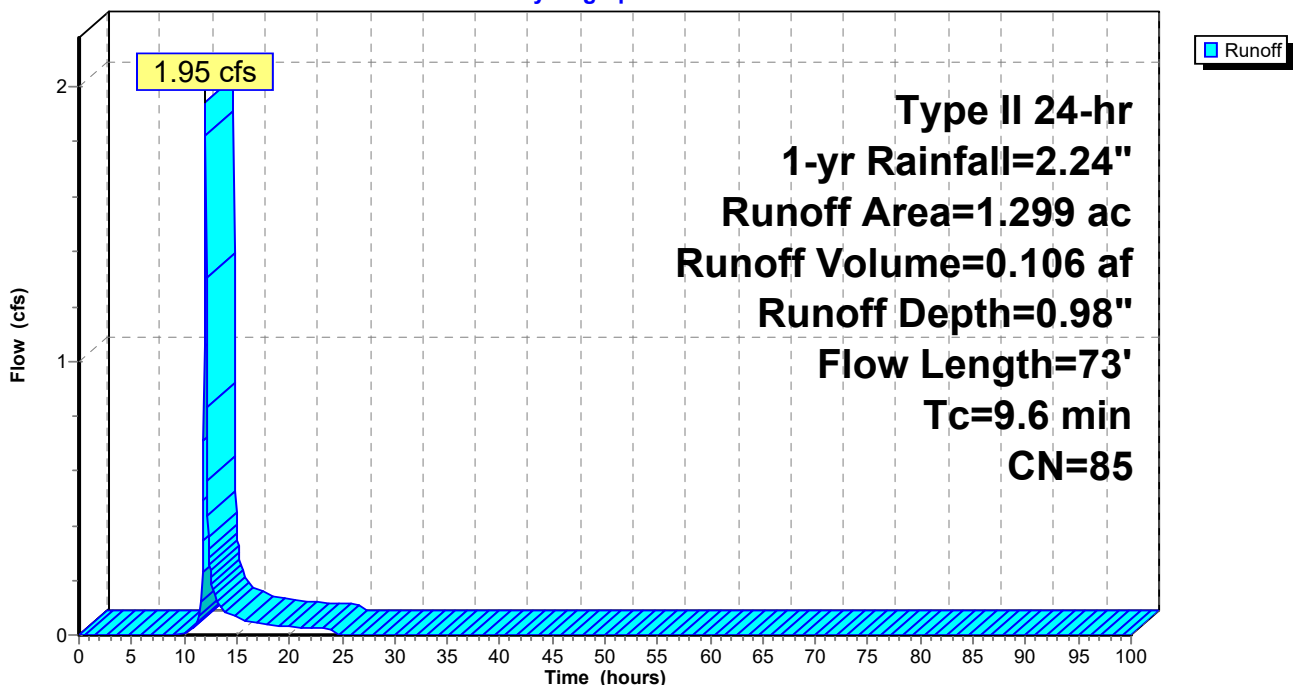
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.411     | 98 | Paved parking, HSG D      |
| 0.021     | 30 | Meadow, non-grazed, HSG A |
| 0.057     | 94 | Fallow, bare soil, HSG D  |
| 0.764     | 78 | Meadow, non-grazed, HSG D |
| * 0.046   | 98 | Water Surface, HSG D      |
| 1.299     | 85 | Weighted Average          |
| 0.842     |    | 64.82% Pervious Area      |
| 0.457     |    | 35.18% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.6      | 65            | 0.0154        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59" |
| 1.0      | 8             | 0.1328        | 0.14              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59" |
| 9.6      | 73            | Total         |                   |                |  |

**Subcatchment 6S: Subcatchment 6**

Hydrograph



**Hydrograph for Subcatchment 6S: Subcatchment 6**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.98            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.98            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.98            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.98            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.98            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.98            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.98            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.98            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.98            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.98            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.98            | 0.00         |
| 11.00        | 0.53             | 0.02            | 0.03         | 64.00        | 2.24             | 0.98            | 0.00         |
| 12.00        | 1.49             | 0.44            | <b>1.93</b>  | 65.00        | 2.24             | 0.98            | 0.00         |
| 13.00        | 1.73             | 0.60            | 0.14         | 66.00        | 2.24             | 0.98            | 0.00         |
| 14.00        | 1.84             | 0.68            | 0.08         | 67.00        | 2.24             | 0.98            | 0.00         |
| 15.00        | 1.91             | 0.73            | 0.07         | 68.00        | 2.24             | 0.98            | 0.00         |
| 16.00        | 1.97             | 0.77            | 0.05         | 69.00        | 2.24             | 0.98            | 0.00         |
| 17.00        | 2.02             | 0.81            | 0.04         | 70.00        | 2.24             | 0.98            | 0.00         |
| 18.00        | 2.06             | 0.84            | 0.04         | 71.00        | 2.24             | 0.98            | 0.00         |
| 19.00        | 2.10             | 0.87            | 0.03         | 72.00        | 2.24             | 0.98            | 0.00         |
| 20.00        | 2.13             | 0.89            | 0.03         | 73.00        | 2.24             | 0.98            | 0.00         |
| 21.00        | 2.16             | 0.92            | 0.03         | 74.00        | 2.24             | 0.98            | 0.00         |
| 22.00        | 2.19             | 0.94            | 0.03         | 75.00        | 2.24             | 0.98            | 0.00         |
| 23.00        | 2.21             | 0.96            | 0.03         | 76.00        | 2.24             | 0.98            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.98</b>     | 0.02         | 77.00        | 2.24             | 0.98            | 0.00         |
| 25.00        | 2.24             | 0.98            | 0.00         | 78.00        | 2.24             | 0.98            | 0.00         |
| 26.00        | 2.24             | 0.98            | 0.00         | 79.00        | 2.24             | 0.98            | 0.00         |
| 27.00        | 2.24             | 0.98            | 0.00         | 80.00        | 2.24             | 0.98            | 0.00         |
| 28.00        | 2.24             | 0.98            | 0.00         | 81.00        | 2.24             | 0.98            | 0.00         |
| 29.00        | 2.24             | 0.98            | 0.00         | 82.00        | 2.24             | 0.98            | 0.00         |
| 30.00        | 2.24             | 0.98            | 0.00         | 83.00        | 2.24             | 0.98            | 0.00         |
| 31.00        | 2.24             | 0.98            | 0.00         | 84.00        | 2.24             | 0.98            | 0.00         |
| 32.00        | 2.24             | 0.98            | 0.00         | 85.00        | 2.24             | 0.98            | 0.00         |
| 33.00        | 2.24             | 0.98            | 0.00         | 86.00        | 2.24             | 0.98            | 0.00         |
| 34.00        | 2.24             | 0.98            | 0.00         | 87.00        | 2.24             | 0.98            | 0.00         |
| 35.00        | 2.24             | 0.98            | 0.00         | 88.00        | 2.24             | 0.98            | 0.00         |
| 36.00        | 2.24             | 0.98            | 0.00         | 89.00        | 2.24             | 0.98            | 0.00         |
| 37.00        | 2.24             | 0.98            | 0.00         | 90.00        | 2.24             | 0.98            | 0.00         |
| 38.00        | 2.24             | 0.98            | 0.00         | 91.00        | 2.24             | 0.98            | 0.00         |
| 39.00        | 2.24             | 0.98            | 0.00         | 92.00        | 2.24             | 0.98            | 0.00         |
| 40.00        | 2.24             | 0.98            | 0.00         | 93.00        | 2.24             | 0.98            | 0.00         |
| 41.00        | 2.24             | 0.98            | 0.00         | 94.00        | 2.24             | 0.98            | 0.00         |
| 42.00        | 2.24             | 0.98            | 0.00         | 95.00        | 2.24             | 0.98            | 0.00         |
| 43.00        | 2.24             | 0.98            | 0.00         | 96.00        | 2.24             | 0.98            | 0.00         |
| 44.00        | 2.24             | 0.98            | 0.00         | 97.00        | 2.24             | 0.98            | 0.00         |
| 45.00        | 2.24             | 0.98            | 0.00         | 98.00        | 2.24             | 0.98            | 0.00         |
| 46.00        | 2.24             | 0.98            | 0.00         | 99.00        | 2.24             | 0.98            | 0.00         |
| 47.00        | 2.24             | 0.98            | 0.00         | 100.00       | 2.24             | 0.98            | 0.00         |
| 48.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 0.03 cfs @ 18.46 hrs, Volume= 0.020 af, Depth= 0.02"

Routed to Reach R11 : Proposed RRv Swale - 268' Prior to Stormwater Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| * 0.470   | 98 | Paved roads, HSG A            |
| 0.681     | 39 | >75% Grass cover, Good, HSG A |
| 0.818     | 30 | Meadow, non-grazed, HSG A     |
| 0.105     | 98 | Roofs, HSG A                  |
| 0.331     | 98 | Paved parking, HSG A          |
| 0.247     | 98 | Paved parking, HSG D          |
| 4.615     | 30 | Woods, Good, HSG A            |
| 0.519     | 77 | Woods, Good, HSG D            |
| 0.020     | 94 | Fallow, bare soil, HSG D      |
| 2.177     | 80 | >75% Grass cover, Good, HSG D |
| 0.118     | 98 | Roofs, HSG D                  |
| 0.079     | 98 | Paved parking, HSG D          |
| 0.042     | 98 | Water Surface, HSG D          |
| 10.222    | 53 | Weighted Average              |
| 8.830     |    | 86.38% Pervious Area          |
| 1.392     |    | 13.62% Impervious Area        |

**1096 Proposed Stormwater Conditions\_Final D Soils GreType II 24-hr 1-yr Rainfall=2.24"**

Prepared by CLA Site

Printed 12/13/2024

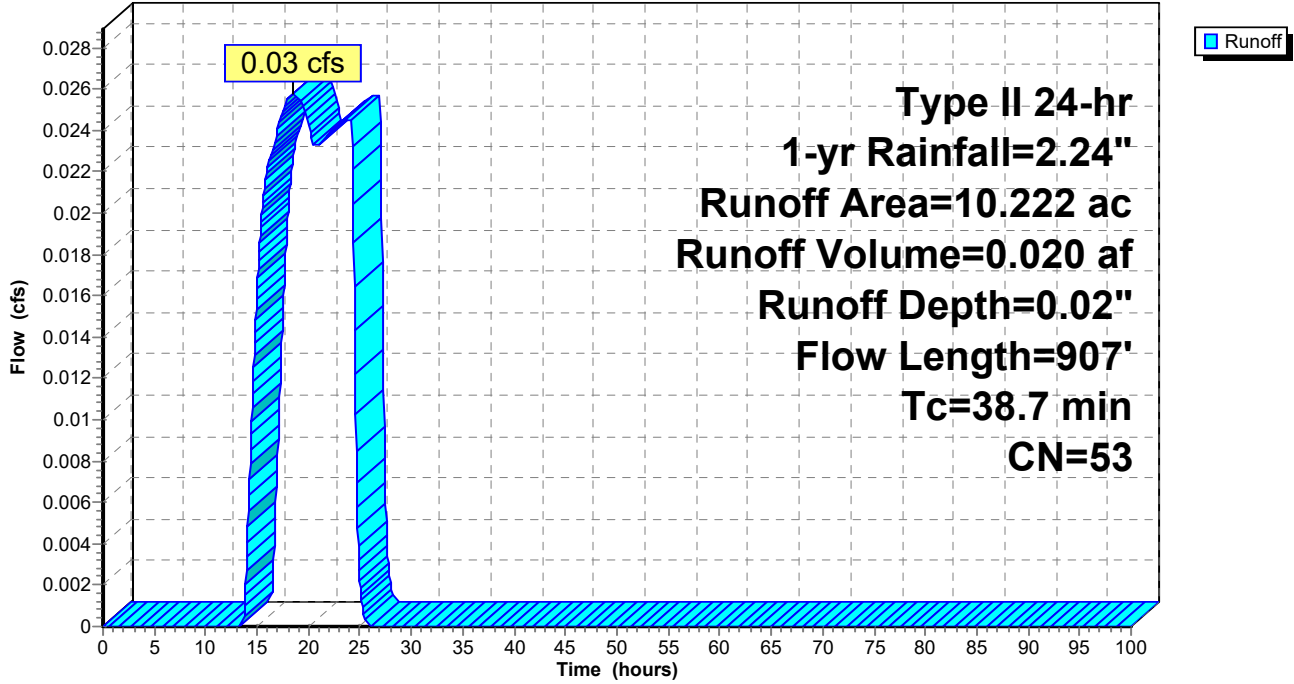
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.7         | 172              | 0.0028           | 0.37                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.4         | 46               | 0.0100           | 2.03                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1         | 9                | 0.0890           | 2.09                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2         | 17               | 0.0360           | 1.33                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 38.7        | 907              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph





**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.02            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.02            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.02            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.02            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.02            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.02            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.02            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.02            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.02            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.02            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.02            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.02            | 0.00         |
| 12.00        | 1.49             | 0.00            | 0.00         | 65.00        | 2.24             | 0.02            | 0.00         |
| 13.00        | 1.73             | 0.00            | 0.00         | 66.00        | 2.24             | 0.02            | 0.00         |
| 14.00        | 1.84             | 0.00            | 0.00         | 67.00        | 2.24             | 0.02            | 0.00         |
| 15.00        | 1.91             | 0.00            | 0.02         | 68.00        | 2.24             | 0.02            | 0.00         |
| 16.00        | 1.97             | 0.00            | 0.02         | 69.00        | 2.24             | 0.02            | 0.00         |
| 17.00        | 2.02             | 0.01            | 0.02         | 70.00        | 2.24             | 0.02            | 0.00         |
| 18.00        | 2.06             | 0.01            | <b>0.03</b>  | 71.00        | 2.24             | 0.02            | 0.00         |
| 19.00        | 2.10             | 0.01            | <b>0.03</b>  | 72.00        | 2.24             | 0.02            | 0.00         |
| 20.00        | 2.13             | 0.01            | 0.02         | 73.00        | 2.24             | 0.02            | 0.00         |
| 21.00        | 2.16             | 0.02            | 0.02         | 74.00        | 2.24             | 0.02            | 0.00         |
| 22.00        | 2.19             | 0.02            | 0.02         | 75.00        | 2.24             | 0.02            | 0.00         |
| 23.00        | 2.21             | 0.02            | 0.02         | 76.00        | 2.24             | 0.02            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.02</b>     | 0.02         | 77.00        | 2.24             | 0.02            | 0.00         |
| 25.00        | 2.24             | 0.02            | 0.00         | 78.00        | 2.24             | 0.02            | 0.00         |
| 26.00        | 2.24             | 0.02            | 0.00         | 79.00        | 2.24             | 0.02            | 0.00         |
| 27.00        | 2.24             | 0.02            | 0.00         | 80.00        | 2.24             | 0.02            | 0.00         |
| 28.00        | 2.24             | 0.02            | 0.00         | 81.00        | 2.24             | 0.02            | 0.00         |
| 29.00        | 2.24             | 0.02            | 0.00         | 82.00        | 2.24             | 0.02            | 0.00         |
| 30.00        | 2.24             | 0.02            | 0.00         | 83.00        | 2.24             | 0.02            | 0.00         |
| 31.00        | 2.24             | 0.02            | 0.00         | 84.00        | 2.24             | 0.02            | 0.00         |
| 32.00        | 2.24             | 0.02            | 0.00         | 85.00        | 2.24             | 0.02            | 0.00         |
| 33.00        | 2.24             | 0.02            | 0.00         | 86.00        | 2.24             | 0.02            | 0.00         |
| 34.00        | 2.24             | 0.02            | 0.00         | 87.00        | 2.24             | 0.02            | 0.00         |
| 35.00        | 2.24             | 0.02            | 0.00         | 88.00        | 2.24             | 0.02            | 0.00         |
| 36.00        | 2.24             | 0.02            | 0.00         | 89.00        | 2.24             | 0.02            | 0.00         |
| 37.00        | 2.24             | 0.02            | 0.00         | 90.00        | 2.24             | 0.02            | 0.00         |
| 38.00        | 2.24             | 0.02            | 0.00         | 91.00        | 2.24             | 0.02            | 0.00         |
| 39.00        | 2.24             | 0.02            | 0.00         | 92.00        | 2.24             | 0.02            | 0.00         |
| 40.00        | 2.24             | 0.02            | 0.00         | 93.00        | 2.24             | 0.02            | 0.00         |
| 41.00        | 2.24             | 0.02            | 0.00         | 94.00        | 2.24             | 0.02            | 0.00         |
| 42.00        | 2.24             | 0.02            | 0.00         | 95.00        | 2.24             | 0.02            | 0.00         |
| 43.00        | 2.24             | 0.02            | 0.00         | 96.00        | 2.24             | 0.02            | 0.00         |
| 44.00        | 2.24             | 0.02            | 0.00         | 97.00        | 2.24             | 0.02            | 0.00         |
| 45.00        | 2.24             | 0.02            | 0.00         | 98.00        | 2.24             | 0.02            | 0.00         |
| 46.00        | 2.24             | 0.02            | 0.00         | 99.00        | 2.24             | 0.02            | 0.00         |
| 47.00        | 2.24             | 0.02            | 0.00         | 100.00       | 2.24             | 0.02            | 0.00         |
| 48.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 0.18 cfs @ 11.98 hrs, Volume= 0.009 af, Depth= 0.58"  
 Routed to Link AP3 : Analysis Point 3

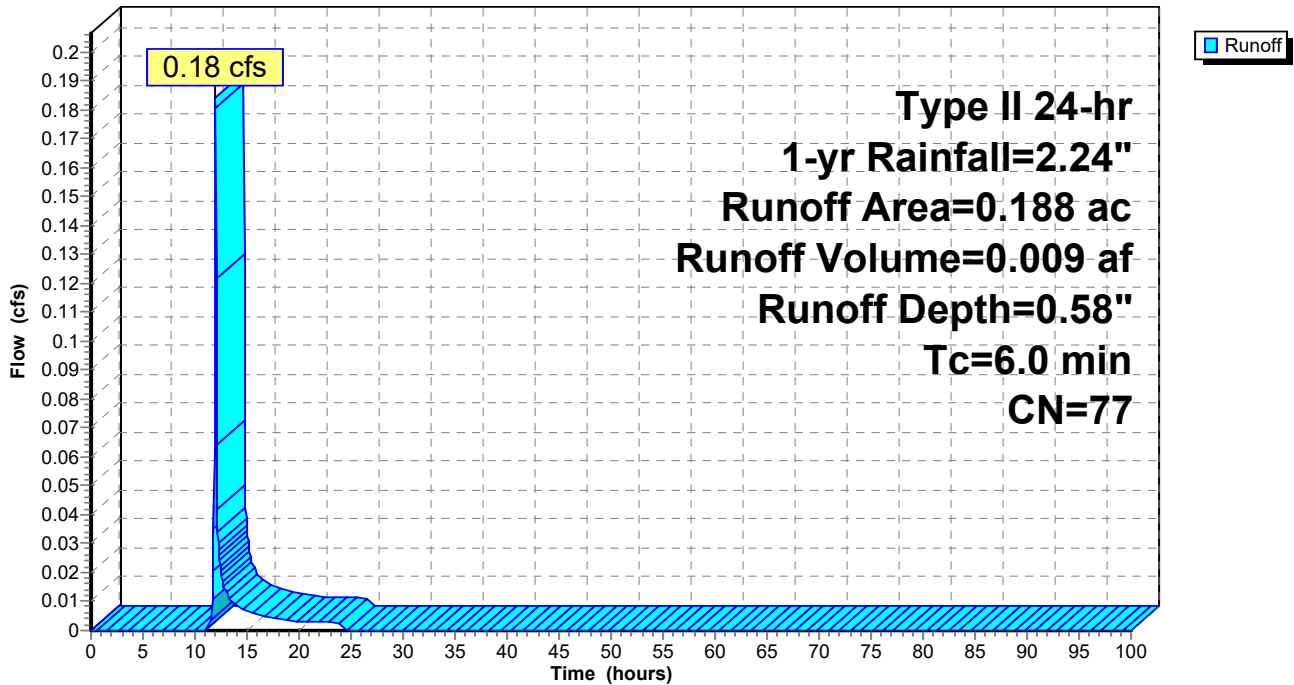
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.114     | 77 | Woods, Good, HSG D        |
| 0.074     | 78 | Meadow, non-grazed, HSG D |
| 0.188     | 77 | Weighted Average          |
| 0.188     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Hydro Flow |

**Subcatchment S4b: Subcatchment 4b**

Hydrograph



**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.58            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.58            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.58            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.58            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.58            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.58            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.58            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.58            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.58            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.58            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.58            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.58            | 0.00         |
| 12.00        | 1.49             | 0.20            | <b>0.18</b>  | 65.00        | 2.24             | 0.58            | 0.00         |
| 13.00        | 1.73             | 0.31            | 0.01         | 66.00        | 2.24             | 0.58            | 0.00         |
| 14.00        | 1.84             | 0.36            | 0.01         | 67.00        | 2.24             | 0.58            | 0.00         |
| 15.00        | 1.91             | 0.40            | 0.01         | 68.00        | 2.24             | 0.58            | 0.00         |
| 16.00        | 1.97             | 0.43            | 0.01         | 69.00        | 2.24             | 0.58            | 0.00         |
| 17.00        | 2.02             | 0.46            | 0.00         | 70.00        | 2.24             | 0.58            | 0.00         |
| 18.00        | 2.06             | 0.48            | 0.00         | 71.00        | 2.24             | 0.58            | 0.00         |
| 19.00        | 2.10             | 0.50            | 0.00         | 72.00        | 2.24             | 0.58            | 0.00         |
| 20.00        | 2.13             | 0.52            | 0.00         | 73.00        | 2.24             | 0.58            | 0.00         |
| 21.00        | 2.16             | 0.54            | 0.00         | 74.00        | 2.24             | 0.58            | 0.00         |
| 22.00        | 2.19             | 0.55            | 0.00         | 75.00        | 2.24             | 0.58            | 0.00         |
| 23.00        | 2.21             | 0.57            | 0.00         | 76.00        | 2.24             | 0.58            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.58</b>     | 0.00         | 77.00        | 2.24             | 0.58            | 0.00         |
| 25.00        | 2.24             | 0.58            | 0.00         | 78.00        | 2.24             | 0.58            | 0.00         |
| 26.00        | 2.24             | 0.58            | 0.00         | 79.00        | 2.24             | 0.58            | 0.00         |
| 27.00        | 2.24             | 0.58            | 0.00         | 80.00        | 2.24             | 0.58            | 0.00         |
| 28.00        | 2.24             | 0.58            | 0.00         | 81.00        | 2.24             | 0.58            | 0.00         |
| 29.00        | 2.24             | 0.58            | 0.00         | 82.00        | 2.24             | 0.58            | 0.00         |
| 30.00        | 2.24             | 0.58            | 0.00         | 83.00        | 2.24             | 0.58            | 0.00         |
| 31.00        | 2.24             | 0.58            | 0.00         | 84.00        | 2.24             | 0.58            | 0.00         |
| 32.00        | 2.24             | 0.58            | 0.00         | 85.00        | 2.24             | 0.58            | 0.00         |
| 33.00        | 2.24             | 0.58            | 0.00         | 86.00        | 2.24             | 0.58            | 0.00         |
| 34.00        | 2.24             | 0.58            | 0.00         | 87.00        | 2.24             | 0.58            | 0.00         |
| 35.00        | 2.24             | 0.58            | 0.00         | 88.00        | 2.24             | 0.58            | 0.00         |
| 36.00        | 2.24             | 0.58            | 0.00         | 89.00        | 2.24             | 0.58            | 0.00         |
| 37.00        | 2.24             | 0.58            | 0.00         | 90.00        | 2.24             | 0.58            | 0.00         |
| 38.00        | 2.24             | 0.58            | 0.00         | 91.00        | 2.24             | 0.58            | 0.00         |
| 39.00        | 2.24             | 0.58            | 0.00         | 92.00        | 2.24             | 0.58            | 0.00         |
| 40.00        | 2.24             | 0.58            | 0.00         | 93.00        | 2.24             | 0.58            | 0.00         |
| 41.00        | 2.24             | 0.58            | 0.00         | 94.00        | 2.24             | 0.58            | 0.00         |
| 42.00        | 2.24             | 0.58            | 0.00         | 95.00        | 2.24             | 0.58            | 0.00         |
| 43.00        | 2.24             | 0.58            | 0.00         | 96.00        | 2.24             | 0.58            | 0.00         |
| 44.00        | 2.24             | 0.58            | 0.00         | 97.00        | 2.24             | 0.58            | 0.00         |
| 45.00        | 2.24             | 0.58            | 0.00         | 98.00        | 2.24             | 0.58            | 0.00         |
| 46.00        | 2.24             | 0.58            | 0.00         | 99.00        | 2.24             | 0.58            | 0.00         |
| 47.00        | 2.24             | 0.58            | 0.00         | 100.00       | 2.24             | 0.58            | 0.00         |
| 48.00        | 2.24             | 0.58            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.58            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.58            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.58            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.58            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S5a: Subcatchment 5a**

Runoff = 6.31 cfs @ 12.11 hrs, Volume= 0.448 af, Depth= 0.98"  
 Routed to Reach R7 : Proposed RRv Swale

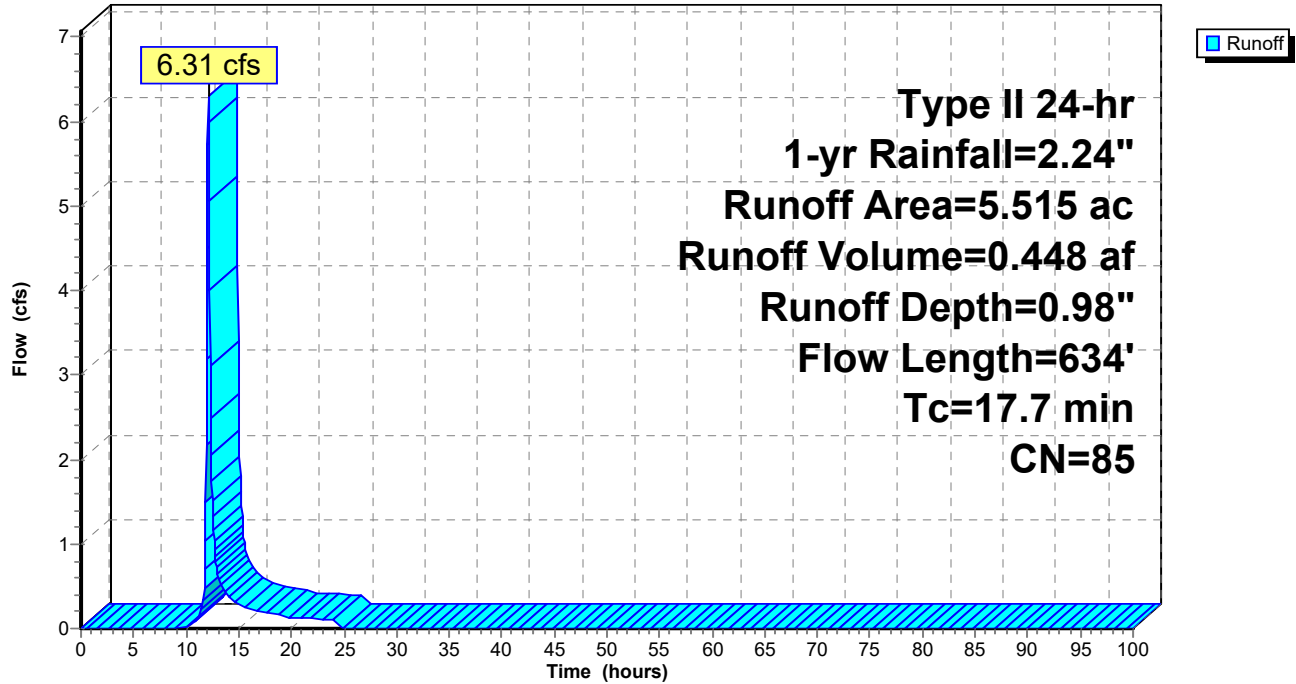
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.428     | 78 | Meadow, non-grazed, HSG D |
| 0.591     | 98 | Paved parking, HSG D      |
| 0.921     | 98 | Roofs, HSG A              |
| 0.035     | 98 | Roofs, HSG D              |
| 1.479     | 98 | Paved parking, HSG A      |
| 1.207     | 94 | Fallow, bare soil, HSG D  |
| 0.830     | 30 | Meadow, non-grazed, HSG A |
| 0.024     | 30 | Woods, Good, HSG A        |
| 5.515     | 85 | Weighted Average          |
| 2.489     |    | 45.13% Pervious Area      |
| 3.026     |    | 54.87% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 4.2      | 22            | 0.0080        | 0.09              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                           |
| 0.6      | 24            | 0.0080        | 0.64              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 3.9      | 53            | 0.0080        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.4      | 22            | 0.0080        | 0.89              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 7.9      | 473           | 0.0100        | 1.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.2      | 21            | 0.0100        | 2.03              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps                  |
| 0.5      | 19            | 0.0070        | 0.59              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 17.7     | 634           | Total         |                   |                |   |

### Subcatchment S5a: Subcatchment 5a

Hydrograph



**Hydrograph for Subcatchment S5a: Subcatchment 5a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.98            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.98            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.98            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.98            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.98            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.98            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.98            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.98            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.98            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.98            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.01         | 63.00        | 2.24             | 0.98            | 0.00         |
| 11.00        | 0.53             | 0.02            | 0.10         | 64.00        | 2.24             | 0.98            | 0.00         |
| 12.00        | 1.49             | 0.44            | <b>4.50</b>  | 65.00        | 2.24             | 0.98            | 0.00         |
| 13.00        | 1.73             | 0.60            | <b>0.64</b>  | 66.00        | 2.24             | 0.98            | 0.00         |
| 14.00        | 1.84             | 0.68            | 0.37         | 67.00        | 2.24             | 0.98            | 0.00         |
| 15.00        | 1.91             | 0.73            | 0.28         | 68.00        | 2.24             | 0.98            | 0.00         |
| 16.00        | 1.97             | 0.77            | 0.23         | 69.00        | 2.24             | 0.98            | 0.00         |
| 17.00        | 2.02             | 0.81            | 0.19         | 70.00        | 2.24             | 0.98            | 0.00         |
| 18.00        | 2.06             | 0.84            | 0.17         | 71.00        | 2.24             | 0.98            | 0.00         |
| 19.00        | 2.10             | 0.87            | 0.15         | 72.00        | 2.24             | 0.98            | 0.00         |
| 20.00        | 2.13             | 0.89            | 0.13         | 73.00        | 2.24             | 0.98            | 0.00         |
| 21.00        | 2.16             | 0.92            | 0.12         | 74.00        | 2.24             | 0.98            | 0.00         |
| 22.00        | 2.19             | 0.94            | 0.11         | 75.00        | 2.24             | 0.98            | 0.00         |
| 23.00        | 2.21             | 0.96            | 0.11         | 76.00        | 2.24             | 0.98            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.98</b>     | 0.11         | 77.00        | 2.24             | 0.98            | 0.00         |
| 25.00        | 2.24             | 0.98            | 0.00         | 78.00        | 2.24             | 0.98            | 0.00         |
| 26.00        | 2.24             | 0.98            | 0.00         | 79.00        | 2.24             | 0.98            | 0.00         |
| 27.00        | 2.24             | 0.98            | 0.00         | 80.00        | 2.24             | 0.98            | 0.00         |
| 28.00        | 2.24             | 0.98            | 0.00         | 81.00        | 2.24             | 0.98            | 0.00         |
| 29.00        | 2.24             | 0.98            | 0.00         | 82.00        | 2.24             | 0.98            | 0.00         |
| 30.00        | 2.24             | 0.98            | 0.00         | 83.00        | 2.24             | 0.98            | 0.00         |
| 31.00        | 2.24             | 0.98            | 0.00         | 84.00        | 2.24             | 0.98            | 0.00         |
| 32.00        | 2.24             | 0.98            | 0.00         | 85.00        | 2.24             | 0.98            | 0.00         |
| 33.00        | 2.24             | 0.98            | 0.00         | 86.00        | 2.24             | 0.98            | 0.00         |
| 34.00        | 2.24             | 0.98            | 0.00         | 87.00        | 2.24             | 0.98            | 0.00         |
| 35.00        | 2.24             | 0.98            | 0.00         | 88.00        | 2.24             | 0.98            | 0.00         |
| 36.00        | 2.24             | 0.98            | 0.00         | 89.00        | 2.24             | 0.98            | 0.00         |
| 37.00        | 2.24             | 0.98            | 0.00         | 90.00        | 2.24             | 0.98            | 0.00         |
| 38.00        | 2.24             | 0.98            | 0.00         | 91.00        | 2.24             | 0.98            | 0.00         |
| 39.00        | 2.24             | 0.98            | 0.00         | 92.00        | 2.24             | 0.98            | 0.00         |
| 40.00        | 2.24             | 0.98            | 0.00         | 93.00        | 2.24             | 0.98            | 0.00         |
| 41.00        | 2.24             | 0.98            | 0.00         | 94.00        | 2.24             | 0.98            | 0.00         |
| 42.00        | 2.24             | 0.98            | 0.00         | 95.00        | 2.24             | 0.98            | 0.00         |
| 43.00        | 2.24             | 0.98            | 0.00         | 96.00        | 2.24             | 0.98            | 0.00         |
| 44.00        | 2.24             | 0.98            | 0.00         | 97.00        | 2.24             | 0.98            | 0.00         |
| 45.00        | 2.24             | 0.98            | 0.00         | 98.00        | 2.24             | 0.98            | 0.00         |
| 46.00        | 2.24             | 0.98            | 0.00         | 99.00        | 2.24             | 0.98            | 0.00         |
| 47.00        | 2.24             | 0.98            | 0.00         | 100.00       | 2.24             | 0.98            | 0.00         |
| 48.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.98            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S5b: Subcatchment 5b**

Runoff = 0.00 cfs @ 24.12 hrs, Volume= 0.003 af, Depth= 0.02"  
 Routed to Reach R8 : Proposed RRv Swale

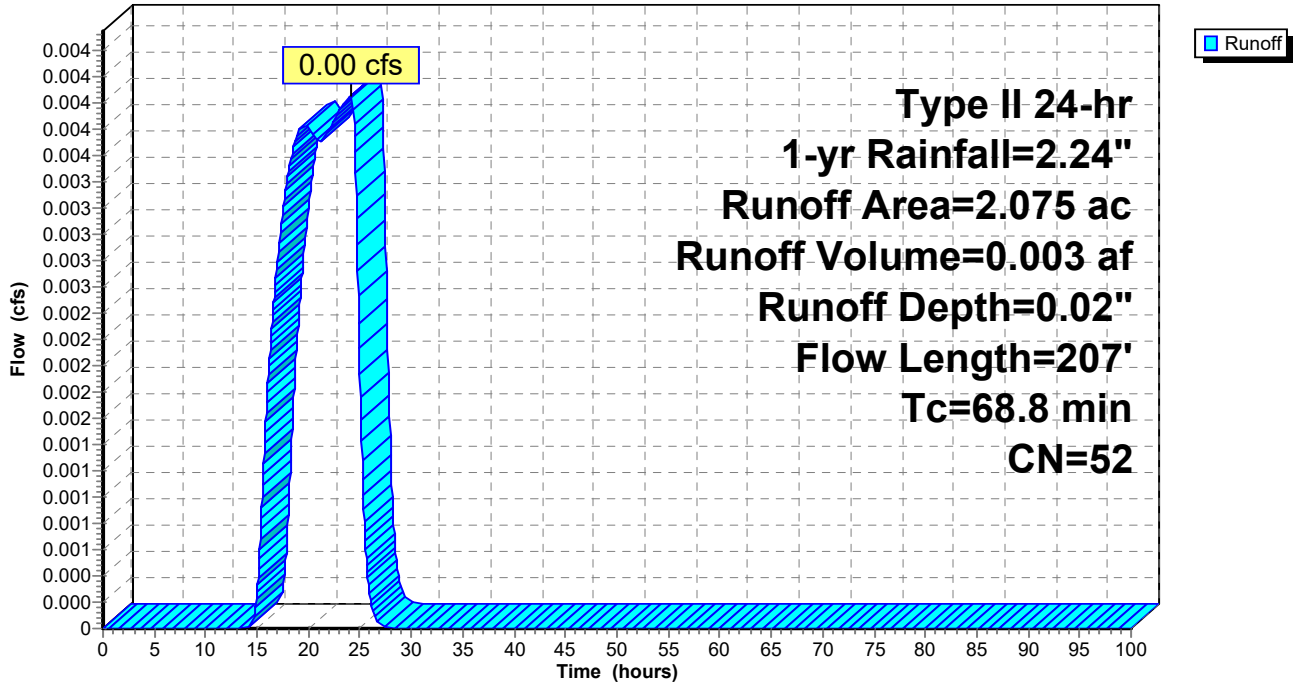
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.448     | 30 | Woods, Good, HSG A        |
| 0.120     | 98 | Roofs, HSG A              |
| 0.566     | 98 | Paved parking, HSG A      |
| 0.941     | 30 | Meadow, non-grazed, HSG A |
| 2.075     | 52 | Weighted Average          |
| 1.389     |    | 66.94% Pervious Area      |
| 0.686     |    | 33.06% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 22.3     | 46            | 0.0200        | 0.03              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 44.2     | 54            | 0.0050        | 0.02              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 1.0      | 21            | 0.0050        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.7      | 33            | 0.0130        | 0.80              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.6      | 53            | 0.0385        | 1.37              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 68.8     | 207           | Total         |                   |                |   |

### Subcatchment S5b: Subcatchment 5b

Hydrograph





**Hydrograph for Subcatchment S5b: Subcatchment 5b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.02            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.02            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.02            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.02            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.02            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.02            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.02            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.02            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.02            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.02            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.02            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.02            | 0.00         |
| 12.00        | 1.49             | 0.00            | 0.00         | 65.00        | 2.24             | 0.02            | 0.00         |
| 13.00        | 1.73             | 0.00            | 0.00         | 66.00        | 2.24             | 0.02            | 0.00         |
| 14.00        | 1.84             | 0.00            | 0.00         | 67.00        | 2.24             | 0.02            | 0.00         |
| 15.00        | 1.91             | 0.00            | 0.00         | 68.00        | 2.24             | 0.02            | 0.00         |
| 16.00        | 1.97             | 0.00            | 0.00         | 69.00        | 2.24             | 0.02            | 0.00         |
| 17.00        | 2.02             | 0.00            | 0.00         | 70.00        | 2.24             | 0.02            | 0.00         |
| 18.00        | 2.06             | 0.00            | 0.00         | 71.00        | 2.24             | 0.02            | 0.00         |
| 19.00        | 2.10             | 0.01            | 0.00         | 72.00        | 2.24             | 0.02            | 0.00         |
| 20.00        | 2.13             | 0.01            | 0.00         | 73.00        | 2.24             | 0.02            | 0.00         |
| 21.00        | 2.16             | 0.01            | 0.00         | 74.00        | 2.24             | 0.02            | 0.00         |
| 22.00        | 2.19             | 0.01            | 0.00         | 75.00        | 2.24             | 0.02            | 0.00         |
| 23.00        | 2.21             | 0.01            | 0.00         | 76.00        | 2.24             | 0.02            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.02</b>     | <b>0.00</b>  | 77.00        | 2.24             | 0.02            | 0.00         |
| 25.00        | 2.24             | 0.02            | <b>0.00</b>  | 78.00        | 2.24             | 0.02            | 0.00         |
| 26.00        | 2.24             | 0.02            | 0.00         | 79.00        | 2.24             | 0.02            | 0.00         |
| 27.00        | 2.24             | 0.02            | 0.00         | 80.00        | 2.24             | 0.02            | 0.00         |
| 28.00        | 2.24             | 0.02            | 0.00         | 81.00        | 2.24             | 0.02            | 0.00         |
| 29.00        | 2.24             | 0.02            | 0.00         | 82.00        | 2.24             | 0.02            | 0.00         |
| 30.00        | 2.24             | 0.02            | 0.00         | 83.00        | 2.24             | 0.02            | 0.00         |
| 31.00        | 2.24             | 0.02            | 0.00         | 84.00        | 2.24             | 0.02            | 0.00         |
| 32.00        | 2.24             | 0.02            | 0.00         | 85.00        | 2.24             | 0.02            | 0.00         |
| 33.00        | 2.24             | 0.02            | 0.00         | 86.00        | 2.24             | 0.02            | 0.00         |
| 34.00        | 2.24             | 0.02            | 0.00         | 87.00        | 2.24             | 0.02            | 0.00         |
| 35.00        | 2.24             | 0.02            | 0.00         | 88.00        | 2.24             | 0.02            | 0.00         |
| 36.00        | 2.24             | 0.02            | 0.00         | 89.00        | 2.24             | 0.02            | 0.00         |
| 37.00        | 2.24             | 0.02            | 0.00         | 90.00        | 2.24             | 0.02            | 0.00         |
| 38.00        | 2.24             | 0.02            | 0.00         | 91.00        | 2.24             | 0.02            | 0.00         |
| 39.00        | 2.24             | 0.02            | 0.00         | 92.00        | 2.24             | 0.02            | 0.00         |
| 40.00        | 2.24             | 0.02            | 0.00         | 93.00        | 2.24             | 0.02            | 0.00         |
| 41.00        | 2.24             | 0.02            | 0.00         | 94.00        | 2.24             | 0.02            | 0.00         |
| 42.00        | 2.24             | 0.02            | 0.00         | 95.00        | 2.24             | 0.02            | 0.00         |
| 43.00        | 2.24             | 0.02            | 0.00         | 96.00        | 2.24             | 0.02            | 0.00         |
| 44.00        | 2.24             | 0.02            | 0.00         | 97.00        | 2.24             | 0.02            | 0.00         |
| 45.00        | 2.24             | 0.02            | 0.00         | 98.00        | 2.24             | 0.02            | 0.00         |
| 46.00        | 2.24             | 0.02            | 0.00         | 99.00        | 2.24             | 0.02            | 0.00         |
| 47.00        | 2.24             | 0.02            | 0.00         | 100.00       | 2.24             | 0.02            | 0.00         |
| 48.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.02            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S7: Subcatchment 7**

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.002 af, Depth= 0.01"  
 Routed to Link AP6 : Analysis Point 6

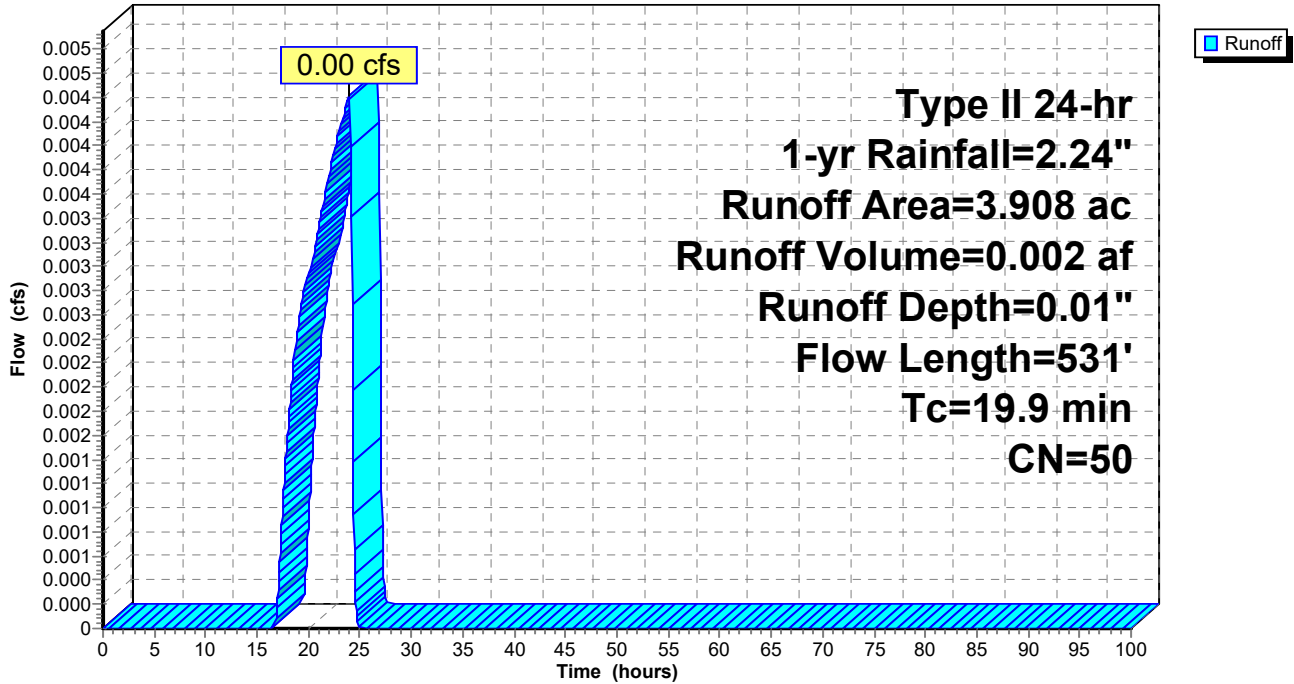
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-yr Rainfall=2.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 2.301     | 30 | Meadow, non-grazed, HSG A |
| 1.607     | 78 | Meadow, non-grazed, HSG D |
| 3.908     | 50 | Weighted Average          |
| 3.908     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.8      | 12            | 0.0195        | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 8.6      | 88            | 0.0209        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0209        | 1.01              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.2      | 150           | 0.0126        | 0.79              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.8      | 50            | 0.0221        | 1.04              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 91            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.2      | 84            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 19.9     | 531           | Total         |                   |                |   |

### Subcatchment S7: Subcatchment 7

Hydrograph



**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 2.24             | 0.01            | 0.00         |
| 1.00         | 0.02             | 0.00            | 0.00         | 54.00        | 2.24             | 0.01            | 0.00         |
| 2.00         | 0.05             | 0.00            | 0.00         | 55.00        | 2.24             | 0.01            | 0.00         |
| 3.00         | 0.08             | 0.00            | 0.00         | 56.00        | 2.24             | 0.01            | 0.00         |
| 4.00         | 0.11             | 0.00            | 0.00         | 57.00        | 2.24             | 0.01            | 0.00         |
| 5.00         | 0.14             | 0.00            | 0.00         | 58.00        | 2.24             | 0.01            | 0.00         |
| 6.00         | 0.18             | 0.00            | 0.00         | 59.00        | 2.24             | 0.01            | 0.00         |
| 7.00         | 0.22             | 0.00            | 0.00         | 60.00        | 2.24             | 0.01            | 0.00         |
| 8.00         | 0.27             | 0.00            | 0.00         | 61.00        | 2.24             | 0.01            | 0.00         |
| 9.00         | 0.33             | 0.00            | 0.00         | 62.00        | 2.24             | 0.01            | 0.00         |
| 10.00        | 0.41             | 0.00            | 0.00         | 63.00        | 2.24             | 0.01            | 0.00         |
| 11.00        | 0.53             | 0.00            | 0.00         | 64.00        | 2.24             | 0.01            | 0.00         |
| 12.00        | 1.49             | 0.00            | 0.00         | 65.00        | 2.24             | 0.01            | 0.00         |
| 13.00        | 1.73             | 0.00            | 0.00         | 66.00        | 2.24             | 0.01            | 0.00         |
| 14.00        | 1.84             | 0.00            | 0.00         | 67.00        | 2.24             | 0.01            | 0.00         |
| 15.00        | 1.91             | 0.00            | 0.00         | 68.00        | 2.24             | 0.01            | 0.00         |
| 16.00        | 1.97             | 0.00            | 0.00         | 69.00        | 2.24             | 0.01            | 0.00         |
| 17.00        | 2.02             | 0.00            | 0.00         | 70.00        | 2.24             | 0.01            | 0.00         |
| 18.00        | 2.06             | 0.00            | 0.00         | 71.00        | 2.24             | 0.01            | 0.00         |
| 19.00        | 2.10             | 0.00            | 0.00         | 72.00        | 2.24             | 0.01            | 0.00         |
| 20.00        | 2.13             | 0.00            | 0.00         | 73.00        | 2.24             | 0.01            | 0.00         |
| 21.00        | 2.16             | 0.00            | 0.00         | 74.00        | 2.24             | 0.01            | 0.00         |
| 22.00        | 2.19             | 0.00            | 0.00         | 75.00        | 2.24             | 0.01            | 0.00         |
| 23.00        | 2.21             | 0.00            | 0.00         | 76.00        | 2.24             | 0.01            | 0.00         |
| 24.00        | <b>2.24</b>      | <b>0.01</b>     | <b>0.00</b>  | 77.00        | 2.24             | 0.01            | 0.00         |
| 25.00        | 2.24             | 0.01            | 0.00         | 78.00        | 2.24             | 0.01            | 0.00         |
| 26.00        | 2.24             | 0.01            | 0.00         | 79.00        | 2.24             | 0.01            | 0.00         |
| 27.00        | 2.24             | 0.01            | 0.00         | 80.00        | 2.24             | 0.01            | 0.00         |
| 28.00        | 2.24             | 0.01            | 0.00         | 81.00        | 2.24             | 0.01            | 0.00         |
| 29.00        | 2.24             | 0.01            | 0.00         | 82.00        | 2.24             | 0.01            | 0.00         |
| 30.00        | 2.24             | 0.01            | 0.00         | 83.00        | 2.24             | 0.01            | 0.00         |
| 31.00        | 2.24             | 0.01            | 0.00         | 84.00        | 2.24             | 0.01            | 0.00         |
| 32.00        | 2.24             | 0.01            | 0.00         | 85.00        | 2.24             | 0.01            | 0.00         |
| 33.00        | 2.24             | 0.01            | 0.00         | 86.00        | 2.24             | 0.01            | 0.00         |
| 34.00        | 2.24             | 0.01            | 0.00         | 87.00        | 2.24             | 0.01            | 0.00         |
| 35.00        | 2.24             | 0.01            | 0.00         | 88.00        | 2.24             | 0.01            | 0.00         |
| 36.00        | 2.24             | 0.01            | 0.00         | 89.00        | 2.24             | 0.01            | 0.00         |
| 37.00        | 2.24             | 0.01            | 0.00         | 90.00        | 2.24             | 0.01            | 0.00         |
| 38.00        | 2.24             | 0.01            | 0.00         | 91.00        | 2.24             | 0.01            | 0.00         |
| 39.00        | 2.24             | 0.01            | 0.00         | 92.00        | 2.24             | 0.01            | 0.00         |
| 40.00        | 2.24             | 0.01            | 0.00         | 93.00        | 2.24             | 0.01            | 0.00         |
| 41.00        | 2.24             | 0.01            | 0.00         | 94.00        | 2.24             | 0.01            | 0.00         |
| 42.00        | 2.24             | 0.01            | 0.00         | 95.00        | 2.24             | 0.01            | 0.00         |
| 43.00        | 2.24             | 0.01            | 0.00         | 96.00        | 2.24             | 0.01            | 0.00         |
| 44.00        | 2.24             | 0.01            | 0.00         | 97.00        | 2.24             | 0.01            | 0.00         |
| 45.00        | 2.24             | 0.01            | 0.00         | 98.00        | 2.24             | 0.01            | 0.00         |
| 46.00        | 2.24             | 0.01            | 0.00         | 99.00        | 2.24             | 0.01            | 0.00         |
| 47.00        | 2.24             | 0.01            | 0.00         | 100.00       | 2.24             | 0.01            | 0.00         |
| 48.00        | 2.24             | 0.01            | 0.00         |              |                  |                 |              |
| 49.00        | 2.24             | 0.01            | 0.00         |              |                  |                 |              |
| 50.00        | 2.24             | 0.01            | 0.00         |              |                  |                 |              |
| 51.00        | 2.24             | 0.01            | 0.00         |              |                  |                 |              |
| 52.00        | 2.24             | 0.01            | 0.00         |              |                  |                 |              |

### Summary for Reach R10: 10" Culvert Pond Discharge

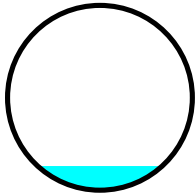
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 0.97" for 1-yr event  
Inflow = 0.09 cfs @ 14.25 hrs, Volume= 0.105 af  
Outflow = 0.09 cfs @ 14.26 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.1 min  
Routed to Link AP5 : Analysis Point 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 2.27 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.06 fps, Avg. Travel Time= 0.4 min

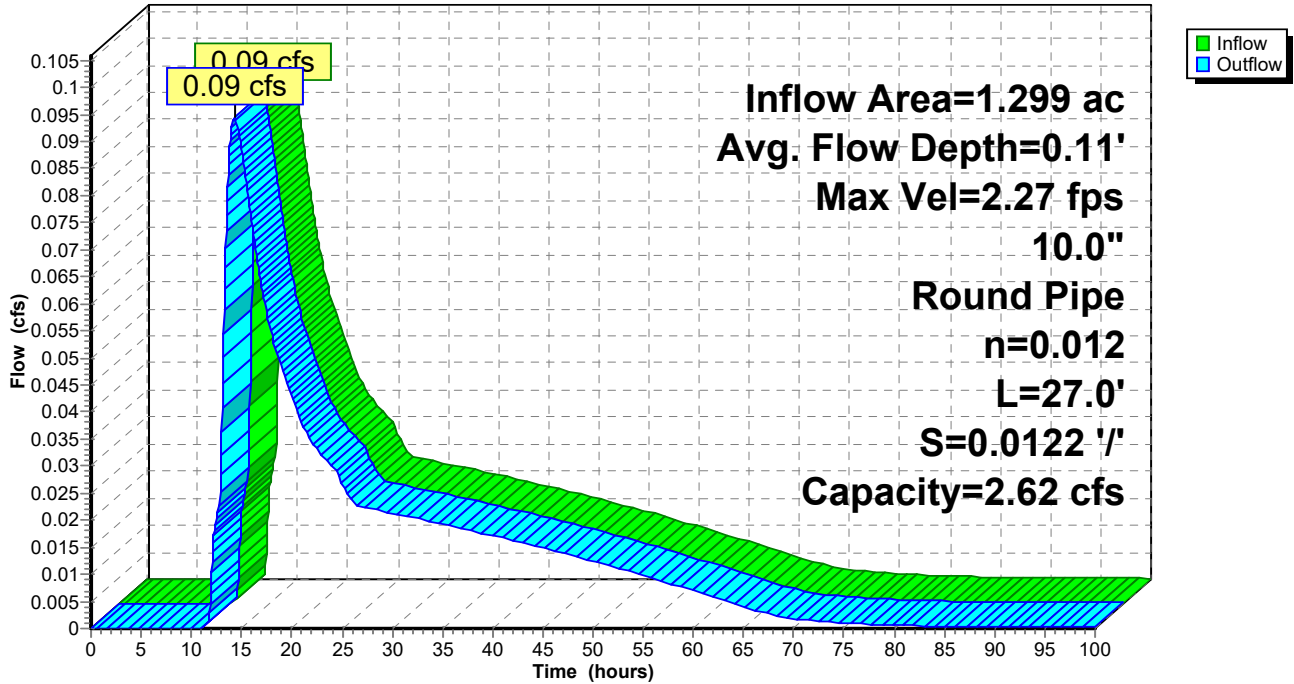
Peak Storage= 1 cf @ 14.26 hrs  
Average Depth at Peak Storage= 0.11' , Surface Width= 0.56'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.62 cfs

10.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 27.0' Slope= 0.0122 '/  
Inlet Invert= 329.33', Outlet Invert= 329.00'



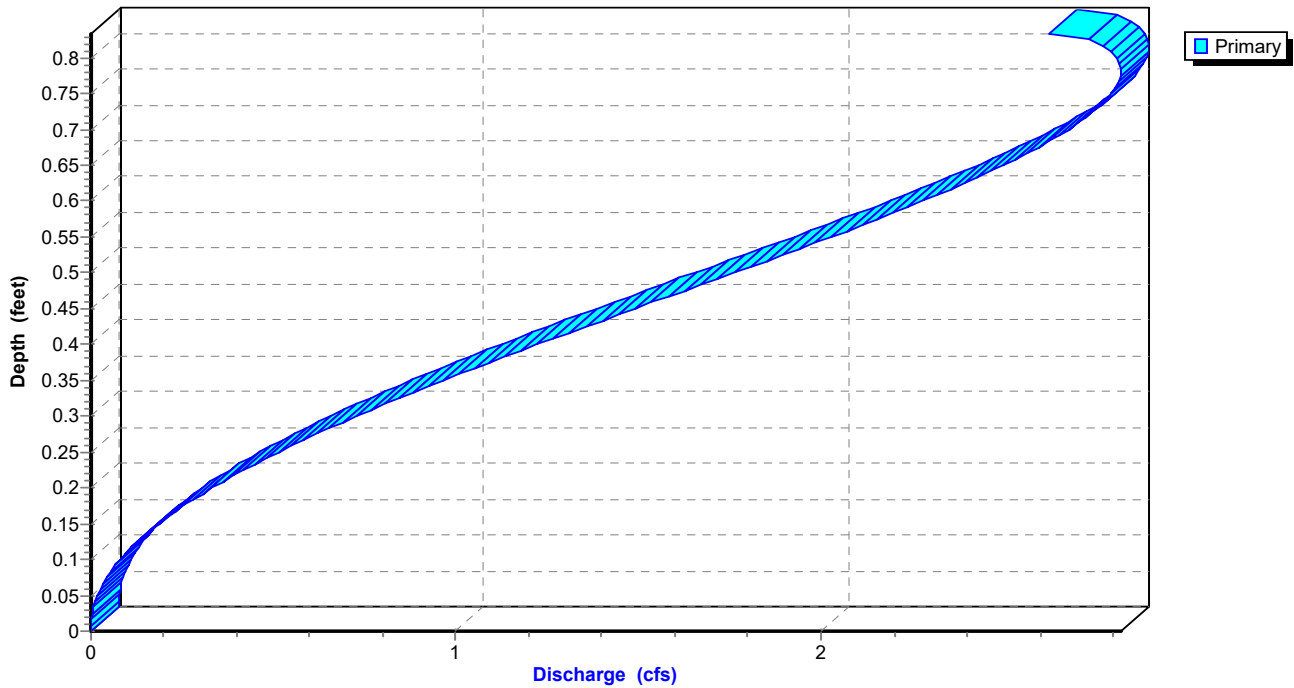
**Reach R10: 10" Culvert Pond Discharge**

Hydrograph

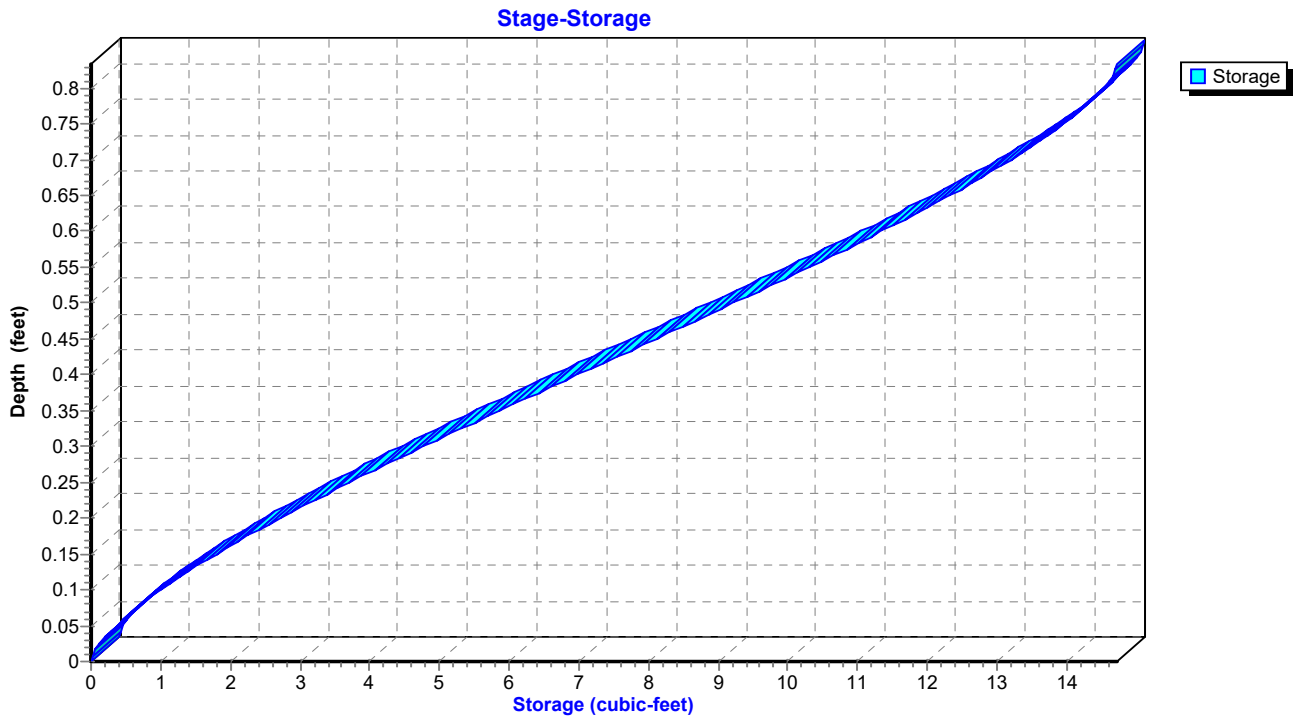


**Reach R10: 10" Culvert Pond Discharge**

Stage-Discharge



### Reach R10: 10" Culvert Pond Discharge



**Hydrograph for Reach R10: 10" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 329.33           | 0.00          |
| 2.50         | 0.00         | 0                    | 329.33           | 0.00          |
| 5.00         | 0.00         | 0                    | 329.33           | 0.00          |
| 7.50         | 0.00         | 0                    | 329.33           | 0.00          |
| 10.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 12.50        | <b>0.02</b>  | <b>0</b>             | <b>329.38</b>    | <b>0.02</b>   |
| 15.00        | <b>0.09</b>  | <b>1</b>             | <b>329.43</b>    | <b>0.09</b>   |
| 17.50        | 0.06         | 1                    | 329.42           | 0.06          |
| 20.00        | 0.04         | 1                    | 329.40           | 0.04          |
| 22.50        | 0.03         | 1                    | 329.40           | 0.03          |
| 25.00        | 0.03         | 0                    | 329.39           | 0.03          |
| 27.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 30.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 32.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 35.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 37.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 40.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 42.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 45.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 47.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 50.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 52.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 55.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 57.50        | 0.01         | 0                    | 329.36           | 0.01          |
| 60.00        | 0.01         | 0                    | 329.36           | 0.01          |
| 62.50        | 0.01         | 0                    | 329.36           | 0.01          |
| 65.00        | 0.00         | 0                    | 329.35           | 0.00          |
| 67.50        | 0.00         | 0                    | 329.35           | 0.00          |
| 70.00        | 0.00         | 0                    | 329.35           | 0.00          |
| 72.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 75.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 77.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 80.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 82.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 85.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 87.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 90.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 92.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 95.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 97.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 100.00       | 0.00         | 0                    | 329.33           | 0.00          |



**Stage-Discharge for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 329.33              | 0.00                 | 0.00               | 329.86              | 5.26                 | 1.92               |
| 329.34              | 0.48                 | 0.00               | 329.87              | 5.28                 | 1.98               |
| 329.35              | 0.76                 | 0.00               | 329.88              | 5.31                 | 2.03               |
| 329.36              | 1.00                 | 0.01               | 329.89              | 5.34                 | 2.08               |
| 329.37              | 1.20                 | 0.01               | 329.90              | 5.36                 | 2.13               |
| 329.38              | 1.39                 | 0.02               | 329.91              | 5.38                 | 2.18               |
| 329.39              | 1.56                 | 0.03               | 329.92              | 5.40                 | 2.23               |
| 329.40              | 1.73                 | 0.04               | 329.93              | 5.42                 | 2.28               |
| 329.41              | 1.88                 | 0.05               | 329.94              | 5.43                 | 2.32               |
| 329.42              | 2.03                 | 0.06               | 329.95              | 5.45                 | 2.37               |
| 329.43              | 2.16                 | 0.08               | 329.96              | 5.46                 | 2.41               |
| 329.44              | 2.30                 | 0.10               | 329.97              | 5.47                 | 2.46               |
| 329.45              | 2.42                 | 0.12               | 329.98              | 5.48                 | 2.50               |
| 329.46              | 2.55                 | 0.14               | 329.99              | 5.48                 | 2.54               |
| 329.47              | 2.66                 | 0.16               | 330.00              | 5.48                 | 2.58               |
| 329.48              | 2.78                 | 0.19               | 330.01              | <b>5.48</b>          | 2.61               |
| 329.49              | 2.89                 | 0.21               | 330.02              | 5.48                 | 2.65               |
| 329.50              | 2.99                 | 0.24               | 330.03              | 5.48                 | 2.68               |
| 329.51              | 3.10                 | 0.27               | 330.04              | 5.47                 | 2.71               |
| 329.52              | 3.20                 | 0.30               | 330.05              | 5.46                 | 2.74               |
| 329.53              | 3.29                 | 0.33               | 330.06              | 5.45                 | 2.76               |
| 329.54              | 3.39                 | 0.37               | 330.07              | 5.43                 | 2.78               |
| 329.55              | 3.48                 | 0.40               | 330.08              | 5.41                 | 2.80               |
| 329.56              | 3.57                 | 0.44               | 330.09              | 5.38                 | 2.81               |
| 329.57              | 3.65                 | 0.47               | 330.10              | 5.35                 | 2.82               |
| 329.58              | 3.73                 | 0.51               | 330.11              | 5.32                 | <b>2.82</b>        |
| 329.59              | 3.81                 | 0.55               | 330.12              | 5.28                 | 2.82               |
| 329.60              | 3.89                 | 0.60               | 330.13              | 5.22                 | 2.81               |
| 329.61              | 3.97                 | 0.64               | 330.14              | 5.16                 | 2.79               |
| 329.62              | 4.04                 | 0.68               | 330.15              | 5.07                 | 2.76               |
| 329.63              | 4.12                 | 0.73               | 330.16              | 4.90                 | 2.67               |
| 329.64              | 4.19                 | 0.77               |                     |                      |                    |
| 329.65              | 4.25                 | 0.82               |                     |                      |                    |
| 329.66              | 4.32                 | 0.87               |                     |                      |                    |
| 329.67              | 4.38                 | 0.92               |                     |                      |                    |
| 329.68              | 4.44                 | 0.97               |                     |                      |                    |
| 329.69              | 4.50                 | 1.02               |                     |                      |                    |
| 329.70              | 4.56                 | 1.07               |                     |                      |                    |
| 329.71              | 4.62                 | 1.12               |                     |                      |                    |
| 329.72              | 4.67                 | 1.17               |                     |                      |                    |
| 329.73              | 4.73                 | 1.22               |                     |                      |                    |
| 329.74              | 4.78                 | 1.28               |                     |                      |                    |
| 329.75              | 4.83                 | 1.33               |                     |                      |                    |
| 329.76              | 4.87                 | 1.38               |                     |                      |                    |
| 329.77              | 4.92                 | 1.44               |                     |                      |                    |
| 329.78              | 4.96                 | 1.49               |                     |                      |                    |
| 329.79              | 5.01                 | 1.55               |                     |                      |                    |
| 329.80              | 5.05                 | 1.60               |                     |                      |                    |
| 329.81              | 5.09                 | 1.65               |                     |                      |                    |
| 329.82              | 5.12                 | 1.71               |                     |                      |                    |
| 329.83              | 5.16                 | 1.76               |                     |                      |                    |
| 329.84              | 5.19                 | 1.82               |                     |                      |                    |
| 329.85              | 5.23                 | 1.87               |                     |                      |                    |

**Stage-Area-Storage for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 329.33              | 0.0                 | 0                       | 329.86              | 0.4                 | 10                      |
| 329.34              | 0.0                 | 0                       | 329.87              | 0.4                 | 10                      |
| 329.35              | 0.0                 | 0                       | 329.88              | 0.4                 | 10                      |
| 329.36              | 0.0                 | 0                       | 329.89              | 0.4                 | 11                      |
| 329.37              | 0.0                 | 0                       | 329.90              | 0.4                 | 11                      |
| 329.38              | 0.0                 | 0                       | 329.91              | 0.4                 | 11                      |
| 329.39              | 0.0                 | 0                       | 329.92              | 0.4                 | 11                      |
| 329.40              | 0.0                 | 1                       | 329.93              | 0.4                 | 11                      |
| 329.41              | 0.0                 | 1                       | 329.94              | 0.4                 | 12                      |
| 329.42              | 0.0                 | 1                       | 329.95              | 0.4                 | 12                      |
| 329.43              | 0.0                 | 1                       | 329.96              | 0.4                 | 12                      |
| 329.44              | 0.0                 | 1                       | 329.97              | 0.4                 | 12                      |
| 329.45              | 0.0                 | 1                       | 329.98              | 0.5                 | 12                      |
| 329.46              | 0.1                 | 1                       | 329.99              | 0.5                 | 13                      |
| 329.47              | 0.1                 | 2                       | 330.00              | 0.5                 | 13                      |
| 329.48              | 0.1                 | 2                       | 330.01              | 0.5                 | 13                      |
| 329.49              | 0.1                 | 2                       | 330.02              | 0.5                 | 13                      |
| 329.50              | 0.1                 | 2                       | 330.03              | 0.5                 | 13                      |
| 329.51              | 0.1                 | 2                       | 330.04              | 0.5                 | 13                      |
| 329.52              | 0.1                 | 3                       | 330.05              | 0.5                 | 14                      |
| 329.53              | 0.1                 | 3                       | 330.06              | 0.5                 | 14                      |
| 329.54              | 0.1                 | 3                       | 330.07              | 0.5                 | 14                      |
| 329.55              | 0.1                 | 3                       | 330.08              | 0.5                 | 14                      |
| 329.56              | 0.1                 | 3                       | 330.09              | 0.5                 | 14                      |
| 329.57              | 0.1                 | 4                       | 330.10              | 0.5                 | 14                      |
| 329.58              | 0.1                 | 4                       | 330.11              | 0.5                 | 14                      |
| 329.59              | 0.1                 | 4                       | 330.12              | 0.5                 | 14                      |
| 329.60              | 0.2                 | 4                       | 330.13              | 0.5                 | 15                      |
| 329.61              | 0.2                 | 4                       | 330.14              | 0.5                 | 15                      |
| 329.62              | 0.2                 | 5                       | 330.15              | 0.5                 | 15                      |
| 329.63              | 0.2                 | 5                       | 330.16              | <b>0.5</b>          | <b>15</b>               |
| 329.64              | 0.2                 | 5                       |                     |                     |                         |
| 329.65              | 0.2                 | 5                       |                     |                     |                         |
| 329.66              | 0.2                 | 5                       |                     |                     |                         |
| 329.67              | 0.2                 | 6                       |                     |                     |                         |
| 329.68              | 0.2                 | 6                       |                     |                     |                         |
| 329.69              | 0.2                 | 6                       |                     |                     |                         |
| 329.70              | 0.2                 | 6                       |                     |                     |                         |
| 329.71              | 0.2                 | 7                       |                     |                     |                         |
| 329.72              | 0.3                 | 7                       |                     |                     |                         |
| 329.73              | 0.3                 | 7                       |                     |                     |                         |
| 329.74              | 0.3                 | 7                       |                     |                     |                         |
| 329.75              | 0.3                 | 7                       |                     |                     |                         |
| 329.76              | 0.3                 | 8                       |                     |                     |                         |
| 329.77              | 0.3                 | 8                       |                     |                     |                         |
| 329.78              | 0.3                 | 8                       |                     |                     |                         |
| 329.79              | 0.3                 | 8                       |                     |                     |                         |
| 329.80              | 0.3                 | 9                       |                     |                     |                         |
| 329.81              | 0.3                 | 9                       |                     |                     |                         |
| 329.82              | 0.3                 | 9                       |                     |                     |                         |
| 329.83              | 0.3                 | 9                       |                     |                     |                         |
| 329.84              | 0.3                 | 9                       |                     |                     |                         |
| 329.85              | 0.4                 | 10                      |                     |                     |                         |

**Summary for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.02" for 1-yr event  
 Inflow = 0.03 cfs @ 18.46 hrs, Volume= 0.020 af  
 Outflow = 0.03 cfs @ 18.62 hrs, Volume= 0.020 af, Atten= 0%, Lag= 10.1 min  
 Routed to Pond 4P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.32 fps, Min. Travel Time= 14.0 min  
 Avg. Velocity = 0.26 fps, Avg. Travel Time= 17.0 min

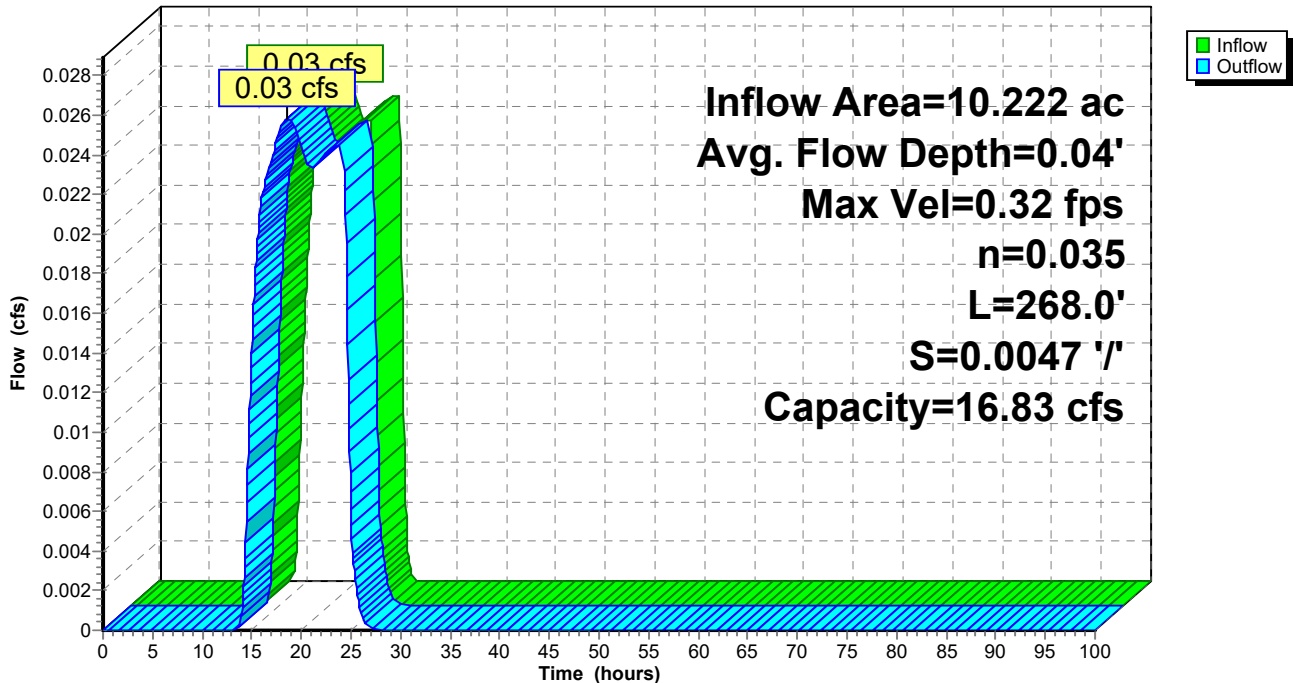
Peak Storage= 22 cf @ 18.62 hrs  
 Average Depth at Peak Storage= 0.04' , Surface Width= 2.23'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 16.83 cfs

2.00' x 1.25' deep channel, n= 0.035  
 Side Slope Z-value= 3.0 '/ Top Width= 9.50'  
 Length= 268.0' Slope= 0.0047 '/  
 Inlet Invert= 341.00', Outlet Invert= 339.75'

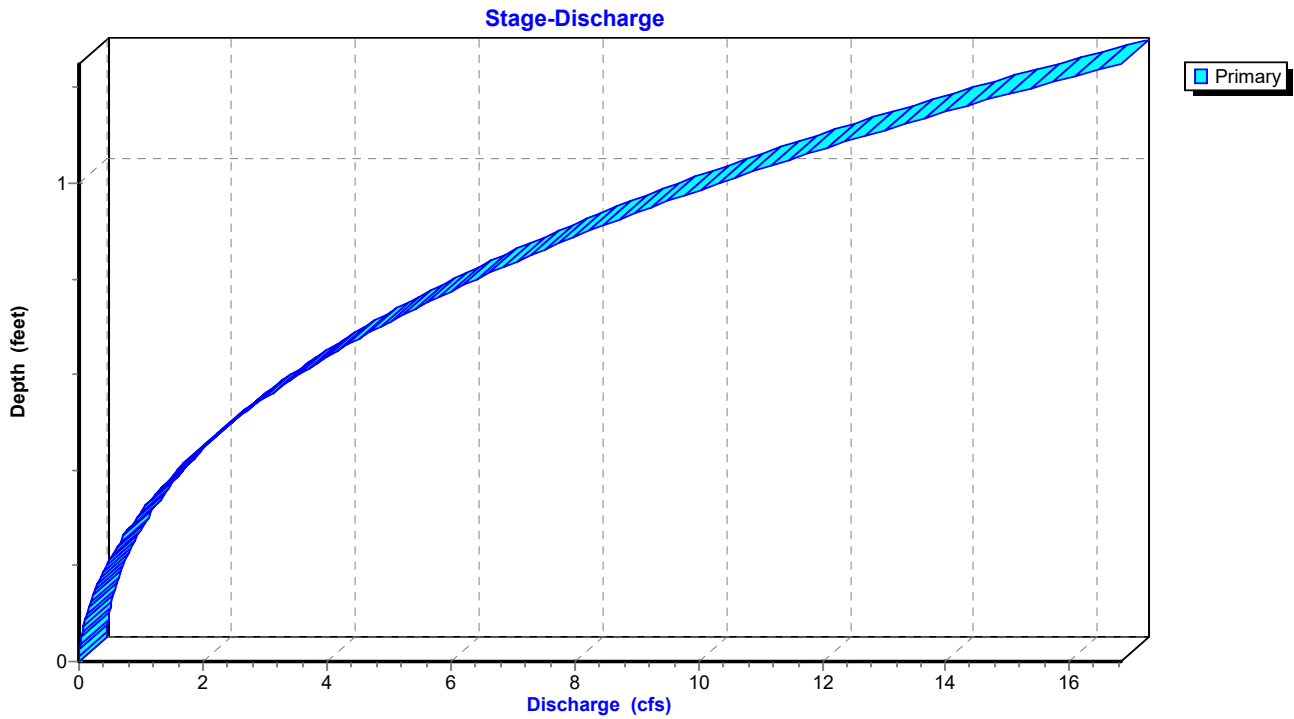


**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

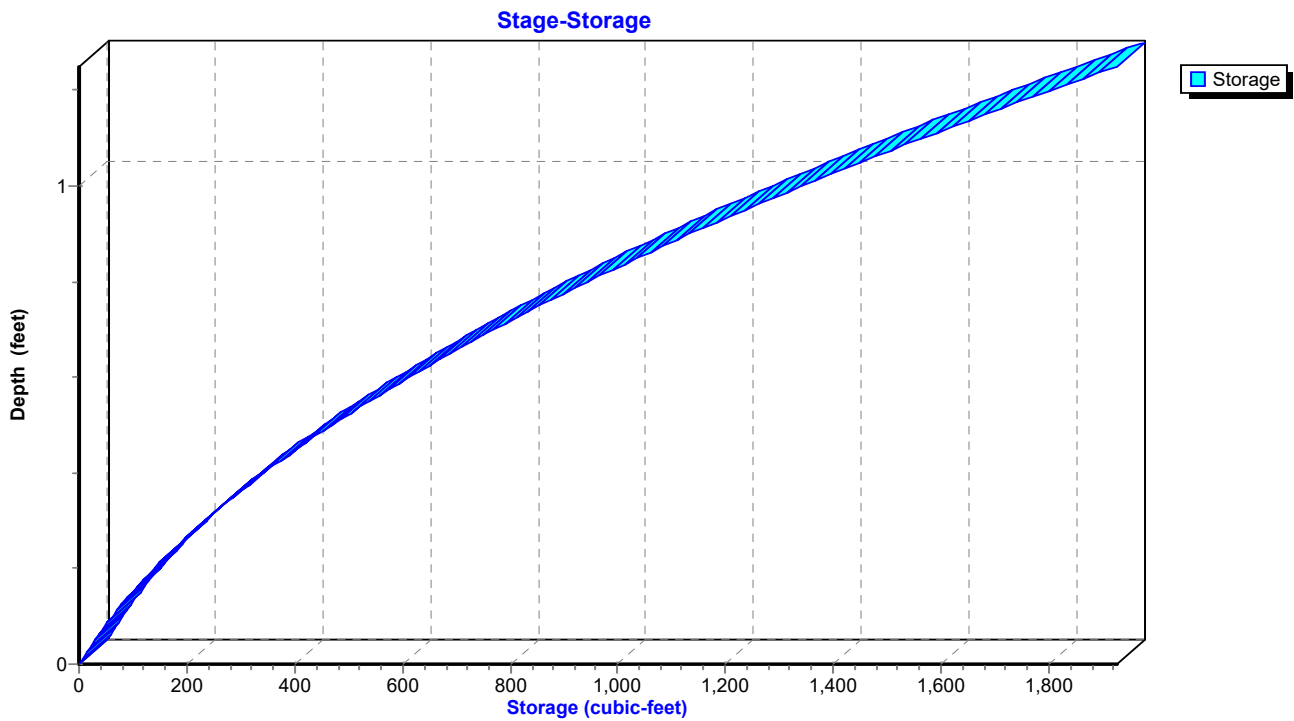
Hydrograph



**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**



**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**



**Hydrograph for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 341.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 341.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 341.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 341.00           | 0.00          |
| 10.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 12.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 15.00        | 0.02         | 15                   | 341.03           | 0.01          |
| 17.50        | <b>0.03</b>  | <b>21</b>            | <b>341.04</b>    | <b>0.02</b>   |
| 20.00        | <b>0.02</b>  | <b>21</b>            | <b>341.04</b>    | <b>0.02</b>   |
| 22.50        | 0.02         | 21                   | 341.04           | 0.02          |
| 25.00        | 0.00         | 9                    | 341.02           | 0.01          |
| 27.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 341.00           | 0.00          |

**Stage-Discharge for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 341.00              | 0.00                 | 0.00               | 341.53              | 1.46                 | 2.77               | 342.06              | 2.13                 | 11.71              |
| 341.01              | 0.12                 | 0.00               | 341.54              | 1.47                 | 2.87               | 342.07              | 2.14                 | 11.95              |
| 341.02              | 0.21                 | 0.01               | 341.55              | 1.48                 | 2.98               | 342.08              | 2.16                 | 12.20              |
| 341.03              | 0.27                 | 0.02               | 341.56              | 1.50                 | 3.09               | 342.09              | 2.17                 | 12.45              |
| 341.04              | 0.33                 | 0.03               | 341.57              | 1.51                 | 3.20               | 342.10              | 2.18                 | 12.70              |
| 341.05              | 0.37                 | 0.04               | 341.58              | 1.53                 | 3.32               | 342.11              | 2.19                 | 12.95              |
| 341.06              | 0.42                 | 0.06               | 341.59              | 1.54                 | 3.43               | 342.12              | 2.20                 | 13.21              |
| 341.07              | 0.46                 | 0.07               | 341.60              | 1.56                 | 3.55               | 342.13              | 2.21                 | 13.47              |
| 341.08              | 0.50                 | 0.09               | 341.61              | 1.57                 | 3.67               | 342.14              | 2.22                 | 13.73              |
| 341.09              | 0.54                 | 0.11               | 341.62              | 1.59                 | 3.79               | 342.15              | 2.23                 | 14.00              |
| 341.10              | 0.57                 | 0.13               | 341.63              | 1.60                 | 3.92               | 342.16              | 2.24                 | 14.27              |
| 341.11              | 0.60                 | 0.16               | 341.64              | 1.61                 | 4.05               | 342.17              | 2.26                 | 14.54              |
| 341.12              | 0.64                 | 0.18               | 341.65              | 1.63                 | 4.18               | 342.18              | 2.27                 | 14.81              |
| 341.13              | 0.67                 | 0.21               | 341.66              | 1.64                 | 4.31               | 342.19              | 2.28                 | 15.09              |
| 341.14              | 0.70                 | 0.24               | 341.67              | 1.65                 | 4.44               | 342.20              | 2.29                 | 15.37              |
| 341.15              | 0.72                 | 0.27               | 341.68              | 1.67                 | 4.58               | 342.21              | 2.30                 | 15.66              |
| 341.16              | 0.75                 | 0.30               | 341.69              | 1.68                 | 4.72               | 342.22              | 2.31                 | 15.95              |
| 341.17              | 0.78                 | 0.33               | 341.70              | 1.69                 | 4.86               | 342.23              | 2.32                 | 16.24              |
| 341.18              | 0.80                 | 0.37               | 341.71              | 1.71                 | 5.01               | 342.24              | 2.33                 | 16.53              |
| 341.19              | 0.83                 | 0.40               | 341.72              | 1.72                 | 5.15               | 342.25              | <b>2.34</b>          | <b>16.83</b>       |
| 341.20              | 0.85                 | 0.44               | 341.73              | 1.73                 | 5.30               |                     |                      |                    |
| 341.21              | 0.88                 | 0.48               | 341.74              | 1.75                 | 5.45               |                     |                      |                    |
| 341.22              | 0.90                 | 0.53               | 341.75              | 1.76                 | 5.61               |                     |                      |                    |
| 341.23              | 0.92                 | 0.57               | 341.76              | 1.77                 | 5.77               |                     |                      |                    |
| 341.24              | 0.94                 | 0.62               | 341.77              | 1.79                 | 5.92               |                     |                      |                    |
| 341.25              | 0.96                 | 0.66               | 341.78              | 1.80                 | 6.09               |                     |                      |                    |
| 341.26              | 0.99                 | 0.71               | 341.79              | 1.81                 | 6.25               |                     |                      |                    |
| 341.27              | 1.01                 | 0.76               | 341.80              | 1.82                 | 6.42               |                     |                      |                    |
| 341.28              | 1.03                 | 0.82               | 341.81              | 1.84                 | 6.59               |                     |                      |                    |
| 341.29              | 1.05                 | 0.87               | 341.82              | 1.85                 | 6.76               |                     |                      |                    |
| 341.30              | 1.07                 | 0.93               | 341.83              | 1.86                 | 6.93               |                     |                      |                    |
| 341.31              | 1.09                 | 0.99               | 341.84              | 1.87                 | 7.11               |                     |                      |                    |
| 341.32              | 1.11                 | 1.05               | 341.85              | 1.89                 | 7.29               |                     |                      |                    |
| 341.33              | 1.12                 | 1.11               | 341.86              | 1.90                 | 7.48               |                     |                      |                    |
| 341.34              | 1.14                 | 1.17               | 341.87              | 1.91                 | 7.66               |                     |                      |                    |
| 341.35              | 1.16                 | 1.24               | 341.88              | 1.92                 | 7.85               |                     |                      |                    |
| 341.36              | 1.18                 | 1.31               | 341.89              | 1.93                 | 8.04               |                     |                      |                    |
| 341.37              | 1.20                 | 1.38               | 341.90              | 1.95                 | 8.23               |                     |                      |                    |
| 341.38              | 1.21                 | 1.45               | 341.91              | 1.96                 | 8.43               |                     |                      |                    |
| 341.39              | 1.23                 | 1.52               | 341.92              | 1.97                 | 8.63               |                     |                      |                    |
| 341.40              | 1.25                 | 1.60               | 341.93              | 1.98                 | 8.83               |                     |                      |                    |
| 341.41              | 1.27                 | 1.68               | 341.94              | 1.99                 | 9.03               |                     |                      |                    |
| 341.42              | 1.28                 | 1.76               | 341.95              | 2.01                 | 9.24               |                     |                      |                    |
| 341.43              | 1.30                 | 1.84               | 341.96              | 2.02                 | 9.45               |                     |                      |                    |
| 341.44              | 1.32                 | 1.92               | 341.97              | 2.03                 | 9.67               |                     |                      |                    |
| 341.45              | 1.33                 | 2.01               | 341.98              | 2.04                 | 9.88               |                     |                      |                    |
| 341.46              | 1.35                 | 2.09               | 341.99              | 2.05                 | 10.10              |                     |                      |                    |
| 341.47              | 1.36                 | 2.18               | 342.00              | 2.06                 | 10.32              |                     |                      |                    |
| 341.48              | 1.38                 | 2.28               | 342.01              | 2.08                 | 10.55              |                     |                      |                    |
| 341.49              | 1.39                 | 2.37               | 342.02              | 2.09                 | 10.77              |                     |                      |                    |
| 341.50              | 1.41                 | 2.47               | 342.03              | 2.10                 | 11.00              |                     |                      |                    |
| 341.51              | 1.42                 | 2.57               | 342.04              | 2.11                 | 11.24              |                     |                      |                    |
| 341.52              | 1.44                 | 2.67               | 342.05              | 2.12                 | 11.47              |                     |                      |                    |

**Stage-Area-Storage for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 341.00              | 0.0                 | 0                       | 342.06              | 5.5                 | 1,472                   |
| 341.02              | 0.0                 | 11                      | 342.08              | 5.7                 | 1,517                   |
| 341.04              | 0.1                 | 23                      | 342.10              | 5.8                 | 1,562                   |
| 341.06              | 0.1                 | 35                      | 342.12              | 6.0                 | 1,609                   |
| 341.08              | 0.2                 | 48                      | 342.14              | 6.2                 | 1,656                   |
| 341.10              | 0.2                 | 62                      | 342.16              | 6.4                 | 1,704                   |
| 341.12              | 0.3                 | 76                      | 342.18              | 6.5                 | 1,752                   |
| 341.14              | 0.3                 | 91                      | 342.20              | 6.7                 | 1,801                   |
| 341.16              | 0.4                 | 106                     | 342.22              | 6.9                 | 1,851                   |
| 341.18              | 0.5                 | 123                     | 342.24              | <b>7.1</b>          | <b>1,901</b>            |
| 341.20              | 0.5                 | 139                     |                     |                     |                         |
| 341.22              | 0.6                 | 157                     |                     |                     |                         |
| 341.24              | 0.7                 | 175                     |                     |                     |                         |
| 341.26              | 0.7                 | 194                     |                     |                     |                         |
| 341.28              | 0.8                 | 213                     |                     |                     |                         |
| 341.30              | 0.9                 | 233                     |                     |                     |                         |
| 341.32              | 0.9                 | 254                     |                     |                     |                         |
| 341.34              | 1.0                 | 275                     |                     |                     |                         |
| 341.36              | 1.1                 | 297                     |                     |                     |                         |
| 341.38              | 1.2                 | 320                     |                     |                     |                         |
| 341.40              | 1.3                 | 343                     |                     |                     |                         |
| 341.42              | 1.4                 | 367                     |                     |                     |                         |
| 341.44              | 1.5                 | 392                     |                     |                     |                         |
| 341.46              | 1.6                 | 417                     |                     |                     |                         |
| 341.48              | 1.7                 | 443                     |                     |                     |                         |
| 341.50              | 1.8                 | 469                     |                     |                     |                         |
| 341.52              | 1.9                 | 496                     |                     |                     |                         |
| 341.54              | 2.0                 | 524                     |                     |                     |                         |
| 341.56              | 2.1                 | 552                     |                     |                     |                         |
| 341.58              | 2.2                 | 581                     |                     |                     |                         |
| 341.60              | 2.3                 | 611                     |                     |                     |                         |
| 341.62              | 2.4                 | 641                     |                     |                     |                         |
| 341.64              | 2.5                 | 672                     |                     |                     |                         |
| 341.66              | 2.6                 | 704                     |                     |                     |                         |
| 341.68              | 2.7                 | 736                     |                     |                     |                         |
| 341.70              | 2.9                 | 769                     |                     |                     |                         |
| 341.72              | 3.0                 | 803                     |                     |                     |                         |
| 341.74              | 3.1                 | 837                     |                     |                     |                         |
| 341.76              | 3.3                 | 872                     |                     |                     |                         |
| 341.78              | 3.4                 | 907                     |                     |                     |                         |
| 341.80              | 3.5                 | 943                     |                     |                     |                         |
| 341.82              | 3.7                 | 980                     |                     |                     |                         |
| 341.84              | 3.8                 | 1,018                   |                     |                     |                         |
| 341.86              | 3.9                 | 1,056                   |                     |                     |                         |
| 341.88              | 4.1                 | 1,094                   |                     |                     |                         |
| 341.90              | 4.2                 | 1,134                   |                     |                     |                         |
| 341.92              | 4.4                 | 1,174                   |                     |                     |                         |
| 341.94              | 4.5                 | 1,214                   |                     |                     |                         |
| 341.96              | 4.7                 | 1,256                   |                     |                     |                         |
| 341.98              | 4.8                 | 1,297                   |                     |                     |                         |
| 342.00              | 5.0                 | 1,340                   |                     |                     |                         |
| 342.02              | 5.2                 | 1,383                   |                     |                     |                         |
| 342.04              | 5.3                 | 1,427                   |                     |                     |                         |

### Summary for Reach R12: 12" Culvert Pond Discharge

[52] Hint: Inlet/Outlet conditions not evaluated

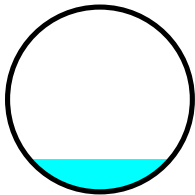
[80] Warning: Exceeded Pond 4P by 0.01' @ 0.00 hrs (0.00 cfs 0.004 af)

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth > 0.02" for 1-yr event  
Inflow = 0.02 cfs @ 24.36 hrs, Volume= 0.019 af  
Outflow = 0.02 cfs @ 24.45 hrs, Volume= 0.019 af, Atten= 0%, Lag= 5.1 min  
Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.24 fps, Min. Travel Time= 9.5 min  
Avg. Velocity = 0.09 fps, Avg. Travel Time= 25.1 min

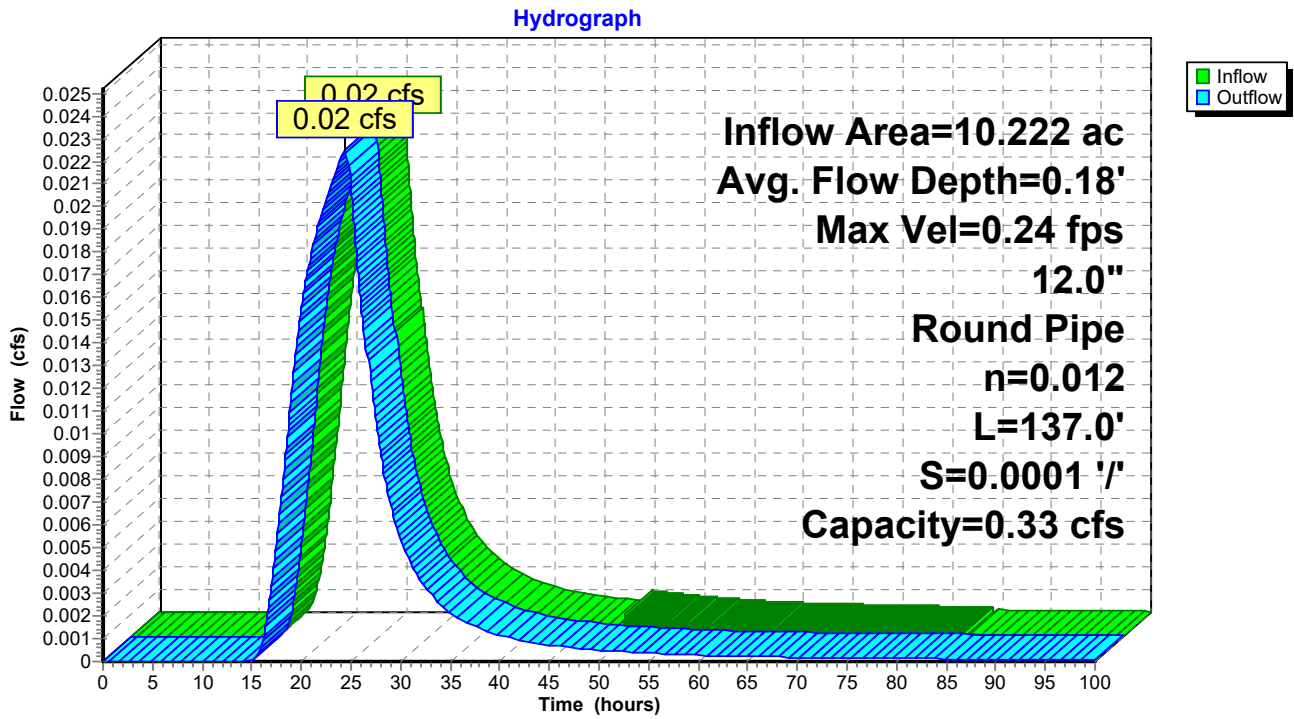
Peak Storage= 13 cf @ 24.45 hrs  
Average Depth at Peak Storage= 0.18' , Surface Width= 0.76'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 0.33 cfs

12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 137.0' Slope= 0.0001 '/'  
Inlet Invert= 337.01', Outlet Invert= 337.00'

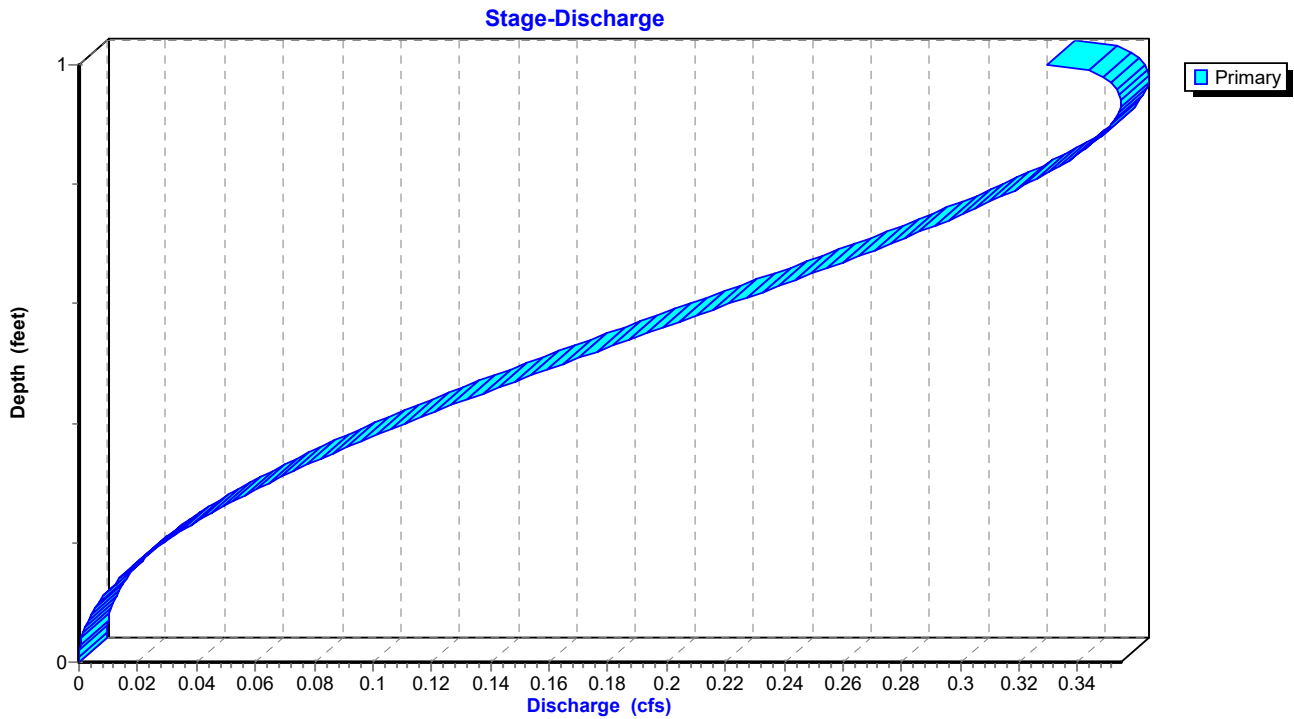




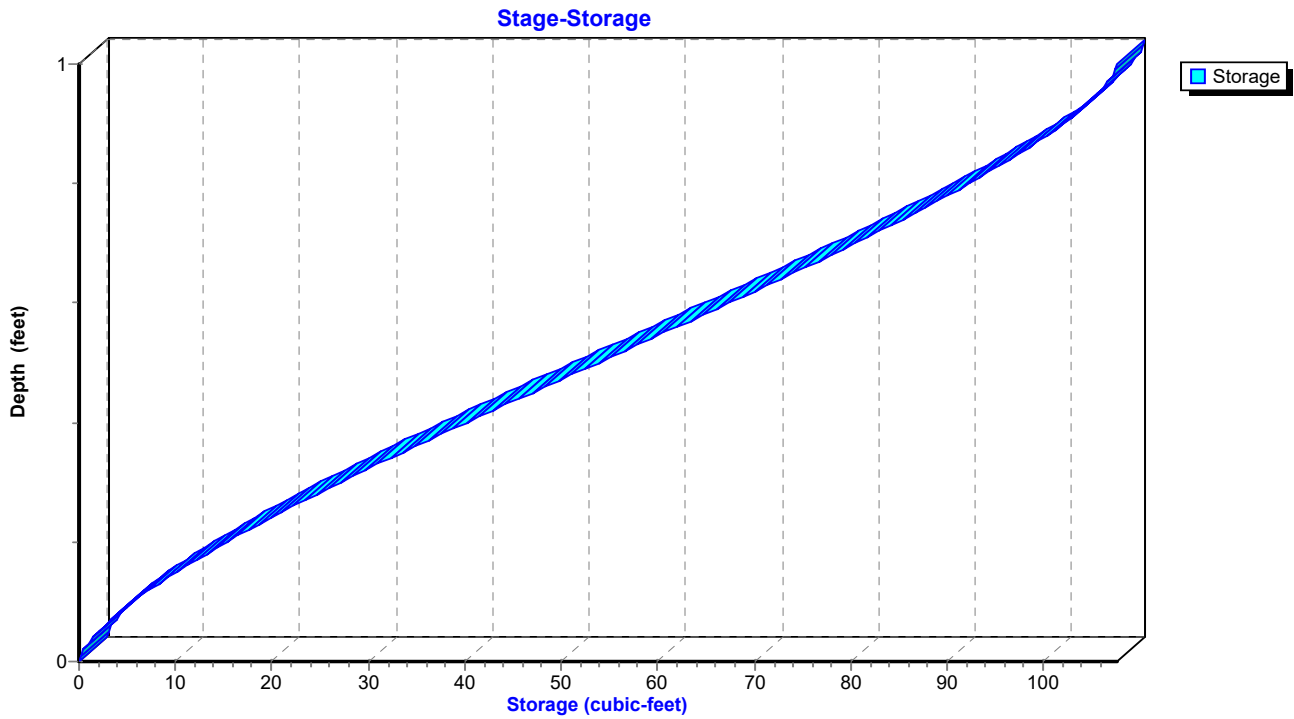
### Reach R12: 12" Culvert Pond Discharge



### Reach R12: 12" Culvert Pond Discharge



### Reach R12: 12" Culvert Pond Discharge



**Hydrograph for Reach R12: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 337.01           | 0.00          |
| 2.50         | 0.00         | 0                    | 337.01           | 0.00          |
| 5.00         | 0.00         | 0                    | 337.01           | 0.00          |
| 7.50         | 0.00         | 0                    | 337.01           | 0.00          |
| 10.00        | 0.00         | 0                    | 337.01           | 0.00          |
| 12.50        | 0.00         | 0                    | 337.01           | 0.00          |
| 15.00        | 0.00         | 0                    | 337.01           | 0.00          |
| 17.50        | 0.01         | 5                    | 337.10           | 0.01          |
| 20.00        | 0.02         | 10                   | 337.16           | 0.02          |
| 22.50        | <b>0.02</b>  | <b>12</b>            | <b>337.18</b>    | <b>0.02</b>   |
| 25.00        | <b>0.02</b>  | <b>12</b>            | <b>337.18</b>    | <b>0.02</b>   |
| 27.50        | 0.01         | 8                    | 337.13           | 0.01          |
| 30.00        | 0.01         | 5                    | 337.10           | 0.01          |
| 32.50        | 0.00         | 3                    | 337.08           | 0.00          |
| 35.00        | 0.00         | 3                    | 337.07           | 0.00          |
| 37.50        | 0.00         | 2                    | 337.06           | 0.00          |
| 40.00        | 0.00         | 2                    | 337.05           | 0.00          |
| 42.50        | 0.00         | 1                    | 337.05           | 0.00          |
| 45.00        | 0.00         | 1                    | 337.04           | 0.00          |
| 47.50        | 0.00         | 1                    | 337.04           | 0.00          |
| 50.00        | 0.00         | 1                    | 337.04           | 0.00          |
| 52.50        | 0.00         | 1                    | 337.04           | 0.00          |
| 55.00        | 0.00         | 1                    | 337.03           | 0.00          |
| 57.50        | 0.00         | 1                    | 337.03           | 0.00          |
| 60.00        | 0.00         | 1                    | 337.03           | 0.00          |
| 62.50        | 0.00         | 1                    | 337.03           | 0.00          |
| 65.00        | 0.00         | 1                    | 337.03           | 0.00          |
| 67.50        | 0.00         | 0                    | 337.03           | 0.00          |
| 70.00        | 0.00         | 0                    | 337.03           | 0.00          |
| 72.50        | 0.00         | 0                    | 337.03           | 0.00          |
| 75.00        | 0.00         | 0                    | 337.03           | 0.00          |
| 77.50        | 0.00         | 0                    | 337.03           | 0.00          |
| 80.00        | 0.00         | 0                    | 337.02           | 0.00          |
| 82.50        | 0.00         | 0                    | 337.02           | 0.00          |
| 85.00        | 0.00         | 0                    | 337.02           | 0.00          |
| 87.50        | 0.00         | 0                    | 337.02           | 0.00          |
| 90.00        | 0.00         | 0                    | 337.02           | 0.00          |
| 92.50        | 0.00         | 0                    | 337.02           | 0.00          |
| 95.00        | 0.00         | 0                    | 337.02           | 0.00          |
| 97.50        | 0.00         | 0                    | 337.02           | 0.00          |
| 100.00       | 0.00         | 0                    | 337.02           | 0.00          |

**Stage-Discharge for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.01              | 0.00                 | 0.00               | 337.54              | 0.43                 | 0.18               |
| 337.02              | 0.04                 | 0.00               | 337.55              | 0.43                 | 0.19               |
| 337.03              | 0.06                 | 0.00               | 337.56              | 0.44                 | 0.19               |
| 337.04              | 0.08                 | 0.00               | 337.57              | 0.44                 | 0.20               |
| 337.05              | 0.09                 | 0.00               | 337.58              | 0.44                 | 0.20               |
| 337.06              | 0.11                 | 0.00               | 337.59              | 0.45                 | 0.21               |
| 337.07              | 0.12                 | 0.00               | 337.60              | 0.45                 | 0.22               |
| 337.08              | 0.13                 | 0.00               | 337.61              | 0.45                 | 0.22               |
| 337.09              | 0.15                 | 0.00               | 337.62              | 0.45                 | 0.23               |
| 337.10              | 0.16                 | 0.01               | 337.63              | 0.46                 | 0.23               |
| 337.11              | 0.17                 | 0.01               | 337.64              | 0.46                 | 0.24               |
| 337.12              | 0.18                 | 0.01               | 337.65              | 0.46                 | 0.24               |
| 337.13              | 0.19                 | 0.01               | 337.66              | 0.46                 | 0.25               |
| 337.14              | 0.20                 | 0.01               | 337.67              | 0.46                 | 0.25               |
| 337.15              | 0.21                 | 0.01               | 337.68              | 0.47                 | 0.26               |
| 337.16              | 0.22                 | 0.02               | 337.69              | 0.47                 | 0.27               |
| 337.17              | 0.23                 | 0.02               | 337.70              | 0.47                 | 0.27               |
| 337.18              | 0.23                 | 0.02               | 337.71              | 0.47                 | 0.28               |
| 337.19              | 0.24                 | 0.02               | 337.72              | 0.47                 | 0.28               |
| 337.20              | 0.25                 | 0.03               | 337.73              | 0.47                 | 0.29               |
| 337.21              | 0.26                 | 0.03               | 337.74              | 0.47                 | 0.29               |
| 337.22              | 0.27                 | 0.03               | 337.75              | 0.47                 | 0.30               |
| 337.23              | 0.27                 | 0.03               | 337.76              | 0.48                 | 0.30               |
| 337.24              | 0.28                 | 0.04               | 337.77              | 0.48                 | 0.31               |
| 337.25              | 0.29                 | 0.04               | 337.78              | 0.48                 | 0.31               |
| 337.26              | 0.29                 | 0.05               | 337.79              | 0.48                 | 0.31               |
| 337.27              | 0.30                 | 0.05               | 337.80              | 0.48                 | 0.32               |
| 337.28              | 0.31                 | 0.05               | 337.81              | 0.48                 | 0.32               |
| 337.29              | 0.31                 | 0.06               | 337.82              | <b>0.48</b>          | 0.33               |
| 337.30              | 0.32                 | 0.06               | 337.83              | 0.48                 | 0.33               |
| 337.31              | 0.33                 | 0.06               | 337.84              | 0.48                 | 0.33               |
| 337.32              | 0.33                 | 0.07               | 337.85              | 0.48                 | 0.34               |
| 337.33              | 0.34                 | 0.07               | 337.86              | 0.48                 | 0.34               |
| 337.34              | 0.34                 | 0.08               | 337.87              | 0.48                 | 0.34               |
| 337.35              | 0.35                 | 0.08               | 337.88              | 0.48                 | 0.35               |
| 337.36              | 0.35                 | 0.09               | 337.89              | 0.47                 | 0.35               |
| 337.37              | 0.36                 | 0.09               | 337.90              | 0.47                 | 0.35               |
| 337.38              | 0.36                 | 0.10               | 337.91              | 0.47                 | 0.35               |
| 337.39              | 0.37                 | 0.10               | 337.92              | 0.47                 | 0.35               |
| 337.40              | 0.37                 | 0.11               | 337.93              | 0.47                 | 0.35               |
| 337.41              | 0.38                 | 0.11               | 337.94              | 0.47                 | 0.35               |
| 337.42              | 0.38                 | 0.12               | 337.95              | 0.46                 | <b>0.35</b>        |
| 337.43              | 0.39                 | 0.12               | 337.96              | 0.46                 | 0.35               |
| 337.44              | 0.39                 | 0.13               | 337.97              | 0.46                 | 0.35               |
| 337.45              | 0.40                 | 0.13               | 337.98              | 0.45                 | 0.35               |
| 337.46              | 0.40                 | 0.14               | 337.99              | 0.45                 | 0.35               |
| 337.47              | 0.40                 | 0.14               | 338.00              | 0.44                 | 0.34               |
| 337.48              | 0.41                 | 0.15               | 338.01              | 0.42                 | 0.33               |
| 337.49              | 0.41                 | 0.15               |                     |                      |                    |
| 337.50              | 0.42                 | 0.16               |                     |                      |                    |
| 337.51              | 0.42                 | 0.16               |                     |                      |                    |
| 337.52              | 0.42                 | 0.17               |                     |                      |                    |
| 337.53              | 0.43                 | 0.18               |                     |                      |                    |

**Stage-Area-Storage for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.01              | 0.0                 | 0                       | 337.54              | 0.4                 | 58                      |
| 337.02              | 0.0                 | 0                       | 337.55              | 0.4                 | 59                      |
| 337.03              | 0.0                 | 1                       | 337.56              | 0.4                 | 61                      |
| 337.04              | 0.0                 | 1                       | 337.57              | 0.5                 | 62                      |
| 337.05              | 0.0                 | 1                       | 337.58              | 0.5                 | 63                      |
| 337.06              | 0.0                 | 2                       | 337.59              | 0.5                 | 65                      |
| 337.07              | 0.0                 | 3                       | 337.60              | 0.5                 | 66                      |
| 337.08              | 0.0                 | 3                       | 337.61              | 0.5                 | 67                      |
| 337.09              | 0.0                 | 4                       | 337.62              | 0.5                 | 69                      |
| 337.10              | 0.0                 | 5                       | 337.63              | 0.5                 | 70                      |
| 337.11              | 0.0                 | 6                       | 337.64              | 0.5                 | 71                      |
| 337.12              | 0.0                 | 6                       | 337.65              | 0.5                 | 73                      |
| 337.13              | 0.1                 | 7                       | 337.66              | 0.5                 | 74                      |
| 337.14              | 0.1                 | 8                       | 337.67              | 0.5                 | 75                      |
| 337.15              | 0.1                 | 9                       | 337.68              | 0.6                 | 77                      |
| 337.16              | 0.1                 | 10                      | 337.69              | 0.6                 | 78                      |
| 337.17              | 0.1                 | 11                      | 337.70              | 0.6                 | 79                      |
| 337.18              | 0.1                 | 12                      | 337.71              | 0.6                 | 80                      |
| 337.19              | 0.1                 | 13                      | 337.72              | 0.6                 | 82                      |
| 337.20              | 0.1                 | 14                      | 337.73              | 0.6                 | 83                      |
| 337.21              | 0.1                 | 15                      | 337.74              | 0.6                 | 84                      |
| 337.22              | 0.1                 | 16                      | 337.75              | 0.6                 | 85                      |
| 337.23              | 0.1                 | 18                      | 337.76              | 0.6                 | 87                      |
| 337.24              | 0.1                 | 19                      | 337.77              | 0.6                 | 88                      |
| 337.25              | 0.1                 | 20                      | 337.78              | 0.6                 | 89                      |
| 337.26              | 0.2                 | 21                      | 337.79              | 0.7                 | 90                      |
| 337.27              | 0.2                 | 22                      | 337.80              | 0.7                 | 91                      |
| 337.28              | 0.2                 | 23                      | 337.81              | 0.7                 | 92                      |
| 337.29              | 0.2                 | 25                      | 337.82              | 0.7                 | 93                      |
| 337.30              | 0.2                 | 26                      | 337.83              | 0.7                 | 94                      |
| 337.31              | 0.2                 | 27                      | 337.84              | 0.7                 | 95                      |
| 337.32              | 0.2                 | 28                      | 337.85              | 0.7                 | 96                      |
| 337.33              | 0.2                 | 30                      | 337.86              | 0.7                 | 97                      |
| 337.34              | 0.2                 | 31                      | 337.87              | 0.7                 | 98                      |
| 337.35              | 0.2                 | 32                      | 337.88              | 0.7                 | 99                      |
| 337.36              | 0.2                 | 34                      | 337.89              | 0.7                 | 100                     |
| 337.37              | 0.3                 | 35                      | 337.90              | 0.7                 | 101                     |
| 337.38              | 0.3                 | 36                      | 337.91              | 0.7                 | 102                     |
| 337.39              | 0.3                 | 38                      | 337.92              | 0.8                 | 103                     |
| 337.40              | 0.3                 | 39                      | 337.93              | 0.8                 | 104                     |
| 337.41              | 0.3                 | 40                      | 337.94              | 0.8                 | 104                     |
| 337.42              | 0.3                 | 42                      | 337.95              | 0.8                 | 105                     |
| 337.43              | 0.3                 | 43                      | 337.96              | 0.8                 | 106                     |
| 337.44              | 0.3                 | 44                      | 337.97              | 0.8                 | 106                     |
| 337.45              | 0.3                 | 46                      | 337.98              | 0.8                 | 107                     |
| 337.46              | 0.3                 | 47                      | 337.99              | 0.8                 | 107                     |
| 337.47              | 0.4                 | 48                      | 338.00              | 0.8                 | 107                     |
| 337.48              | 0.4                 | 50                      | 338.01              | <b>0.8</b>          | <b>108</b>              |
| 337.49              | 0.4                 | 51                      |                     |                     |                         |
| 337.50              | 0.4                 | 52                      |                     |                     |                         |
| 337.51              | 0.4                 | 54                      |                     |                     |                         |
| 337.52              | 0.4                 | 55                      |                     |                     |                         |
| 337.53              | 0.4                 | 57                      |                     |                     |                         |

**Summary for Reach R7: Proposed RRv Swale**

Inflow Area = 5.515 ac, 54.87% Impervious, Inflow Depth = 0.98" for 1-yr event  
 Inflow = 6.31 cfs @ 12.11 hrs, Volume= 0.448 af  
 Outflow = 5.95 cfs @ 12.16 hrs, Volume= 0.448 af, Atten= 6%, Lag= 2.9 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.34 fps, Min. Travel Time= 3.9 min  
 Avg. Velocity = 0.37 fps, Avg. Travel Time= 14.1 min

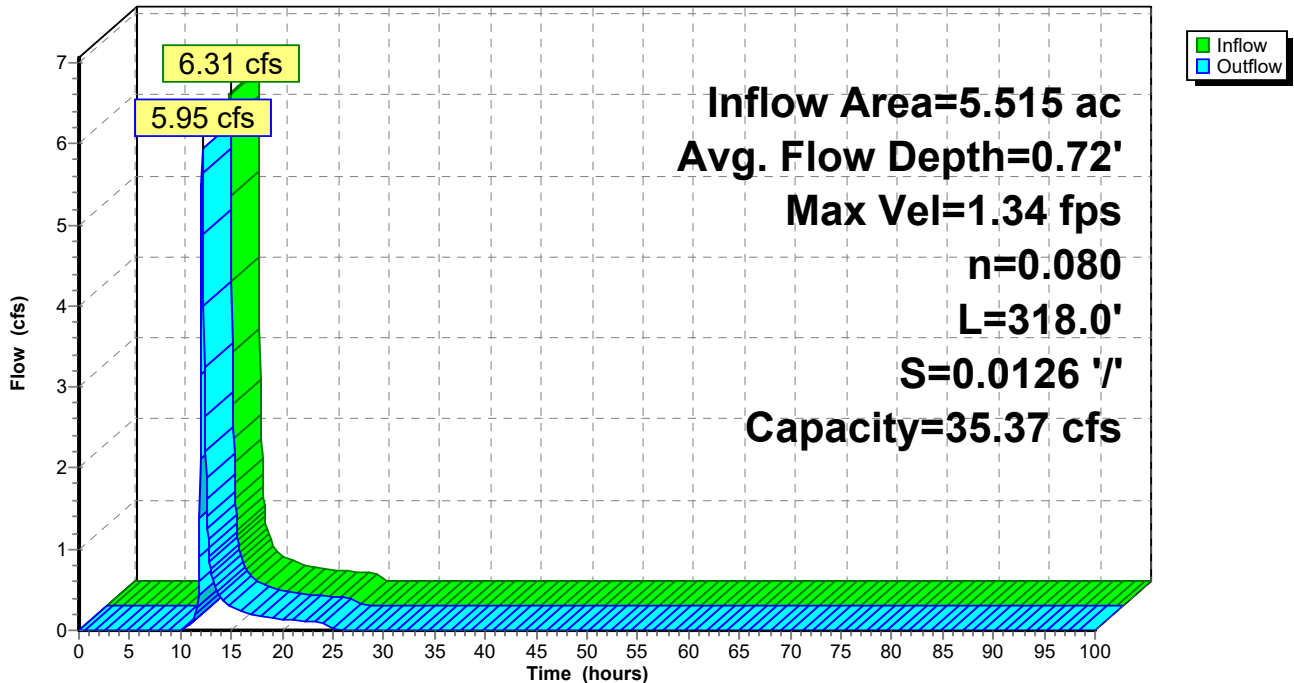
Peak Storage= 1,408 cf @ 12.16 hrs  
 Average Depth at Peak Storage= 0.72' , Surface Width= 8.31'  
 Bank-Full Depth= 1.75' Flow Area= 16.2 sf, Capacity= 35.37 cfs

4.00' x 1.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 14.50'  
 Length= 318.0' Slope= 0.0126 '/  
 Inlet Invert= 335.00', Outlet Invert= 331.00'

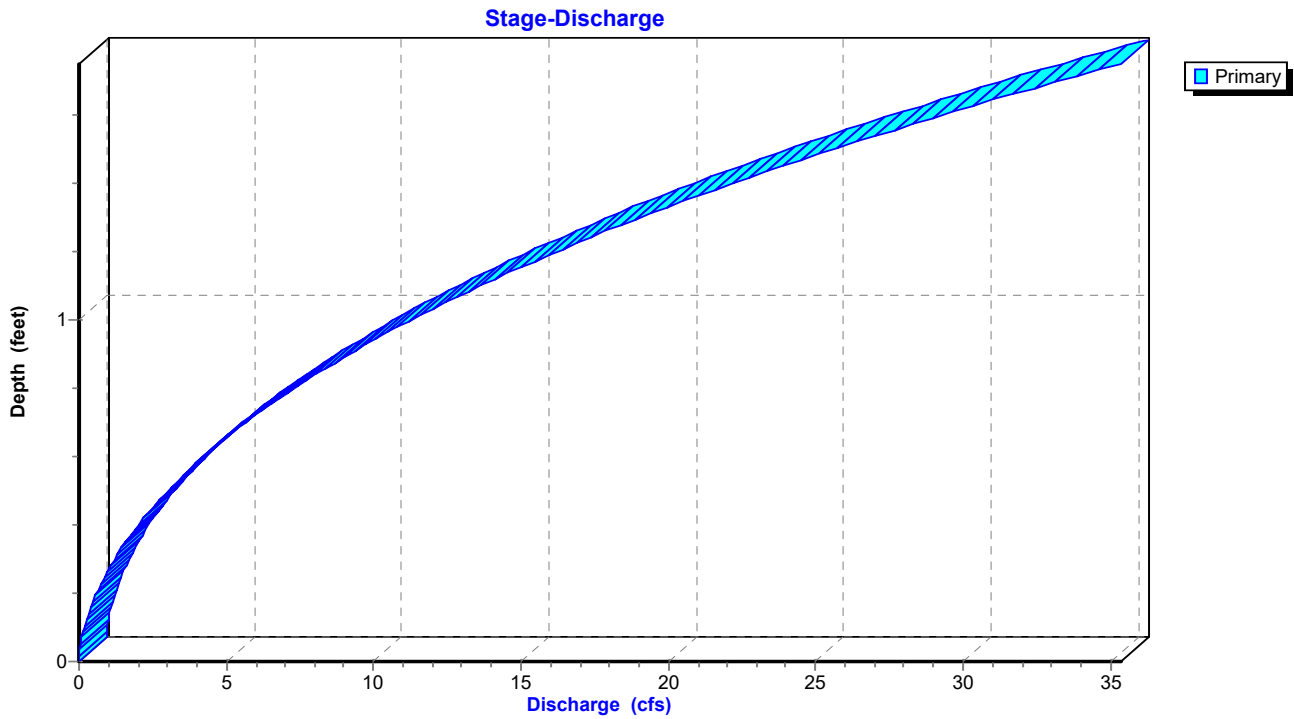


**Reach R7: Proposed RRv Swale**

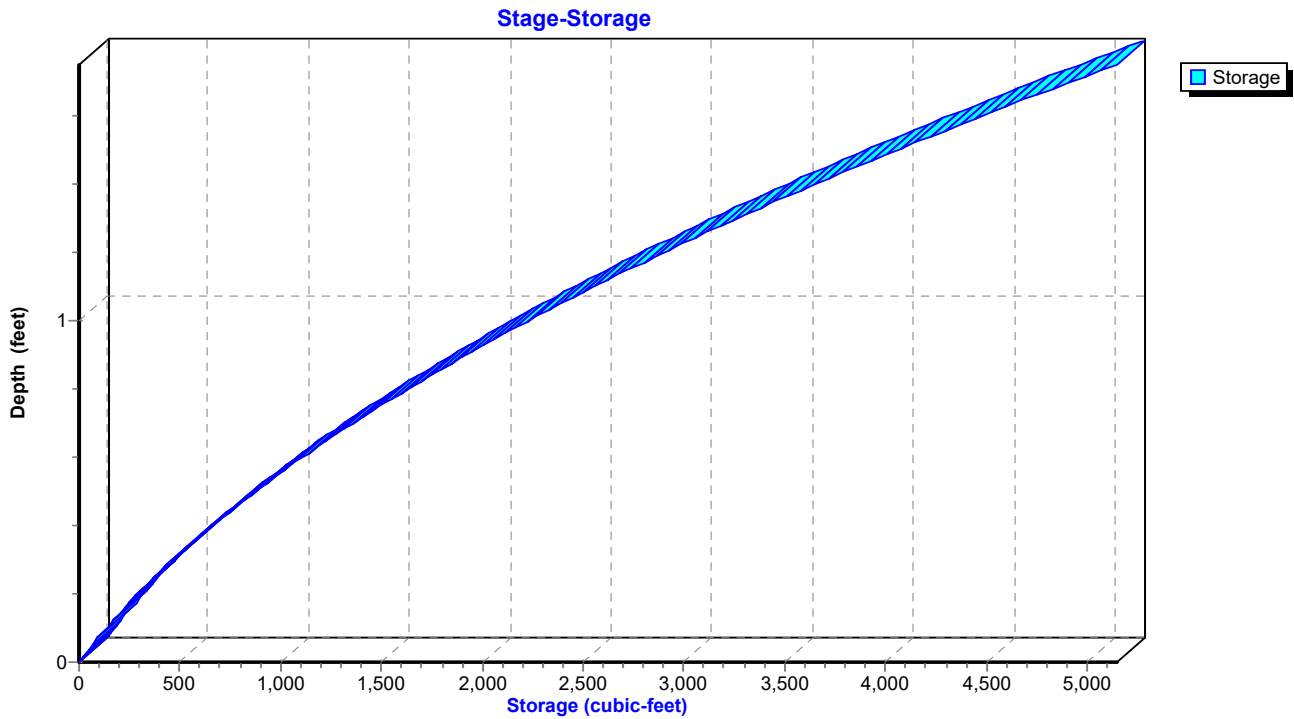
Hydrograph



### Reach R7: Proposed RRv Swale



### Reach R7: Proposed RRv Swale



**Hydrograph for Reach R7: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 335.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 335.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 335.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 335.00           | 0.00          |
| 10.00        | <b>0.01</b>  | <b>9</b>             | <b>335.01</b>    | <b>0.00</b>   |
| 12.50        | <b>1.51</b>  | <b>628</b>           | <b>335.38</b>    | <b>1.87</b>   |
| 15.00        | 0.28         | 183                  | 335.13           | 0.29          |
| 17.50        | 0.18         | 138                  | 335.10           | 0.19          |
| 20.00        | 0.13         | 110                  | 335.08           | 0.13          |
| 22.50        | 0.11         | 101                  | 335.07           | 0.11          |
| 25.00        | 0.00         | 20                   | 335.02           | 0.01          |
| 27.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 335.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 335.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 335.00           | 0.00          |



**Stage-Discharge for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 335.00              | 0.00                 | 0.00               | 336.06              | 1.66                 | 12.63              |
| 335.02              | 0.15                 | 0.01               | 336.08              | 1.68                 | 13.11              |
| 335.04              | 0.24                 | 0.04               | 336.10              | 1.69                 | 13.60              |
| 335.06              | 0.31                 | 0.08               | 336.12              | 1.71                 | 14.10              |
| 335.08              | 0.37                 | 0.13               | 336.14              | 1.73                 | 14.61              |
| 335.10              | 0.43                 | 0.18               | 336.16              | 1.74                 | 15.13              |
| 335.12              | 0.48                 | 0.25               | 336.18              | 1.76                 | 15.66              |
| 335.14              | 0.53                 | 0.33               | 336.20              | 1.78                 | 16.20              |
| 335.16              | 0.57                 | 0.41               | 336.22              | 1.79                 | 16.75              |
| 335.18              | 0.61                 | 0.50               | 336.24              | 1.81                 | 17.31              |
| 335.20              | 0.65                 | 0.60               | 336.26              | 1.82                 | 17.88              |
| 335.22              | 0.69                 | 0.71               | 336.28              | 1.84                 | 18.46              |
| 335.24              | 0.72                 | 0.82               | 336.30              | 1.86                 | 19.05              |
| 335.26              | 0.76                 | 0.94               | 336.32              | 1.87                 | 19.66              |
| 335.28              | 0.79                 | 1.07               | 336.34              | 1.89                 | 20.27              |
| 335.30              | 0.83                 | 1.21               | 336.36              | 1.90                 | 20.90              |
| 335.32              | 0.86                 | 1.36               | 336.38              | 1.92                 | 21.53              |
| 335.34              | 0.89                 | 1.51               | 336.40              | 1.93                 | 22.18              |
| 335.36              | 0.92                 | 1.68               | 336.42              | 1.95                 | 22.84              |
| 335.38              | 0.94                 | 1.84               | 336.44              | 1.96                 | 23.51              |
| 335.40              | 0.97                 | 2.02               | 336.46              | 1.98                 | 24.19              |
| 335.42              | 1.00                 | 2.21               | 336.48              | 1.99                 | 24.88              |
| 335.44              | 1.02                 | 2.40               | 336.50              | 2.01                 | 25.59              |
| 335.46              | 1.05                 | 2.60               | 336.52              | 2.02                 | 26.30              |
| 335.48              | 1.08                 | 2.81               | 336.54              | 2.04                 | 27.03              |
| 335.50              | 1.10                 | 3.03               | 336.56              | 2.05                 | 27.77              |
| 335.52              | 1.12                 | 3.25               | 336.58              | 2.07                 | 28.52              |
| 335.54              | 1.15                 | 3.49               | 336.60              | 2.08                 | 29.28              |
| 335.56              | 1.17                 | 3.73               | 336.62              | 2.09                 | 30.05              |
| 335.58              | 1.19                 | 3.98               | 336.64              | 2.11                 | 30.84              |
| 335.60              | 1.22                 | 4.24               | 336.66              | 2.12                 | 31.64              |
| 335.62              | 1.24                 | 4.50               | 336.68              | 2.14                 | 32.44              |
| 335.64              | 1.26                 | 4.78               | 336.70              | 2.15                 | 33.27              |
| 335.66              | 1.28                 | 5.06               | 336.72              | 2.16                 | 34.10              |
| 335.68              | 1.30                 | 5.35               | 336.74              | <b>2.18</b>          | <b>34.95</b>       |
| 335.70              | 1.32                 | 5.65               |                     |                      |                    |
| 335.72              | 1.34                 | 5.96               |                     |                      |                    |
| 335.74              | 1.36                 | 6.28               |                     |                      |                    |
| 335.76              | 1.38                 | 6.61               |                     |                      |                    |
| 335.78              | 1.40                 | 6.95               |                     |                      |                    |
| 335.80              | 1.42                 | 7.29               |                     |                      |                    |
| 335.82              | 1.44                 | 7.65               |                     |                      |                    |
| 335.84              | 1.46                 | 8.01               |                     |                      |                    |
| 335.86              | 1.48                 | 8.38               |                     |                      |                    |
| 335.88              | 1.50                 | 8.76               |                     |                      |                    |
| 335.90              | 1.52                 | 9.16               |                     |                      |                    |
| 335.92              | 1.54                 | 9.56               |                     |                      |                    |
| 335.94              | 1.55                 | 9.97               |                     |                      |                    |
| 335.96              | 1.57                 | 10.39              |                     |                      |                    |
| 335.98              | 1.59                 | 10.82              |                     |                      |                    |
| 336.00              | 1.61                 | 11.25              |                     |                      |                    |
| 336.02              | 1.63                 | 11.70              |                     |                      |                    |
| 336.04              | 1.64                 | 12.16              |                     |                      |                    |

**Stage-Area-Storage for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 335.00              | 0.0                 | 0                       | 336.06              | 7.6                 | 2,420                   |
| 335.02              | 0.1                 | 26                      | 336.08              | 7.8                 | 2,487                   |
| 335.04              | 0.2                 | 52                      | 336.10              | 8.0                 | 2,554                   |
| 335.06              | 0.3                 | 80                      | 336.12              | 8.2                 | 2,621                   |
| 335.08              | 0.3                 | 108                     | 336.14              | 8.5                 | 2,690                   |
| 335.10              | 0.4                 | 137                     | 336.16              | 8.7                 | 2,759                   |
| 335.12              | 0.5                 | 166                     | 336.18              | 8.9                 | 2,829                   |
| 335.14              | 0.6                 | 197                     | 336.20              | 9.1                 | 2,900                   |
| 335.16              | 0.7                 | 228                     | 336.22              | 9.3                 | 2,972                   |
| 335.18              | 0.8                 | 260                     | 336.24              | 9.6                 | 3,044                   |
| 335.20              | 0.9                 | 293                     | 336.26              | 9.8                 | 3,117                   |
| 335.22              | 1.0                 | 326                     | 336.28              | 10.0                | 3,191                   |
| 335.24              | 1.1                 | 360                     | 336.30              | 10.3                | 3,266                   |
| 335.26              | 1.2                 | 395                     | 336.32              | 10.5                | 3,341                   |
| 335.28              | 1.4                 | 431                     | 336.34              | 10.7                | 3,418                   |
| 335.30              | 1.5                 | 467                     | 336.36              | 11.0                | 3,494                   |
| 335.32              | 1.6                 | 505                     | 336.38              | 11.2                | 3,572                   |
| 335.34              | 1.7                 | 543                     | 336.40              | 11.5                | 3,651                   |
| 335.36              | 1.8                 | 582                     | 336.42              | 11.7                | 3,730                   |
| 335.38              | 2.0                 | 621                     | 336.44              | 12.0                | 3,810                   |
| 335.40              | 2.1                 | 661                     | 336.46              | 12.2                | 3,891                   |
| 335.42              | 2.2                 | 703                     | 336.48              | 12.5                | 3,972                   |
| 335.44              | 2.3                 | 744                     | 336.50              | 12.8                | 4,055                   |
| 335.46              | 2.5                 | 787                     | 336.52              | 13.0                | 4,138                   |
| 335.48              | 2.6                 | 830                     | 336.54              | 13.3                | 4,221                   |
| 335.50              | 2.8                 | 875                     | 336.56              | 13.5                | 4,306                   |
| 335.52              | 2.9                 | 919                     | 336.58              | 13.8                | 4,391                   |
| 335.54              | 3.0                 | 965                     | 336.60              | 14.1                | 4,478                   |
| 335.56              | 3.2                 | 1,011                   | 336.62              | 14.4                | 4,564                   |
| 335.58              | 3.3                 | 1,059                   | 336.64              | 14.6                | 4,652                   |
| 335.60              | 3.5                 | 1,107                   | 336.66              | 14.9                | 4,740                   |
| 335.62              | 3.6                 | 1,155                   | 336.68              | 15.2                | 4,830                   |
| 335.64              | 3.8                 | 1,205                   | 336.70              | 15.5                | 4,919                   |
| 335.66              | 3.9                 | 1,255                   | 336.72              | 15.8                | 5,010                   |
| 335.68              | 4.1                 | 1,306                   | 336.74              | <b>16.0</b>         | <b>5,102</b>            |
| 335.70              | 4.3                 | 1,358                   |                     |                     |                         |
| 335.72              | 4.4                 | 1,410                   |                     |                     |                         |
| 335.74              | 4.6                 | 1,464                   |                     |                     |                         |
| 335.76              | 4.8                 | 1,518                   |                     |                     |                         |
| 335.78              | 4.9                 | 1,573                   |                     |                     |                         |
| 335.80              | 5.1                 | 1,628                   |                     |                     |                         |
| 335.82              | 5.3                 | 1,685                   |                     |                     |                         |
| 335.84              | 5.5                 | 1,742                   |                     |                     |                         |
| 335.86              | 5.7                 | 1,800                   |                     |                     |                         |
| 335.88              | 5.8                 | 1,858                   |                     |                     |                         |
| 335.90              | 6.0                 | 1,918                   |                     |                     |                         |
| 335.92              | 6.2                 | 1,978                   |                     |                     |                         |
| 335.94              | 6.4                 | 2,039                   |                     |                     |                         |
| 335.96              | 6.6                 | 2,100                   |                     |                     |                         |
| 335.98              | 6.8                 | 2,163                   |                     |                     |                         |
| 336.00              | 7.0                 | 2,226                   |                     |                     |                         |
| 336.02              | 7.2                 | 2,290                   |                     |                     |                         |
| 336.04              | 7.4                 | 2,355                   |                     |                     |                         |

**Summary for Reach R8: Proposed RRv Swale**

Inflow Area = 2.075 ac, 33.06% Impervious, Inflow Depth = 0.02" for 1-yr event  
 Inflow = 0.00 cfs @ 24.12 hrs, Volume= 0.003 af  
 Outflow = 0.00 cfs @ 24.32 hrs, Volume= 0.003 af, Atten= 1%, Lag= 11.8 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.14 fps, Min. Travel Time= 66.9 min  
 Avg. Velocity = 0.12 fps, Avg. Travel Time= 79.8 min

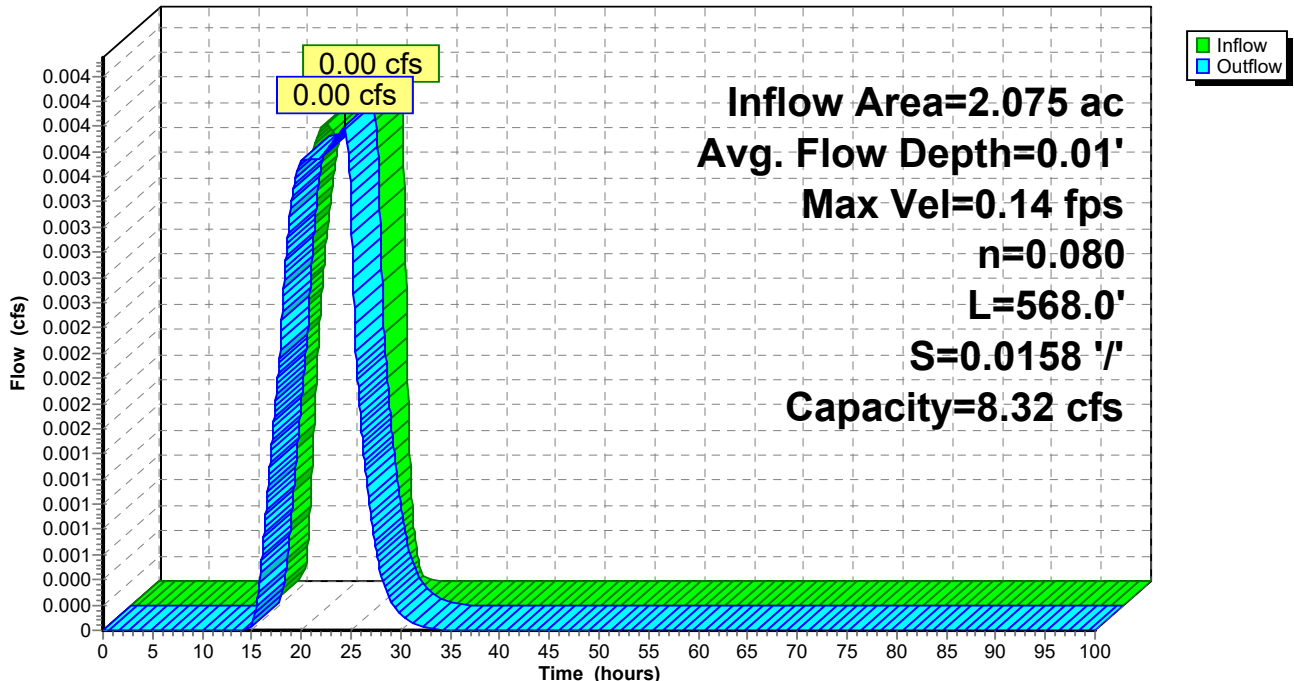
Peak Storage= 16 cf @ 24.32 hrs  
 Average Depth at Peak Storage= 0.01' , Surface Width= 2.08'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 8.32 cfs

2.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/' Top Width= 8.00'  
 Length= 568.0' Slope= 0.0158 '/'  
 Inlet Invert= 340.00', Outlet Invert= 331.00'

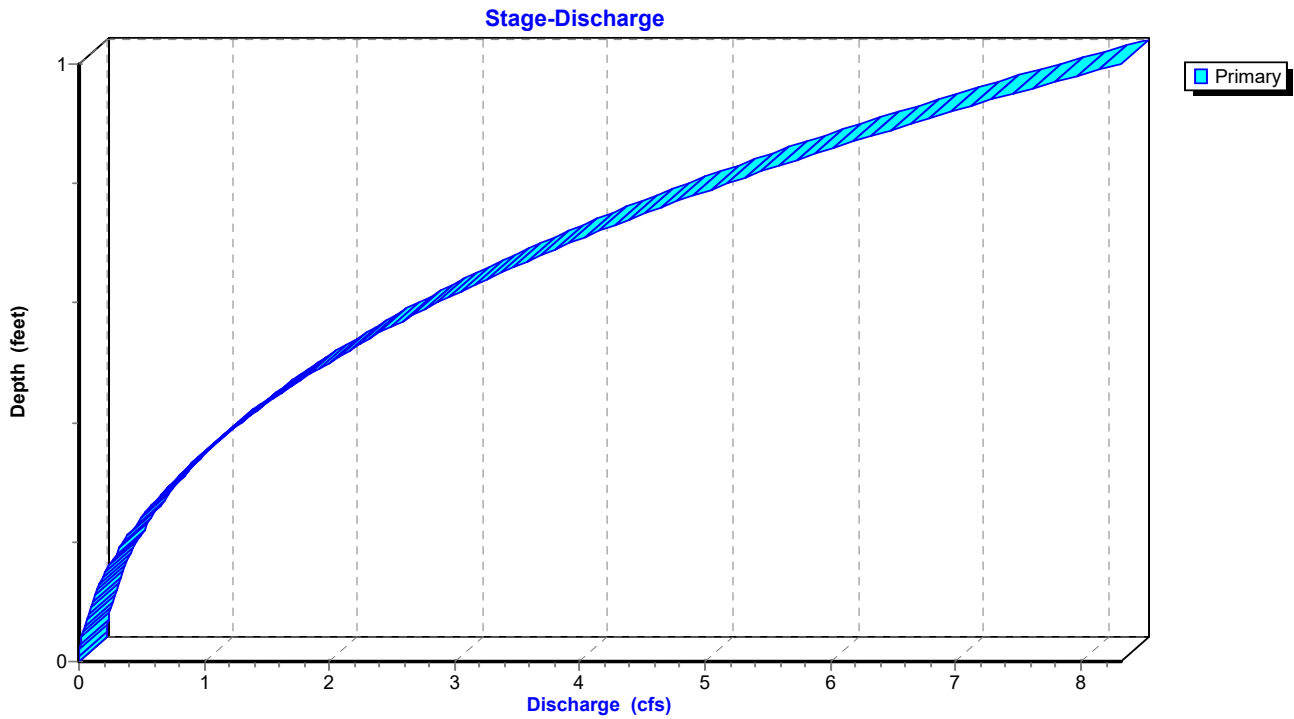


**Reach R8: Proposed RRv Swale**

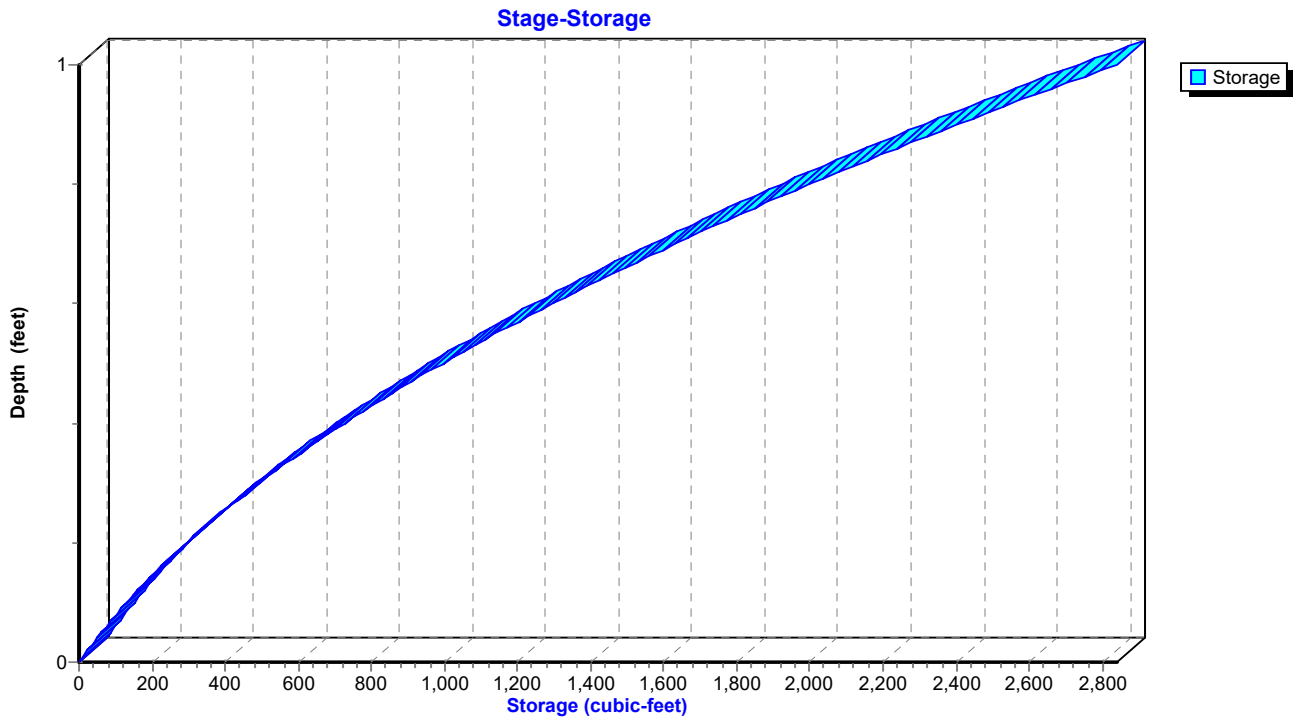
Hydrograph



### Reach R8: Proposed RRv Swale



### Reach R8: Proposed RRv Swale



**Hydrograph for Reach R8: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 340.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 340.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 340.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 340.00           | 0.00          |
| 10.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 12.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 15.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 17.50        | 0.00         | 10                   | 340.01           | 0.00          |
| 20.00        | 0.00         | 15                   | 340.01           | 0.00          |
| 22.50        | <b>0.00</b>  | <b>16</b>            | <b>340.01</b>    | <b>0.00</b>   |
| 25.00        | <b>0.00</b>  | <b>14</b>            | <b>340.01</b>    | <b>0.00</b>   |
| 27.50        | 0.00         | 3                    | 340.00           | 0.00          |
| 30.00        | 0.00         | 1                    | 340.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 340.00           | 0.00          |

**Stage-Discharge for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 340.00              | 0.00                 | 0.00               | 340.53              | 1.17                 | 2.23               |
| 340.01              | 0.11                 | 0.00               | 340.54              | 1.19                 | 2.32               |
| 340.02              | 0.17                 | 0.01               | 340.55              | 1.20                 | 2.40               |
| 340.03              | 0.22                 | 0.01               | 340.56              | 1.21                 | 2.49               |
| 340.04              | 0.26                 | 0.02               | 340.57              | 1.22                 | 2.58               |
| 340.05              | 0.30                 | 0.03               | 340.58              | 1.23                 | 2.67               |
| 340.06              | 0.34                 | 0.04               | 340.59              | 1.24                 | 2.77               |
| 340.07              | 0.37                 | 0.06               | 340.60              | 1.26                 | 2.86               |
| 340.08              | 0.40                 | 0.07               | 340.61              | 1.27                 | 2.96               |
| 340.09              | 0.43                 | 0.09               | 340.62              | 1.28                 | 3.06               |
| 340.10              | 0.46                 | 0.11               | 340.63              | 1.29                 | 3.16               |
| 340.11              | 0.49                 | 0.12               | 340.64              | 1.30                 | 3.26               |
| 340.12              | 0.51                 | 0.15               | 340.65              | 1.31                 | 3.37               |
| 340.13              | 0.54                 | 0.17               | 340.66              | 1.32                 | 3.47               |
| 340.14              | 0.56                 | 0.19               | 340.67              | 1.33                 | 3.58               |
| 340.15              | 0.58                 | 0.21               | 340.68              | 1.34                 | 3.69               |
| 340.16              | 0.61                 | 0.24               | 340.69              | 1.36                 | 3.81               |
| 340.17              | 0.63                 | 0.27               | 340.70              | 1.37                 | 3.92               |
| 340.18              | 0.65                 | 0.30               | 340.71              | 1.38                 | 4.04               |
| 340.19              | 0.67                 | 0.33               | 340.72              | 1.39                 | 4.16               |
| 340.20              | 0.69                 | 0.36               | 340.73              | 1.40                 | 4.28               |
| 340.21              | 0.71                 | 0.39               | 340.74              | 1.41                 | 4.40               |
| 340.22              | 0.72                 | 0.42               | 340.75              | 1.42                 | 4.52               |
| 340.23              | 0.74                 | 0.46               | 340.76              | 1.43                 | 4.65               |
| 340.24              | 0.76                 | 0.50               | 340.77              | 1.44                 | 4.78               |
| 340.25              | 0.78                 | 0.53               | 340.78              | 1.45                 | 4.91               |
| 340.26              | 0.80                 | 0.57               | 340.79              | 1.46                 | 5.04               |
| 340.27              | 0.81                 | 0.62               | 340.80              | 1.47                 | 5.18               |
| 340.28              | 0.83                 | 0.66               | 340.81              | 1.48                 | 5.31               |
| 340.29              | 0.84                 | 0.70               | 340.82              | 1.49                 | 5.45               |
| 340.30              | 0.86                 | 0.75               | 340.83              | 1.50                 | 5.59               |
| 340.31              | 0.88                 | 0.80               | 340.84              | 1.51                 | 5.73               |
| 340.32              | 0.89                 | 0.84               | 340.85              | 1.52                 | 5.88               |
| 340.33              | 0.91                 | 0.89               | 340.86              | 1.53                 | 6.03               |
| 340.34              | 0.92                 | 0.95               | 340.87              | 1.54                 | 6.18               |
| 340.35              | 0.94                 | 1.00               | 340.88              | 1.55                 | 6.33               |
| 340.36              | 0.95                 | 1.05               | 340.89              | 1.56                 | 6.48               |
| 340.37              | 0.96                 | 1.11               | 340.90              | 1.57                 | 6.64               |
| 340.38              | 0.98                 | 1.17               | 340.91              | 1.58                 | 6.80               |
| 340.39              | 0.99                 | 1.23               | 340.92              | 1.59                 | 6.96               |
| 340.40              | 1.01                 | 1.29               | 340.93              | 1.60                 | 7.12               |
| 340.41              | 1.02                 | 1.35               | 340.94              | 1.61                 | 7.29               |
| 340.42              | 1.03                 | 1.42               | 340.95              | 1.62                 | 7.45               |
| 340.43              | 1.05                 | 1.48               | 340.96              | 1.63                 | 7.62               |
| 340.44              | 1.06                 | 1.55               | 340.97              | 1.64                 | 7.79               |
| 340.45              | 1.07                 | 1.62               | 340.98              | 1.65                 | 7.97               |
| 340.46              | 1.09                 | 1.69               | 340.99              | 1.66                 | 8.14               |
| 340.47              | 1.10                 | 1.76               | 341.00              | <b>1.66</b>          | <b>8.32</b>        |
| 340.48              | 1.11                 | 1.84               |                     |                      |                    |
| 340.49              | 1.12                 | 1.91               |                     |                      |                    |
| 340.50              | 1.14                 | 1.99               |                     |                      |                    |
| 340.51              | 1.15                 | 2.07               |                     |                      |                    |
| 340.52              | 1.16                 | 2.15               |                     |                      |                    |

**Stage-Area-Storage for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 340.00              | 0.0                 | 0                       | 340.53              | 1.9                 | 1,081                   |
| 340.01              | 0.0                 | 12                      | 340.54              | 2.0                 | 1,110                   |
| 340.02              | 0.0                 | 23                      | 340.55              | 2.0                 | 1,140                   |
| 340.03              | 0.1                 | 36                      | 340.56              | 2.1                 | 1,171                   |
| 340.04              | 0.1                 | 48                      | 340.57              | 2.1                 | 1,201                   |
| 340.05              | 0.1                 | 61                      | 340.58              | 2.2                 | 1,232                   |
| 340.06              | 0.1                 | 74                      | 340.59              | 2.2                 | 1,263                   |
| 340.07              | 0.2                 | 88                      | 340.60              | 2.3                 | 1,295                   |
| 340.08              | 0.2                 | 102                     | 340.61              | 2.3                 | 1,327                   |
| 340.09              | 0.2                 | 116                     | 340.62              | 2.4                 | 1,359                   |
| 340.10              | 0.2                 | 131                     | 340.63              | 2.5                 | 1,392                   |
| 340.11              | 0.3                 | 146                     | 340.64              | 2.5                 | 1,425                   |
| 340.12              | 0.3                 | 161                     | 340.65              | 2.6                 | 1,458                   |
| 340.13              | 0.3                 | 176                     | 340.66              | 2.6                 | 1,492                   |
| 340.14              | 0.3                 | 192                     | 340.67              | 2.7                 | 1,526                   |
| 340.15              | 0.4                 | 209                     | 340.68              | 2.7                 | 1,560                   |
| 340.16              | 0.4                 | 225                     | 340.69              | 2.8                 | 1,595                   |
| 340.17              | 0.4                 | 242                     | 340.70              | 2.9                 | 1,630                   |
| 340.18              | 0.5                 | 260                     | 340.71              | 2.9                 | 1,666                   |
| 340.19              | 0.5                 | 277                     | 340.72              | 3.0                 | 1,701                   |
| 340.20              | 0.5                 | 295                     | 340.73              | 3.1                 | 1,737                   |
| 340.21              | 0.6                 | 314                     | 340.74              | 3.1                 | 1,774                   |
| 340.22              | 0.6                 | 332                     | 340.75              | 3.2                 | 1,811                   |
| 340.23              | 0.6                 | 351                     | 340.76              | 3.3                 | 1,848                   |
| 340.24              | 0.7                 | 371                     | 340.77              | 3.3                 | 1,885                   |
| 340.25              | 0.7                 | 391                     | 340.78              | 3.4                 | 1,923                   |
| 340.26              | 0.7                 | 411                     | 340.79              | 3.5                 | 1,961                   |
| 340.27              | 0.8                 | 431                     | 340.80              | 3.5                 | 1,999                   |
| 340.28              | 0.8                 | 452                     | 340.81              | 3.6                 | 2,038                   |
| 340.29              | 0.8                 | 473                     | 340.82              | 3.7                 | 2,077                   |
| 340.30              | 0.9                 | 494                     | 340.83              | 3.7                 | 2,117                   |
| 340.31              | 0.9                 | 516                     | 340.84              | 3.8                 | 2,157                   |
| 340.32              | 0.9                 | 538                     | 340.85              | 3.9                 | 2,197                   |
| 340.33              | 1.0                 | 560                     | 340.86              | 3.9                 | 2,237                   |
| 340.34              | 1.0                 | 583                     | 340.87              | 4.0                 | 2,278                   |
| 340.35              | 1.1                 | 606                     | 340.88              | 4.1                 | 2,319                   |
| 340.36              | 1.1                 | 630                     | 340.89              | 4.2                 | 2,361                   |
| 340.37              | 1.2                 | 654                     | 340.90              | 4.2                 | 2,403                   |
| 340.38              | 1.2                 | 678                     | 340.91              | 4.3                 | 2,445                   |
| 340.39              | 1.2                 | 702                     | 340.92              | 4.4                 | 2,487                   |
| 340.40              | 1.3                 | 727                     | 340.93              | 4.5                 | 2,530                   |
| 340.41              | 1.3                 | 752                     | 340.94              | 4.5                 | 2,573                   |
| 340.42              | 1.4                 | 778                     | 340.95              | 4.6                 | 2,617                   |
| 340.43              | 1.4                 | 804                     | 340.96              | 4.7                 | 2,661                   |
| 340.44              | 1.5                 | 830                     | 340.97              | 4.8                 | 2,705                   |
| 340.45              | 1.5                 | 856                     | 340.98              | 4.8                 | 2,750                   |
| 340.46              | 1.6                 | 883                     | 340.99              | 4.9                 | 2,795                   |
| 340.47              | 1.6                 | 910                     | 341.00              | <b>5.0</b>          | <b>2,840</b>            |
| 340.48              | 1.7                 | 938                     |                     |                     |                         |
| 340.49              | 1.7                 | 966                     |                     |                     |                         |
| 340.50              | 1.8                 | 994                     |                     |                     |                         |
| 340.51              | 1.8                 | 1,023                   |                     |                     |                         |
| 340.52              | 1.9                 | 1,051                   |                     |                     |                         |

**Summary for Reach R9: Proposed RRV Swale**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 0.98" for 1-yr event  
 Inflow = 1.95 cfs @ 12.01 hrs, Volume= 0.106 af  
 Outflow = 1.00 cfs @ 12.14 hrs, Volume= 0.106 af, Atten= 49%, Lag= 7.3 min  
 Routed to Pond 6P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.64 fps, Min. Travel Time= 19.8 min  
 Avg. Velocity = 0.15 fps, Avg. Travel Time= 82.2 min

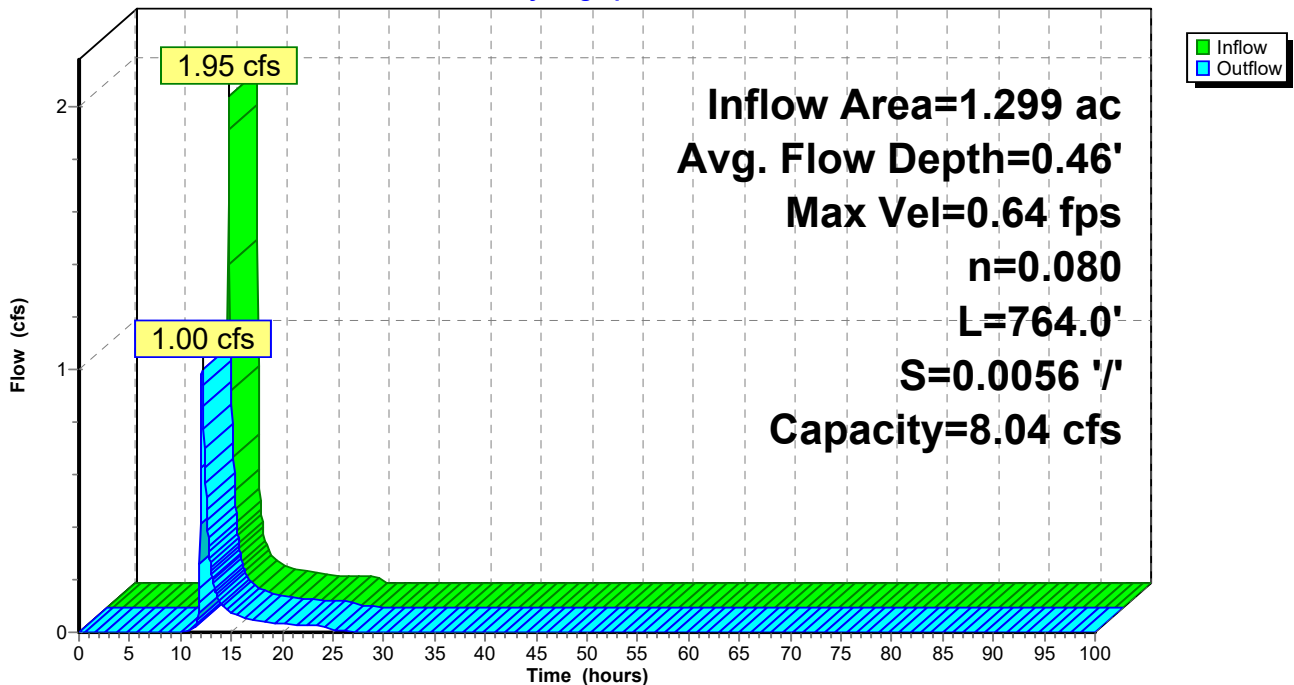
Peak Storage= 1,188 cf @ 12.14 hrs  
 Average Depth at Peak Storage= 0.46' , Surface Width= 4.76'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 8.04 cfs

2.00' x 1.25' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 9.50'  
 Length= 764.0' Slope= 0.0056 '/  
 Inlet Invert= 337.00', Outlet Invert= 332.75'



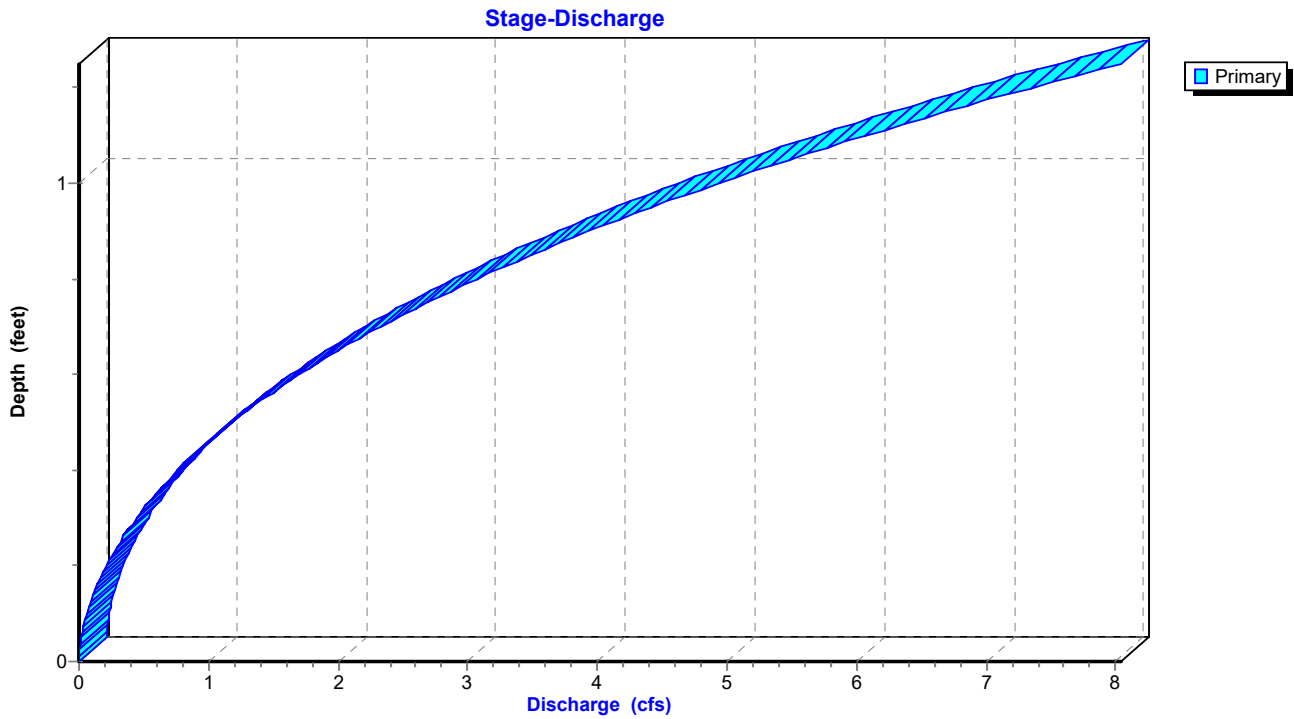
**Reach R9: Proposed RRV Swale**

Hydrograph

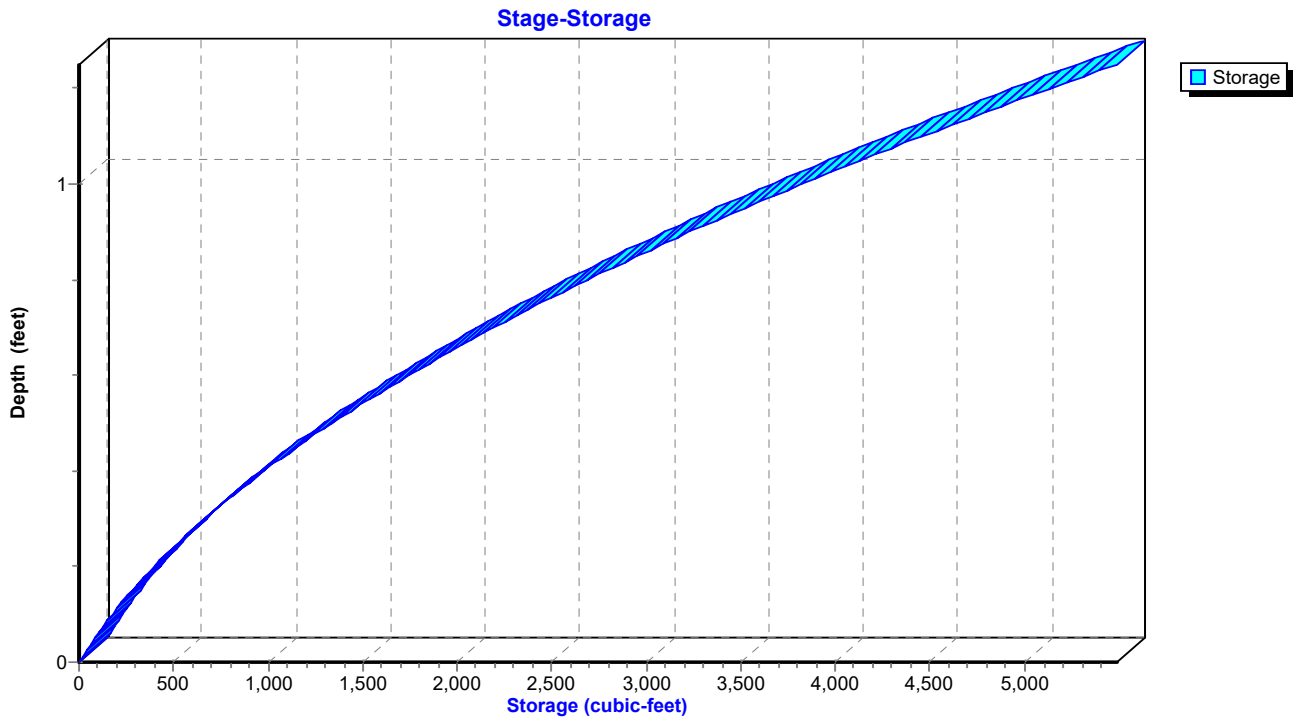




**Reach R9: Proposed RRV Swale**



**Reach R9: Proposed RRV Swale**



**Hydrograph for Reach R9: Proposed RRV Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 337.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 337.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 337.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 337.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>4</b>             | <b>337.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.23</b>  | <b>739</b>           | <b>337.32</b>    | <b>0.51</b>   |
| 15.00        | 0.07         | 196                  | 337.11           | 0.07          |
| 17.50        | 0.04         | 143                  | 337.08           | 0.05          |
| 20.00        | 0.03         | 115                  | 337.07           | 0.03          |
| 22.50        | 0.03         | 102                  | 337.06           | 0.03          |
| 25.00        | 0.00         | 51                   | 337.03           | 0.01          |
| 27.50        | 0.00         | 16                   | 337.01           | 0.00          |
| 30.00        | 0.00         | 7                    | 337.00           | 0.00          |
| 32.50        | 0.00         | 3                    | 337.00           | 0.00          |
| 35.00        | 0.00         | 1                    | 337.00           | 0.00          |
| 37.50        | 0.00         | 1                    | 337.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 337.00           | 0.00          |

**Stage-Discharge for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.00              | 0.00                 | 0.00               | 337.53              | 0.70                 | 1.32               | 338.06              | 1.02                 | 5.60               |
| 337.01              | 0.06                 | 0.00               | 337.54              | 0.70                 | 1.37               | 338.07              | 1.02                 | 5.71               |
| 337.02              | 0.10                 | 0.00               | 337.55              | 0.71                 | 1.42               | 338.08              | 1.03                 | 5.83               |
| 337.03              | 0.13                 | 0.01               | 337.56              | 0.72                 | 1.48               | 338.09              | 1.04                 | 5.95               |
| 337.04              | 0.16                 | 0.01               | 337.57              | 0.72                 | 1.53               | 338.10              | 1.04                 | 6.07               |
| 337.05              | 0.18                 | 0.02               | 337.58              | 0.73                 | 1.58               | 338.11              | 1.05                 | 6.19               |
| 337.06              | 0.20                 | 0.03               | 337.59              | 0.74                 | 1.64               | 338.12              | 1.05                 | 6.31               |
| 337.07              | 0.22                 | 0.03               | 337.60              | 0.74                 | 1.70               | 338.13              | 1.06                 | 6.43               |
| 337.08              | 0.24                 | 0.04               | 337.61              | 0.75                 | 1.75               | 338.14              | 1.06                 | 6.56               |
| 337.09              | 0.26                 | 0.05               | 337.62              | 0.76                 | 1.81               | 338.15              | 1.07                 | 6.69               |
| 337.10              | 0.27                 | 0.06               | 337.63              | 0.76                 | 1.87               | 338.16              | 1.07                 | 6.82               |
| 337.11              | 0.29                 | 0.07               | 337.64              | 0.77                 | 1.93               | 338.17              | 1.08                 | 6.95               |
| 337.12              | 0.30                 | 0.09               | 337.65              | 0.78                 | 2.00               | 338.18              | 1.08                 | 7.08               |
| 337.13              | 0.32                 | 0.10               | 337.66              | 0.78                 | 2.06               | 338.19              | 1.09                 | 7.21               |
| 337.14              | 0.33                 | 0.11               | 337.67              | 0.79                 | 2.12               | 338.20              | 1.09                 | 7.35               |
| 337.15              | 0.35                 | 0.13               | 337.68              | 0.80                 | 2.19               | 338.21              | 1.10                 | 7.48               |
| 337.16              | 0.36                 | 0.14               | 337.69              | 0.80                 | 2.26               | 338.22              | 1.10                 | 7.62               |
| 337.17              | 0.37                 | 0.16               | 337.70              | 0.81                 | 2.32               | 338.23              | 1.11                 | 7.76               |
| 337.18              | 0.38                 | 0.18               | 337.71              | 0.82                 | 2.39               | 338.24              | 1.11                 | 7.90               |
| 337.19              | 0.40                 | 0.19               | 337.72              | 0.82                 | 2.46               | 338.25              | <b>1.12</b>          | <b>8.04</b>        |
| 337.20              | 0.41                 | 0.21               | 337.73              | 0.83                 | 2.53               |                     |                      |                    |
| 337.21              | 0.42                 | 0.23               | 337.74              | 0.83                 | 2.61               |                     |                      |                    |
| 337.22              | 0.43                 | 0.25               | 337.75              | 0.84                 | 2.68               |                     |                      |                    |
| 337.23              | 0.44                 | 0.27               | 337.76              | 0.85                 | 2.75               |                     |                      |                    |
| 337.24              | 0.45                 | 0.29               | 337.77              | 0.85                 | 2.83               |                     |                      |                    |
| 337.25              | 0.46                 | 0.32               | 337.78              | 0.86                 | 2.91               |                     |                      |                    |
| 337.26              | 0.47                 | 0.34               | 337.79              | 0.87                 | 2.99               |                     |                      |                    |
| 337.27              | 0.48                 | 0.37               | 337.80              | 0.87                 | 3.07               |                     |                      |                    |
| 337.28              | 0.49                 | 0.39               | 337.81              | 0.88                 | 3.15               |                     |                      |                    |
| 337.29              | 0.50                 | 0.42               | 337.82              | 0.88                 | 3.23               |                     |                      |                    |
| 337.30              | 0.51                 | 0.44               | 337.83              | 0.89                 | 3.31               |                     |                      |                    |
| 337.31              | 0.52                 | 0.47               | 337.84              | 0.89                 | 3.40               |                     |                      |                    |
| 337.32              | 0.53                 | 0.50               | 337.85              | 0.90                 | 3.48               |                     |                      |                    |
| 337.33              | 0.54                 | 0.53               | 337.86              | 0.91                 | 3.57               |                     |                      |                    |
| 337.34              | 0.55                 | 0.56               | 337.87              | 0.91                 | 3.66               |                     |                      |                    |
| 337.35              | 0.55                 | 0.59               | 337.88              | 0.92                 | 3.75               |                     |                      |                    |
| 337.36              | 0.56                 | 0.62               | 337.89              | 0.92                 | 3.84               |                     |                      |                    |
| 337.37              | 0.57                 | 0.66               | 337.90              | 0.93                 | 3.93               |                     |                      |                    |
| 337.38              | 0.58                 | 0.69               | 337.91              | 0.94                 | 4.03               |                     |                      |                    |
| 337.39              | 0.59                 | 0.73               | 337.92              | 0.94                 | 4.12               |                     |                      |                    |
| 337.40              | 0.60                 | 0.76               | 337.93              | 0.95                 | 4.22               |                     |                      |                    |
| 337.41              | 0.60                 | 0.80               | 337.94              | 0.95                 | 4.32               |                     |                      |                    |
| 337.42              | 0.61                 | 0.84               | 337.95              | 0.96                 | 4.42               |                     |                      |                    |
| 337.43              | 0.62                 | 0.88               | 337.96              | 0.96                 | 4.52               |                     |                      |                    |
| 337.44              | 0.63                 | 0.92               | 337.97              | 0.97                 | 4.62               |                     |                      |                    |
| 337.45              | 0.64                 | 0.96               | 337.98              | 0.98                 | 4.72               |                     |                      |                    |
| 337.46              | 0.64                 | 1.00               | 337.99              | 0.98                 | 4.83               |                     |                      |                    |
| 337.47              | 0.65                 | 1.04               | 338.00              | 0.99                 | 4.93               |                     |                      |                    |
| 337.48              | 0.66                 | 1.09               | 338.01              | 0.99                 | 5.04               |                     |                      |                    |
| 337.49              | 0.67                 | 1.13               | 338.02              | 1.00                 | 5.15               |                     |                      |                    |
| 337.50              | 0.67                 | 1.18               | 338.03              | 1.00                 | 5.26               |                     |                      |                    |
| 337.51              | 0.68                 | 1.23               | 338.04              | 1.01                 | 5.37               |                     |                      |                    |
| 337.52              | 0.69                 | 1.27               | 338.05              | 1.01                 | 5.48               |                     |                      |                    |

**Stage-Area-Storage for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.00              | 0.0                 | 0                       | 338.06              | 5.5                 | 4,195                   |
| 337.02              | 0.0                 | 32                      | 338.08              | 5.7                 | 4,324                   |
| 337.04              | 0.1                 | 65                      | 338.10              | 5.8                 | 4,454                   |
| 337.06              | 0.1                 | 100                     | 338.12              | 6.0                 | 4,587                   |
| 337.08              | 0.2                 | 137                     | 338.14              | 6.2                 | 4,721                   |
| 337.10              | 0.2                 | 176                     | 338.16              | 6.4                 | 4,857                   |
| 337.12              | 0.3                 | 216                     | 338.18              | 6.5                 | 4,995                   |
| 337.14              | 0.3                 | 259                     | 338.20              | 6.7                 | 5,134                   |
| 337.16              | 0.4                 | 303                     | 338.22              | 6.9                 | 5,276                   |
| 337.18              | 0.5                 | 349                     | 338.24              | <b>7.1</b>          | <b>5,419</b>            |
| 337.20              | 0.5                 | 397                     |                     |                     |                         |
| 337.22              | 0.6                 | 447                     |                     |                     |                         |
| 337.24              | 0.7                 | 499                     |                     |                     |                         |
| 337.26              | 0.7                 | 552                     |                     |                     |                         |
| 337.28              | 0.8                 | 608                     |                     |                     |                         |
| 337.30              | 0.9                 | 665                     |                     |                     |                         |
| 337.32              | 0.9                 | 724                     |                     |                     |                         |
| 337.34              | 1.0                 | 785                     |                     |                     |                         |
| 337.36              | 1.1                 | 847                     |                     |                     |                         |
| 337.38              | 1.2                 | 912                     |                     |                     |                         |
| 337.40              | 1.3                 | 978                     |                     |                     |                         |
| 337.42              | 1.4                 | 1,046                   |                     |                     |                         |
| 337.44              | 1.5                 | 1,116                   |                     |                     |                         |
| 337.46              | 1.6                 | 1,188                   |                     |                     |                         |
| 337.48              | 1.7                 | 1,262                   |                     |                     |                         |
| 337.50              | 1.8                 | 1,337                   |                     |                     |                         |
| 337.52              | 1.9                 | 1,414                   |                     |                     |                         |
| 337.54              | 2.0                 | 1,494                   |                     |                     |                         |
| 337.56              | 2.1                 | 1,575                   |                     |                     |                         |
| 337.58              | 2.2                 | 1,657                   |                     |                     |                         |
| 337.60              | 2.3                 | 1,742                   |                     |                     |                         |
| 337.62              | 2.4                 | 1,828                   |                     |                     |                         |
| 337.64              | 2.5                 | 1,917                   |                     |                     |                         |
| 337.66              | 2.6                 | 2,007                   |                     |                     |                         |
| 337.68              | 2.7                 | 2,099                   |                     |                     |                         |
| 337.70              | 2.9                 | 2,193                   |                     |                     |                         |
| 337.72              | 3.0                 | 2,288                   |                     |                     |                         |
| 337.74              | 3.1                 | 2,386                   |                     |                     |                         |
| 337.76              | 3.3                 | 2,485                   |                     |                     |                         |
| 337.78              | 3.4                 | 2,586                   |                     |                     |                         |
| 337.80              | 3.5                 | 2,689                   |                     |                     |                         |
| 337.82              | 3.7                 | 2,794                   |                     |                     |                         |
| 337.84              | 3.8                 | 2,901                   |                     |                     |                         |
| 337.86              | 3.9                 | 3,009                   |                     |                     |                         |
| 337.88              | 4.1                 | 3,120                   |                     |                     |                         |
| 337.90              | 4.2                 | 3,232                   |                     |                     |                         |
| 337.92              | 4.4                 | 3,346                   |                     |                     |                         |
| 337.94              | 4.5                 | 3,462                   |                     |                     |                         |
| 337.96              | 4.7                 | 3,579                   |                     |                     |                         |
| 337.98              | 4.8                 | 3,699                   |                     |                     |                         |
| 338.00              | 5.0                 | 3,820                   |                     |                     |                         |
| 338.02              | 5.2                 | 3,943                   |                     |                     |                         |
| 338.04              | 5.3                 | 4,068                   |                     |                     |                         |

**Summary for Pond 4P: Proposed Stormwater Pond**

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=512)

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.02" for 1-yr event  
 Inflow = 0.03 cfs @ 18.62 hrs, Volume= 0.020 af  
 Outflow = 0.02 cfs @ 24.36 hrs, Volume= 0.019 af, Atten= 13%, Lag= 344.3 min  
 Primary = 0.02 cfs @ 24.36 hrs, Volume= 0.019 af  
 Routed to Reach R12 : 12" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.00' Surf.Area= 1,864 sf Storage= 1,362 cf  
 Peak Elev= 337.20' @ 24.38 hrs Surf.Area= 2,063 sf Storage= 1,753 cf (391 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 410.9 min ( 1,604.7 - 1,193.8 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 338.50' | 5,344 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 335.00' | 3,537 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 334.50' | 1,862 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 10,742 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 338.50           | 3,608             | 353.0         | 0                      | 0                      | 3,608            |
| 339.00           | 4,127             | 266.0         | 1,932                  | 1,932                  | 7,896            |
| 339.75           | 4,983             | 287.0         | 3,411                  | 5,344                  | 8,843            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 335.00           | 29                | 23.0          | 0                      | 0                      | 29               |
| 336.00           | 189               | 66.0          | 97                     | 97                     | 337              |
| 337.00           | 1,332             | 155.0         | 674                    | 772                    | 1,906            |
| 338.00           | 2,017             | 182.0         | 1,663                  | 2,434                  | 2,649            |
| 338.50           | 2,399             | 200.0         | 1,103                  | 3,537                  | 3,205            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 334.50           | 3                 | 7.6           | 0                      | 0                      | 3                |
| 335.00           | 83                | 48.0          | 17                     | 17                     | 182              |
| 336.00           | 282               | 74.0          | 173                    | 190                    | 442              |
| 337.00           | 532               | 93.0          | 400                    | 590                    | 708              |
| 338.00           | 953               | 118.0         | 732                    | 1,322                  | 1,141            |
| 338.50           | 1,209             | 136.0         | 539                    | 1,862                  | 1,510            |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 338.50' | <b>26.0' long x 17.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2     | Primary   | 338.50' | <b>12.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |
| #3     | Primary   | 337.86' | <b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads   |
| #4     | Primary   | 337.00' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads   |

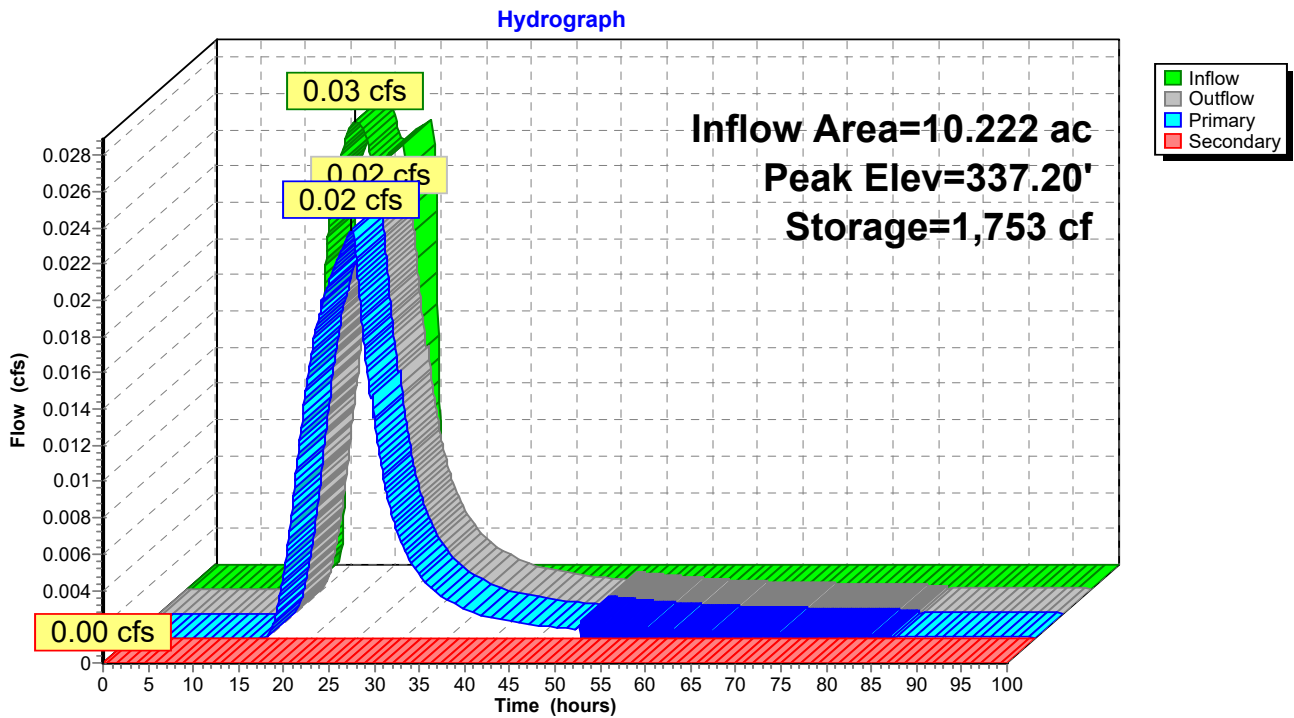
**Primary OutFlow** Max=0.02 cfs @ 24.36 hrs HW=337.20' TW=337.19' (Dynamic Tailwater)

- ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)
- ↳ **3=Orifice/Grate** ( Controls 0.00 cfs)
- ↳ **4=Orifice/Grate** (Orifice Controls 0.02 cfs @ 0.54 fps)

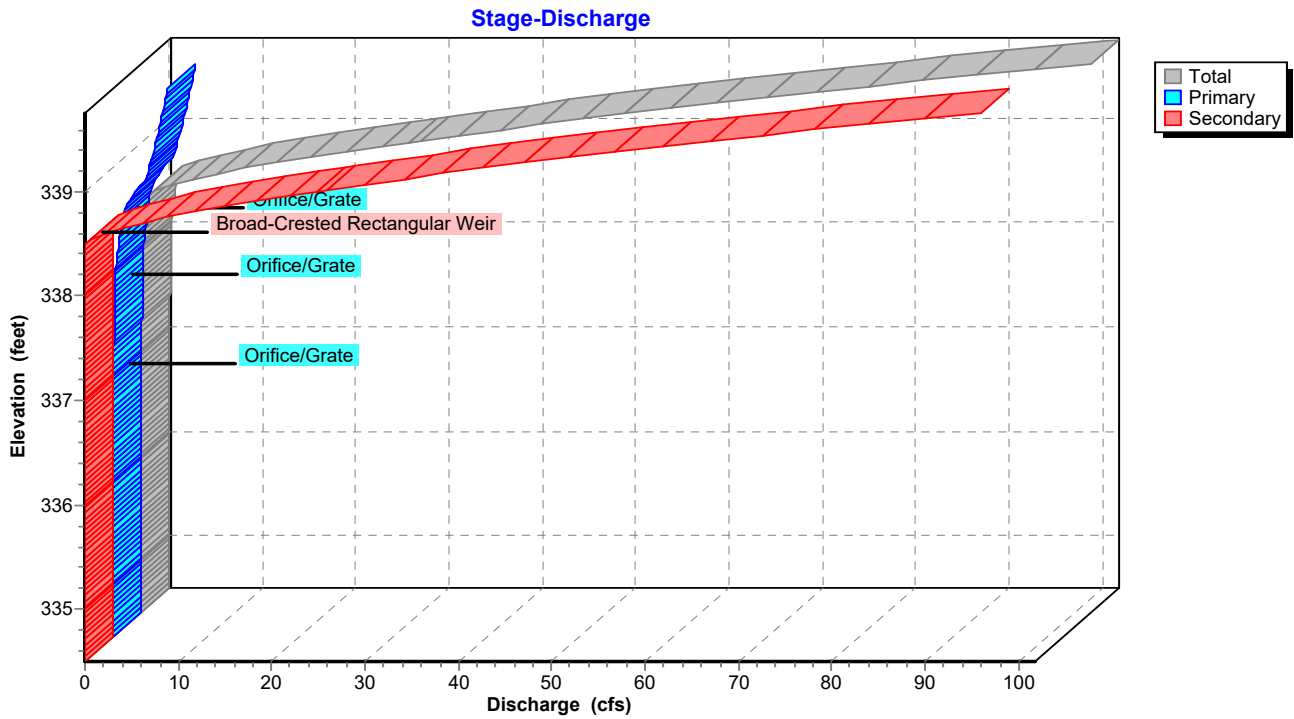
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=337.00' TW=0.00' (Dynamic Tailwater)

- ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

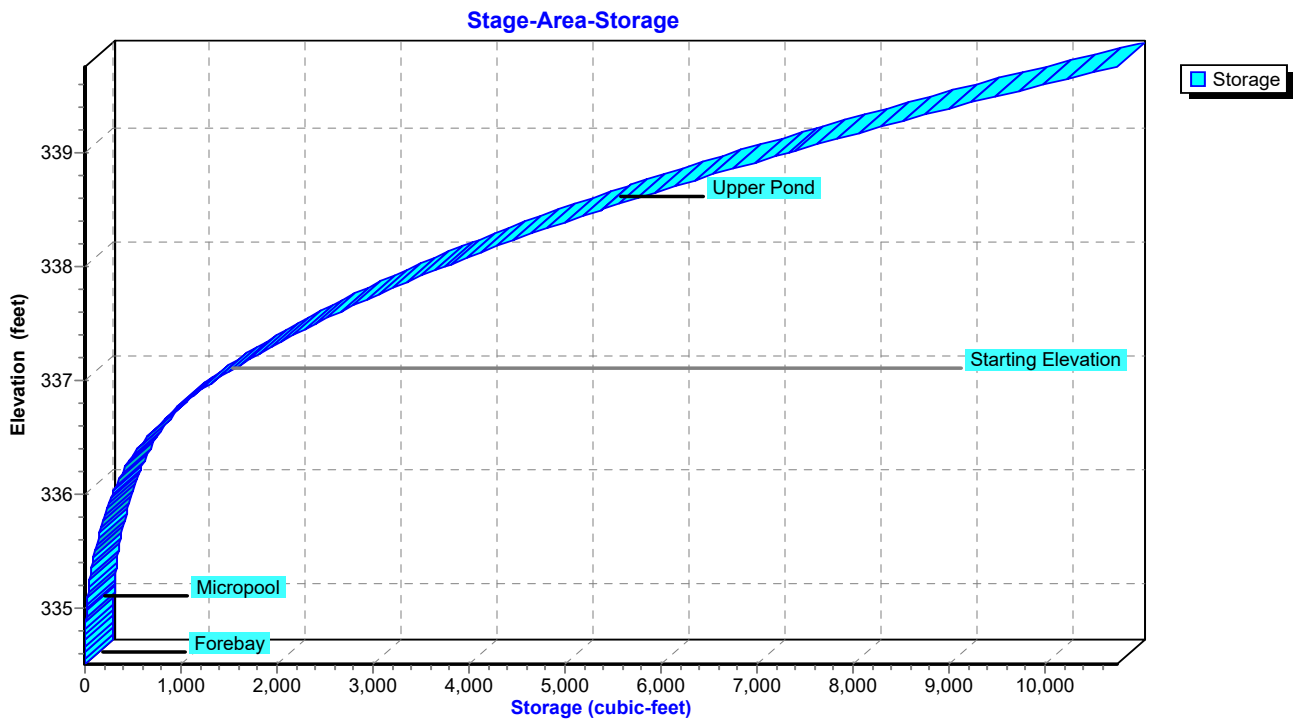
**Pond 4P: Proposed Stormwater Pond**



### Pond 4P: Proposed Stormwater Pond



### Pond 4P: Proposed Stormwater Pond



**Hydrograph for Pond 4P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 10.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 12.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 15.00        | 0.01         | 1,386                | 337.01           | 0.00          | 0.00          | 0.00            |
| 17.50        | <b>0.02</b>  | 1,559                | 337.10           | 0.01          | 0.01          | 0.00            |
| 20.00        | <b>0.02</b>  | 1,688                | 337.17           | 0.02          | 0.02          | 0.00            |
| 22.50        | 0.02         | <b>1,734</b>         | <b>337.19</b>    | <b>0.02</b>   | <b>0.02</b>   | 0.00            |
| 25.00        | 0.01         | <b>1,735</b>         | <b>337.19</b>    | <b>0.02</b>   | <b>0.02</b>   | 0.00            |
| 27.50        | 0.00         | 1,613                | 337.13           | 0.01          | 0.01          | 0.00            |
| 30.00        | 0.00         | 1,548                | 337.10           | 0.01          | 0.01          | 0.00            |
| 32.50        | 0.00         | 1,512                | 337.08           | 0.00          | 0.00          | 0.00            |
| 35.00        | 0.00         | 1,488                | 337.07           | 0.00          | 0.00          | 0.00            |
| 37.50        | 0.00         | 1,472                | 337.06           | 0.00          | 0.00          | 0.00            |
| 40.00        | 0.00         | 1,461                | 337.05           | 0.00          | 0.00          | 0.00            |
| 42.50        | 0.00         | 1,452                | 337.05           | 0.00          | 0.00          | 0.00            |
| 45.00        | 0.00         | 1,445                | 337.04           | 0.00          | 0.00          | 0.00            |
| 47.50        | 0.00         | 1,439                | 337.04           | 0.00          | 0.00          | 0.00            |
| 50.00        | 0.00         | 1,434                | 337.04           | 0.00          | 0.00          | 0.00            |
| 52.50        | 0.00         | 1,430                | 337.04           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,427                | 337.03           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,424                | 337.03           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,421                | 337.03           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,419                | 337.03           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,417                | 337.03           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,415                | 337.03           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,413                | 337.03           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,412                | 337.03           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,410                | 337.03           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,409                | 337.03           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,408                | 337.02           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,407                | 337.02           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,406                | 337.02           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,405                | 337.02           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,404                | 337.02           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,403                | 337.02           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,402                | 337.02           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,402                | 337.02           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,401                | 337.02           | 0.00          | 0.00          | 0.00            |



**Stage-Discharge for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 334.50              | 0.00               | 0.00             | 0.00               | 337.15              | 0.04               | 0.04             | 0.00               |
| 334.55              | 0.00               | 0.00             | 0.00               | 337.20              | 0.06               | 0.06             | 0.00               |
| 334.60              | 0.00               | 0.00             | 0.00               | 337.25              | 0.08               | 0.08             | 0.00               |
| 334.65              | 0.00               | 0.00             | 0.00               | 337.30              | 0.10               | 0.10             | 0.00               |
| 334.70              | 0.00               | 0.00             | 0.00               | 337.35              | 0.11               | 0.11             | 0.00               |
| 334.75              | 0.00               | 0.00             | 0.00               | 337.40              | 0.12               | 0.12             | 0.00               |
| 334.80              | 0.00               | 0.00             | 0.00               | 337.45              | 0.13               | 0.13             | 0.00               |
| 334.85              | 0.00               | 0.00             | 0.00               | 337.50              | 0.14               | 0.14             | 0.00               |
| 334.90              | 0.00               | 0.00             | 0.00               | 337.55              | 0.15               | 0.15             | 0.00               |
| 334.95              | 0.00               | 0.00             | 0.00               | 337.60              | 0.16               | 0.16             | 0.00               |
| 335.00              | 0.00               | 0.00             | 0.00               | 337.65              | 0.17               | 0.17             | 0.00               |
| 335.05              | 0.00               | 0.00             | 0.00               | 337.70              | 0.18               | 0.18             | 0.00               |
| 335.10              | 0.00               | 0.00             | 0.00               | 337.75              | 0.19               | 0.19             | 0.00               |
| 335.15              | 0.00               | 0.00             | 0.00               | 337.80              | 0.19               | 0.19             | 0.00               |
| 335.20              | 0.00               | 0.00             | 0.00               | 337.85              | 0.20               | 0.20             | 0.00               |
| 335.25              | 0.00               | 0.00             | 0.00               | 337.90              | 0.21               | 0.21             | 0.00               |
| 335.30              | 0.00               | 0.00             | 0.00               | 337.95              | 0.24               | 0.24             | 0.00               |
| 335.35              | 0.00               | 0.00             | 0.00               | 338.00              | 0.28               | 0.28             | 0.00               |
| 335.40              | 0.00               | 0.00             | 0.00               | 338.05              | 0.33               | 0.33             | 0.00               |
| 335.45              | 0.00               | 0.00             | 0.00               | 338.10              | 0.39               | 0.39             | 0.00               |
| 335.50              | 0.00               | 0.00             | 0.00               | 338.15              | 0.46               | 0.46             | 0.00               |
| 335.55              | 0.00               | 0.00             | 0.00               | 338.20              | 0.53               | 0.53             | 0.00               |
| 335.60              | 0.00               | 0.00             | 0.00               | 338.25              | 0.60               | 0.60             | 0.00               |
| 335.65              | 0.00               | 0.00             | 0.00               | 338.30              | 0.67               | 0.67             | 0.00               |
| 335.70              | 0.00               | 0.00             | 0.00               | 338.35              | 0.73               | 0.73             | 0.00               |
| 335.75              | 0.00               | 0.00             | 0.00               | 338.40              | 0.78               | 0.78             | 0.00               |
| 335.80              | 0.00               | 0.00             | 0.00               | 338.45              | 0.82               | 0.82             | 0.00               |
| 335.85              | 0.00               | 0.00             | 0.00               | 338.50              | 0.87               | 0.87             | 0.00               |
| 335.90              | 0.00               | 0.00             | 0.00               | 338.55              | 1.80               | 1.02             | 0.78               |
| 335.95              | 0.00               | 0.00             | 0.00               | 338.60              | 3.48               | 1.27             | 2.20               |
| 336.00              | 0.00               | 0.00             | 0.00               | 338.65              | 5.63               | 1.58             | 4.05               |
| 336.05              | 0.00               | 0.00             | 0.00               | 338.70              | 8.17               | 1.94             | 6.23               |
| 336.10              | 0.00               | 0.00             | 0.00               | 338.75              | 11.07              | 2.34             | 8.73               |
| 336.15              | 0.00               | 0.00             | 0.00               | 338.80              | 14.27              | 2.78             | 11.49              |
| 336.20              | 0.00               | 0.00             | 0.00               | 338.85              | 17.76              | 3.25             | 14.51              |
| 336.25              | 0.00               | 0.00             | 0.00               | 338.90              | 21.31              | 3.55             | 17.76              |
| 336.30              | 0.00               | 0.00             | 0.00               | 338.95              | 24.91              | 3.72             | 21.19              |
| 336.35              | 0.00               | 0.00             | 0.00               | 339.00              | 28.71              | 3.89             | 24.82              |
| 336.40              | 0.00               | 0.00             | 0.00               | 339.05              | 32.68              | 4.05             | 28.63              |
| 336.45              | 0.00               | 0.00             | 0.00               | 339.10              | 36.83              | 4.20             | 32.63              |
| 336.50              | 0.00               | 0.00             | 0.00               | 339.15              | 40.93              | 4.35             | 36.58              |
| 336.55              | 0.00               | 0.00             | 0.00               | 339.20              | 45.15              | 4.49             | 40.66              |
| 336.60              | 0.00               | 0.00             | 0.00               | 339.25              | 49.47              | 4.63             | 44.84              |
| 336.65              | 0.00               | 0.00             | 0.00               | 339.30              | 53.88              | 4.76             | 49.11              |
| 336.70              | 0.00               | 0.00             | 0.00               | 339.35              | 58.63              | 4.89             | 53.74              |
| 336.75              | 0.00               | 0.00             | 0.00               | 339.40              | 63.51              | 5.02             | 58.49              |
| 336.80              | 0.00               | 0.00             | 0.00               | 339.45              | 68.52              | 5.14             | 63.38              |
| 336.85              | 0.00               | 0.00             | 0.00               | 339.50              | 73.64              | 5.26             | 68.38              |
| 336.90              | 0.00               | 0.00             | 0.00               | 339.55              | 79.02              | 5.38             | 73.64              |
| 336.95              | 0.00               | 0.00             | 0.00               | 339.60              | 84.53              | 5.49             | 79.04              |
| 337.00              | 0.00               | 0.00             | 0.00               | 339.65              | 90.17              | 5.60             | 84.57              |
| 337.05              | 0.01               | 0.01             | 0.00               | 339.70              | 95.94              | 5.71             | 90.23              |
| 337.10              | 0.02               | 0.02             | 0.00               | 339.75              | <b>101.75</b>      | <b>5.82</b>      | <b>95.93</b>       |

**Stage-Area-Storage for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 334.50              | 0                       | 337.15              | 1,652                   |
| 334.55              | 0                       | 337.20              | 1,754                   |
| 334.60              | 1                       | 337.25              | 1,859                   |
| 334.65              | 1                       | 337.30              | 1,966                   |
| 334.70              | 2                       | 337.35              | 2,076                   |
| 334.75              | 3                       | 337.40              | 2,188                   |
| 334.80              | 5                       | 337.45              | 2,303                   |
| 334.85              | 7                       | 337.50              | 2,421                   |
| 334.90              | 10                      | 337.55              | 2,542                   |
| 334.95              | 13                      | 337.60              | 2,665                   |
| 335.00              | 17                      | 337.65              | 2,791                   |
| 335.05              | 23                      | 337.70              | 2,920                   |
| 335.10              | 29                      | 337.75              | 3,052                   |
| 335.15              | 36                      | 337.80              | 3,187                   |
| 335.20              | 44                      | 337.85              | 3,325                   |
| 335.25              | 53                      | 337.90              | 3,466                   |
| 335.30              | 62                      | 337.95              | 3,610                   |
| 335.35              | 72                      | 338.00              | 3,757                   |
| 335.40              | 83                      | 338.05              | 3,907                   |
| 335.45              | 95                      | 338.10              | 4,060                   |
| 335.50              | 107                     | 338.15              | 4,216                   |
| 335.55              | 121                     | 338.20              | 4,375                   |
| 335.60              | 135                     | 338.25              | 4,538                   |
| 335.65              | 150                     | 338.30              | 4,703                   |
| 335.70              | 166                     | 338.35              | 4,872                   |
| 335.75              | 184                     | 338.40              | 5,044                   |
| 335.80              | 202                     | 338.45              | 5,220                   |
| 335.85              | 222                     | 338.50              | 5,399                   |
| 335.90              | 242                     | 338.55              | 5,580                   |
| 335.95              | 264                     | 338.60              | 5,764                   |
| 336.00              | 287                     | 338.65              | 5,951                   |
| 336.05              | 312                     | 338.70              | 6,140                   |
| 336.10              | 338                     | 338.75              | 6,332                   |
| 336.15              | 368                     | 338.80              | 6,527                   |
| 336.20              | 399                     | 338.85              | 6,724                   |
| 336.25              | 434                     | 338.90              | 6,923                   |
| 336.30              | 471                     | 338.95              | 7,126                   |
| 336.35              | 511                     | 339.00              | 7,331                   |
| 336.40              | 554                     | 339.05              | 7,539                   |
| 336.45              | 600                     | 339.10              | 7,749                   |
| 336.50              | 650                     | 339.15              | 7,962                   |
| 336.55              | 703                     | 339.20              | 8,178                   |
| 336.60              | 760                     | 339.25              | 8,397                   |
| 336.65              | 821                     | 339.30              | 8,619                   |
| 336.70              | 885                     | 339.35              | 8,843                   |
| 336.75              | 954                     | 339.40              | 9,070                   |
| 336.80              | 1,026                   | 339.45              | 9,300                   |
| 336.85              | 1,103                   | 339.50              | 9,533                   |
| 336.90              | 1,185                   | 339.55              | 9,769                   |
| 336.95              | 1,271                   | 339.60              | 10,008                  |
| 337.00              | 1,362                   | 339.65              | 10,250                  |
| 337.05              | 1,456                   | 339.70              | 10,494                  |
| 337.10              | 1,553                   | 339.75              | <b>10,742</b>           |

**Summary for Pond 5P: Proposed Infiltration Basin**

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=5)

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.71" for 1-yr event  
 Inflow = 5.95 cfs @ 12.16 hrs, Volume= 0.451 af  
 Outflow = 4.35 cfs @ 12.28 hrs, Volume= 0.451 af, Atten= 27%, Lag= 7.6 min  
 Discarded = 4.35 cfs @ 12.28 hrs, Volume= 0.451 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Primary area = Inflow area x 0.000  
 Peak Elev= 326.44' @ 12.28 hrs Surf.Area= 1,881 sf Storage= 1,444 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 1.6 min ( 863.4 - 861.7 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 330.50' | 10,455 cf     | <b>Upper Pond (Irregular)</b> Listed below (Recalc) -Impervious |
| #2     | 325.50' | 11,031 cf     | <b>Micropool (Irregular)</b> Listed below (Recalc)              |
| #3     | 325.50' | 6,296 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)                |
|        |         | 27,781 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 330.50           | 6,557             | 358.9         | 0                      | 0                      | 6,557            |
| 331.00           | 7,966             | 544.5         | 3,625                  | 3,625                  | 19,902           |
| 331.75           | 10,297            | 768.6         | 6,830                  | 10,455                 | 43,324           |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 906               | 129.8         | 0                      | 0                      | 906              |
| 326.00           | 1,122             | 143.2         | 506                    | 506                    | 1,205            |
| 327.00           | 1,594             | 165.7         | 1,351                  | 1,857                  | 1,779            |
| 328.00           | 2,135             | 187.0         | 1,858                  | 3,715                  | 2,403            |
| 329.00           | 2,732             | 208.0         | 2,427                  | 6,142                  | 3,092            |
| 330.00           | 3,382             | 226.7         | 3,051                  | 9,194                  | 3,774            |
| 330.50           | 3,974             | 250.8         | 1,837                  | 11,031                 | 4,697            |

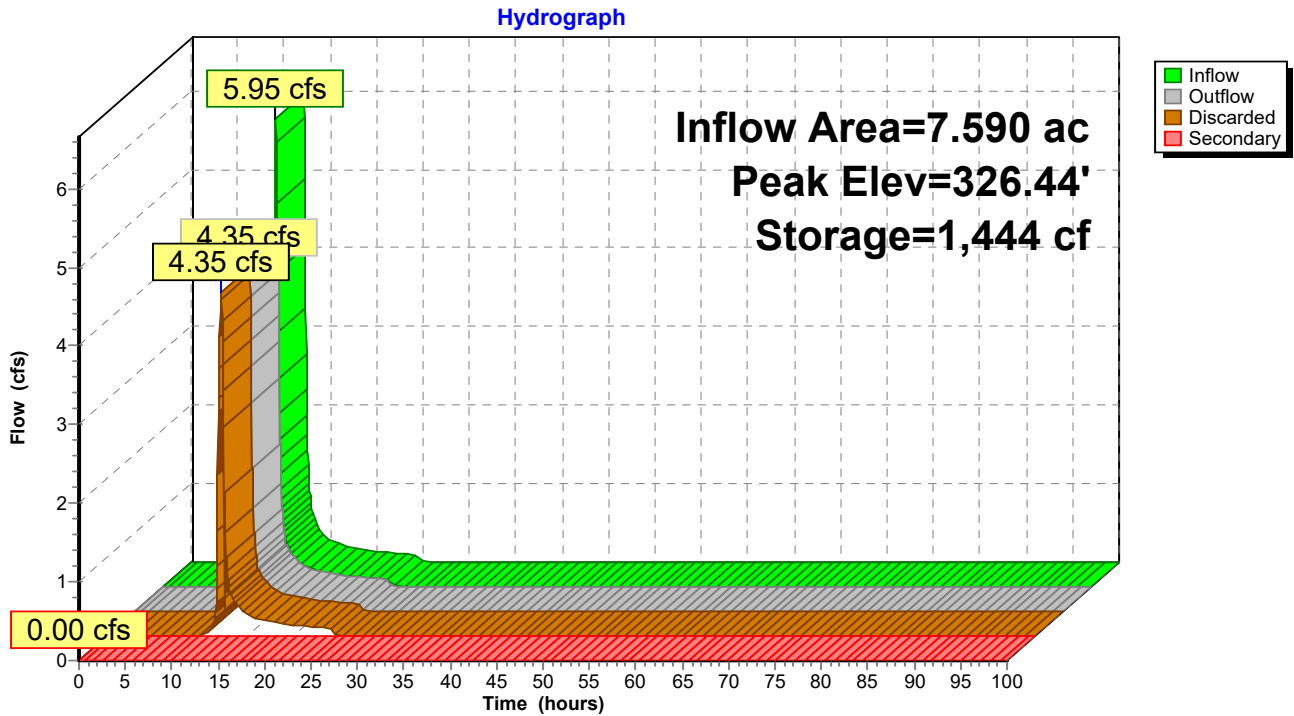
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 295               | 81.6          | 0                      | 0                      | 295              |
| 326.00           | 426               | 92.6          | 179                    | 179                    | 454              |
| 327.00           | 755               | 119.2         | 583                    | 762                    | 914              |
| 328.00           | 1,185             | 151.4         | 962                    | 1,724                  | 1,621            |
| 329.00           | 1,678             | 173.2         | 1,424                  | 3,148                  | 2,207            |
| 330.00           | 2,227             | 192.4         | 1,946                  | 5,094                  | 2,794            |
| 330.50           | 2,583             | 209.3         | 1,201                  | 6,296                  | 3,344            |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 331.25' | <b>10.0' long x 13.2' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.61 2.65 2.70 2.66 2.65 2.66 2.65 2.63 |
| #2     | Discarded | 325.50' | <b>100.000 in/hr Exfiltration over Horizontal area</b> Phase-In= 0.03'   |

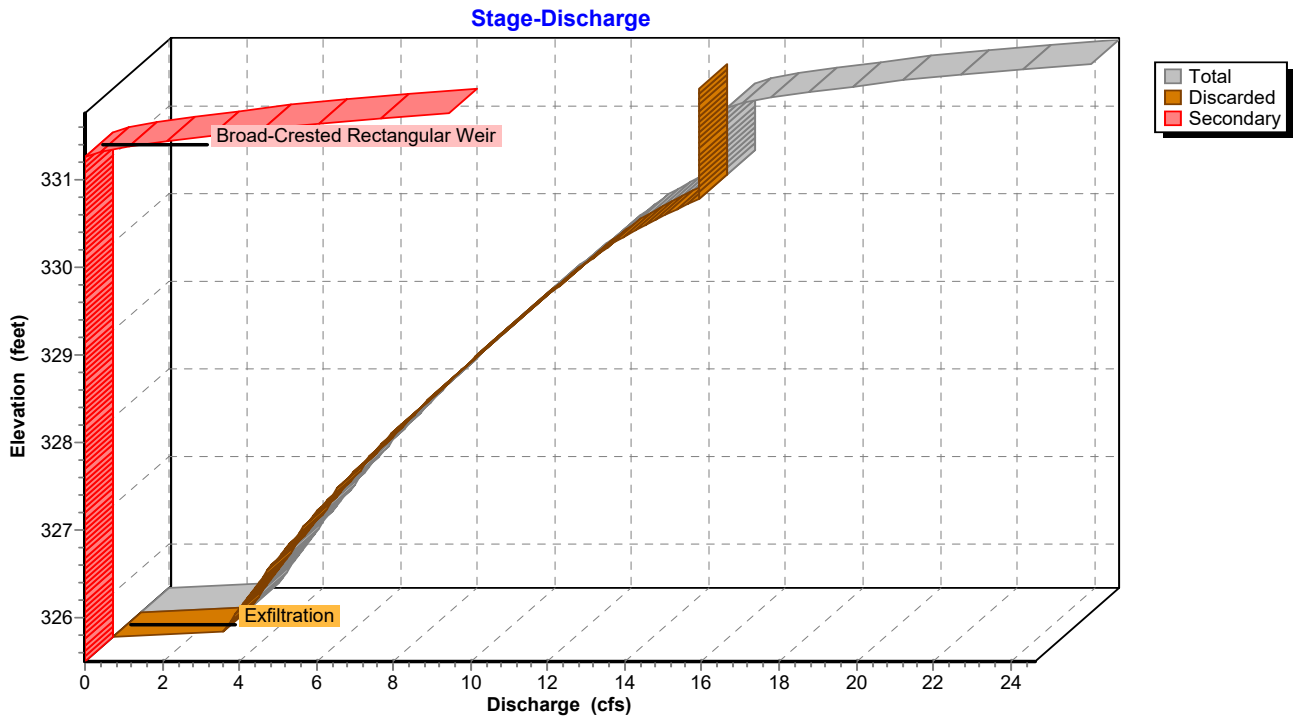
**Discarded OutFlow** Max=4.34 cfs @ 12.28 hrs HW=326.43' (Free Discharge)  
 ↳ **2=Exfiltration** (Exfiltration Controls 4.34 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=325.50' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

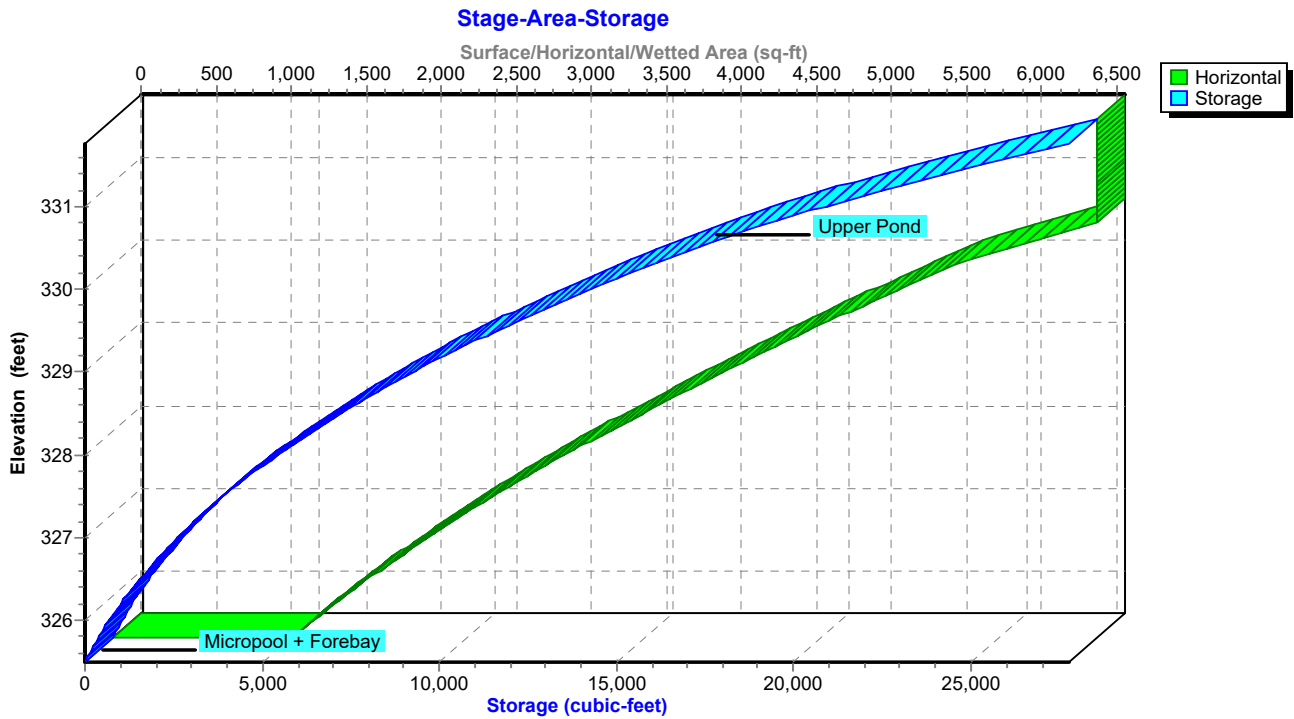
**Pond 5P: Proposed Infiltration Basin**



### Pond 5P: Proposed Infiltration Basin



### Pond 5P: Proposed Infiltration Basin



**Hydrograph for Pond 5P: Proposed Infiltration Basin**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|-----------------|-----------------|
| 0.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | <b>0.00</b>     |
| 2.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 5.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 7.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>325.50</b>    | <b>0.00</b>   | <b>0.00</b>     | 0.00            |
| 12.50        | <b>1.87</b>  | <b>558</b>           | <b>325.92</b>    | <b>3.44</b>   | <b>3.44</b>     | 0.00            |
| 15.00        | 0.29         | 4                    | 325.50           | 0.29          | 0.29            | 0.00            |
| 17.50        | 0.19         | 2                    | 325.50           | 0.19          | 0.19            | 0.00            |
| 20.00        | 0.14         | 2                    | 325.50           | 0.14          | 0.14            | 0.00            |
| 22.50        | 0.12         | 2                    | 325.50           | 0.12          | 0.12            | 0.00            |
| 25.00        | 0.01         | 0                    | 325.50           | 0.01          | 0.01            | 0.00            |
| 27.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 30.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 32.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 35.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 37.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 40.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 42.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 45.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 47.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 50.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 52.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 55.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 57.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 60.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 62.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 65.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 67.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 70.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 72.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 75.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 77.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 80.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 82.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 85.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 87.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 90.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 92.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 95.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 97.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 100.00       | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |

**Stage-Discharge for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| 325.50              | 0.00               | 0.00               | 0.00               | 330.80              | 15.18              | 15.18              | 0.00               |
| 325.60              | 2.93               | 2.93               | 0.00               | 330.90              | 15.18              | 15.18              | 0.00               |
| 325.70              | 3.09               | 3.09               | 0.00               | 331.00              | 15.18              | 15.18              | 0.00               |
| 325.80              | 3.25               | 3.25               | 0.00               | 331.10              | 15.18              | 15.18              | 0.00               |
| 325.90              | 3.41               | 3.41               | 0.00               | 331.20              | 15.18              | 15.18              | 0.00               |
| 326.00              | 3.58               | 3.58               | 0.00               | 331.30              | 15.47              | 15.18              | 0.29               |
| 326.10              | 3.75               | 3.75               | 0.00               | 331.40              | 16.69              | 15.18              | 1.52               |
| 326.20              | 3.92               | 3.92               | 0.00               | 331.50              | 18.45              | 15.18              | 3.27               |
| 326.30              | 4.10               | 4.10               | 0.00               | 331.60              | 20.64              | 15.18              | 5.47               |
| 326.40              | 4.28               | 4.28               | 0.00               | 331.70              | <b>23.22</b>       | 15.18              | <b>8.04</b>        |
| 326.50              | 4.46               | 4.46               | 0.00               |                     |                    |                    |                    |
| 326.60              | 4.65               | 4.65               | 0.00               |                     |                    |                    |                    |
| 326.70              | 4.84               | 4.84               | 0.00               |                     |                    |                    |                    |
| 326.80              | 5.03               | 5.03               | 0.00               |                     |                    |                    |                    |
| 326.90              | 5.23               | 5.23               | 0.00               |                     |                    |                    |                    |
| 327.00              | 5.44               | 5.44               | 0.00               |                     |                    |                    |                    |
| 327.10              | 5.64               | 5.64               | 0.00               |                     |                    |                    |                    |
| 327.20              | 5.85               | 5.85               | 0.00               |                     |                    |                    |                    |
| 327.30              | 6.07               | 6.07               | 0.00               |                     |                    |                    |                    |
| 327.40              | 6.29               | 6.29               | 0.00               |                     |                    |                    |                    |
| 327.50              | 6.51               | 6.51               | 0.00               |                     |                    |                    |                    |
| 327.60              | 6.74               | 6.74               | 0.00               |                     |                    |                    |                    |
| 327.70              | 6.97               | 6.97               | 0.00               |                     |                    |                    |                    |
| 327.80              | 7.20               | 7.20               | 0.00               |                     |                    |                    |                    |
| 327.90              | 7.44               | 7.44               | 0.00               |                     |                    |                    |                    |
| 328.00              | 7.69               | 7.69               | 0.00               |                     |                    |                    |                    |
| 328.10              | 7.92               | 7.92               | 0.00               |                     |                    |                    |                    |
| 328.20              | 8.16               | 8.16               | 0.00               |                     |                    |                    |                    |
| 328.30              | 8.40               | 8.40               | 0.00               |                     |                    |                    |                    |
| 328.40              | 8.65               | 8.65               | 0.00               |                     |                    |                    |                    |
| 328.50              | 8.90               | 8.90               | 0.00               |                     |                    |                    |                    |
| 328.60              | 9.15               | 9.15               | 0.00               |                     |                    |                    |                    |
| 328.70              | 9.41               | 9.41               | 0.00               |                     |                    |                    |                    |
| 328.80              | 9.67               | 9.67               | 0.00               |                     |                    |                    |                    |
| 328.90              | 9.94               | 9.94               | 0.00               |                     |                    |                    |                    |
| 329.00              | 10.21              | 10.21              | 0.00               |                     |                    |                    |                    |
| 329.10              | 10.47              | 10.47              | 0.00               |                     |                    |                    |                    |
| 329.20              | 10.74              | 10.74              | 0.00               |                     |                    |                    |                    |
| 329.30              | 11.01              | 11.01              | 0.00               |                     |                    |                    |                    |
| 329.40              | 11.28              | 11.28              | 0.00               |                     |                    |                    |                    |
| 329.50              | 11.55              | 11.55              | 0.00               |                     |                    |                    |                    |
| 329.60              | 11.83              | 11.83              | 0.00               |                     |                    |                    |                    |
| 329.70              | 12.12              | 12.12              | 0.00               |                     |                    |                    |                    |
| 329.80              | 12.40              | 12.40              | 0.00               |                     |                    |                    |                    |
| 329.90              | 12.69              | 12.69              | 0.00               |                     |                    |                    |                    |
| 330.00              | 12.98              | 12.98              | 0.00               |                     |                    |                    |                    |
| 330.10              | 13.41              | 13.41              | 0.00               |                     |                    |                    |                    |
| 330.20              | 13.84              | 13.84              | 0.00               |                     |                    |                    |                    |
| 330.30              | 14.28              | 14.28              | 0.00               |                     |                    |                    |                    |
| 330.40              | 14.73              | 14.73              | 0.00               |                     |                    |                    |                    |
| 330.50              | 15.18              | <b>15.18</b>       | 0.00               |                     |                    |                    |                    |
| 330.60              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |
| 330.70              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |

**Stage-Area-Storage for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 325.50              | 1,201                 | 0                       | 330.80              | 6,557                 | 19,417                  |
| 325.60              | 1,267                 | 123                     | 330.90              | 6,557                 | 20,170                  |
| 325.70              | 1,334                 | 253                     | 331.00              | 6,557                 | 20,951                  |
| 325.80              | 1,404                 | 390                     | 331.10              | 6,557                 | 21,763                  |
| 325.90              | 1,475                 | 534                     | 331.20              | 6,557                 | 22,604                  |
| 326.00              | 1,548                 | 685                     | 331.30              | 6,557                 | 23,475                  |
| 326.10              | 1,620                 | 844                     | 331.40              | 6,557                 | 24,376                  |
| 326.20              | 1,694                 | 1,009                   | 331.50              | 6,557                 | 25,309                  |
| 326.30              | 1,770                 | 1,183                   | 331.60              | 6,557                 | 26,274                  |
| 326.40              | 1,847                 | 1,363                   | 331.70              | 6,557                 | <b>27,271</b>           |
| 326.50              | 1,926                 | 1,552                   |                     |                       |                         |
| 326.60              | 2,007                 | 1,749                   |                     |                       |                         |
| 326.70              | 2,090                 | 1,954                   |                     |                       |                         |
| 326.80              | 2,175                 | 2,167                   |                     |                       |                         |
| 326.90              | 2,261                 | 2,389                   |                     |                       |                         |
| 327.00              | 2,349                 | 2,619                   |                     |                       |                         |
| 327.10              | 2,438                 | 2,858                   |                     |                       |                         |
| 327.20              | 2,529                 | 3,107                   |                     |                       |                         |
| 327.30              | 2,622                 | 3,364                   |                     |                       |                         |
| 327.40              | 2,716                 | 3,631                   |                     |                       |                         |
| 327.50              | 2,813                 | 3,908                   |                     |                       |                         |
| 327.60              | 2,911                 | 4,194                   |                     |                       |                         |
| 327.70              | 3,010                 | 4,490                   |                     |                       |                         |
| 327.80              | 3,112                 | 4,796                   |                     |                       |                         |
| 327.90              | 3,215                 | 5,112                   |                     |                       |                         |
| 328.00              | 3,320                 | 5,439                   |                     |                       |                         |
| 328.10              | 3,422                 | 5,776                   |                     |                       |                         |
| 328.20              | 3,525                 | 6,123                   |                     |                       |                         |
| 328.30              | 3,630                 | 6,481                   |                     |                       |                         |
| 328.40              | 3,737                 | 6,850                   |                     |                       |                         |
| 328.50              | 3,845                 | 7,229                   |                     |                       |                         |
| 328.60              | 3,955                 | 7,619                   |                     |                       |                         |
| 328.70              | 4,066                 | 8,020                   |                     |                       |                         |
| 328.80              | 4,179                 | 8,432                   |                     |                       |                         |
| 328.90              | 4,294                 | 8,856                   |                     |                       |                         |
| 329.00              | 4,410                 | 9,291                   |                     |                       |                         |
| 329.10              | 4,523                 | 9,737                   |                     |                       |                         |
| 329.20              | 4,638                 | 10,195                  |                     |                       |                         |
| 329.30              | 4,754                 | 10,665                  |                     |                       |                         |
| 329.40              | 4,872                 | 11,146                  |                     |                       |                         |
| 329.50              | 4,991                 | 11,639                  |                     |                       |                         |
| 329.60              | 5,112                 | 12,145                  |                     |                       |                         |
| 329.70              | 5,234                 | 12,662                  |                     |                       |                         |
| 329.80              | 5,357                 | 13,191                  |                     |                       |                         |
| 329.90              | 5,482                 | 13,733                  |                     |                       |                         |
| 330.00              | 5,609                 | 14,288                  |                     |                       |                         |
| 330.10              | 5,793                 | 14,858                  |                     |                       |                         |
| 330.20              | 5,979                 | 15,447                  |                     |                       |                         |
| 330.30              | 6,169                 | 16,054                  |                     |                       |                         |
| 330.40              | 6,361                 | 16,681                  |                     |                       |                         |
| 330.50              | <b>6,557</b>          | 17,326                  |                     |                       |                         |
| 330.60              | 6,557                 | 17,996                  |                     |                       |                         |
| 330.70              | 6,557                 | 18,692                  |                     |                       |                         |



**Summary for Pond 6P: Proposed Stormwater Pond**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 0.98" for 1-yr event  
 Inflow = 1.00 cfs @ 12.14 hrs, Volume= 0.106 af  
 Outflow = 0.09 cfs @ 14.25 hrs, Volume= 0.105 af, Atten= 91%, Lag= 127.1 min  
 Primary = 0.09 cfs @ 14.25 hrs, Volume= 0.105 af  
 Routed to Reach R10 : 10" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP5 : Analysis Point 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 329.33' Surf.Area= 2,011 sf Storage= 1,574 cf  
 Peak Elev= 330.28' @ 14.25 hrs Surf.Area= 3,369 sf Storage= 4,143 cf (2,569 cf above start)

Plug-Flow detention time= 1,446.4 min calculated for 0.069 af (65% of inflow)  
 Center-of-Mass det. time= 884.4 min ( 1,764.9 - 880.5 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 331.75' | 6,028 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 327.75' | 8,305 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 327.50' | 2,269 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 16,603 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 331.75           | 5,523             | 306.7         | 0                      | 0                      | 5,523            |
| 332.00           | 5,830             | 312.4         | 1,419                  | 1,419                  | 5,814            |
| 332.75           | 6,467             | 324.9         | 4,609                  | 6,028                  | 6,492            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.75           | 200               | 93.4          | 0                      | 0                      | 200              |
| 328.00           | 271               | 98.0          | 59                     | 59                     | 274              |
| 329.00           | 1,297             | 155.9         | 720                    | 779                    | 1,451            |
| 330.00           | 2,476             | 197.8         | 1,855                  | 2,634                  | 2,643            |
| 331.00           | 3,318             | 222.9         | 2,887                  | 5,521                  | 3,510            |
| 331.75           | 4,121             | 250.8         | 2,784                  | 8,305                  | 4,576            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.50           | 29                | 23.3          | 0                      | 0                      | 29               |
| 328.00           | 88                | 35.9          | 28                     | 28                     | 90               |
| 329.00           | 282               | 61.1          | 176                    | 204                    | 291              |
| 330.00           | 574               | 85.9          | 419                    | 623                    | 590              |
| 331.00           | 968               | 111.0         | 762                    | 1,386                  | 995              |
| 331.75           | 1,402             | 143.0         | 884                    | 2,269                  | 1,649            |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.63' | <b>10.0' long x 7.8' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.42 2.53 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.67 2.68 2.71 2.75 |
| #2     | Primary   | 331.61' | <b>10.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads   |
| #3     | Primary   | 330.12' | <b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |
| #4     | Primary   | 329.33' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

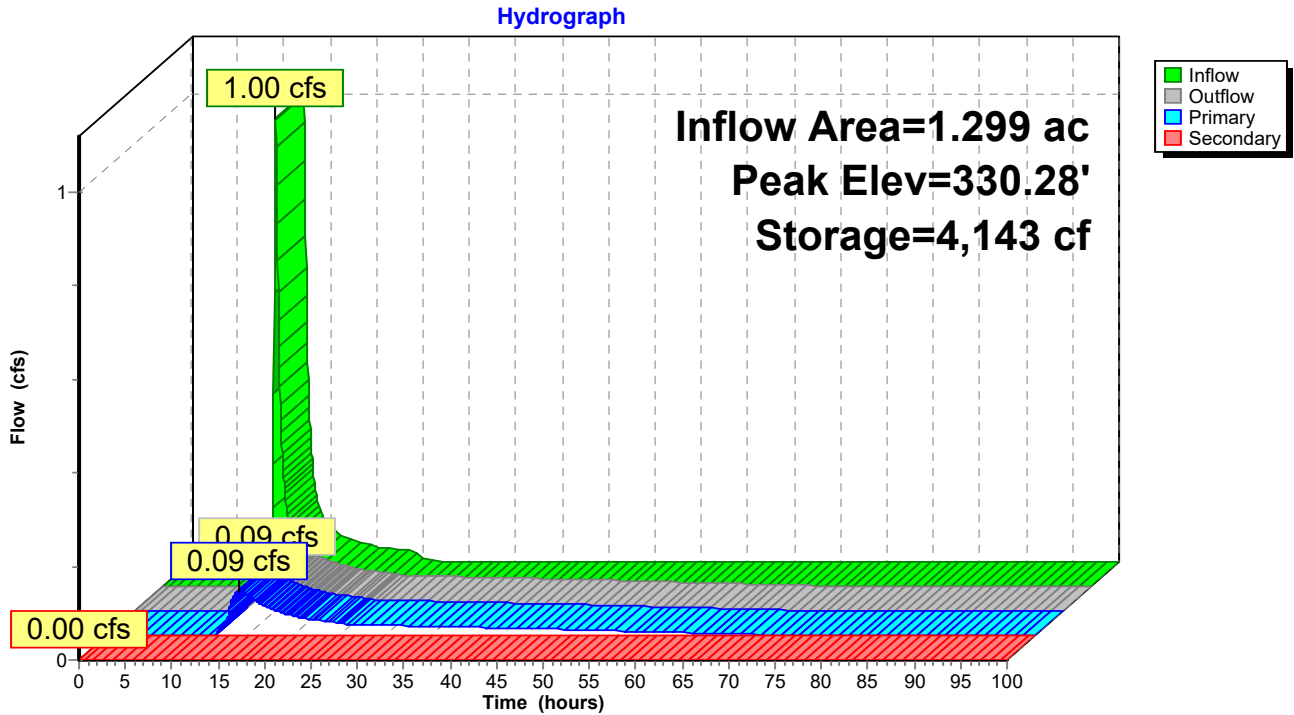
**Primary OutFlow** Max=0.09 cfs @ 14.25 hrs HW=330.28' TW=329.44' (Dynamic Tailwater)

- ↳ 2=Orifice/Grate ( Controls 0.00 cfs)
- ↳ 3=Orifice/Grate (Orifice Controls 0.07 cfs @ 1.35 fps)
- ↳ 4=Orifice/Grate (Orifice Controls 0.02 cfs @ 4.41 fps)

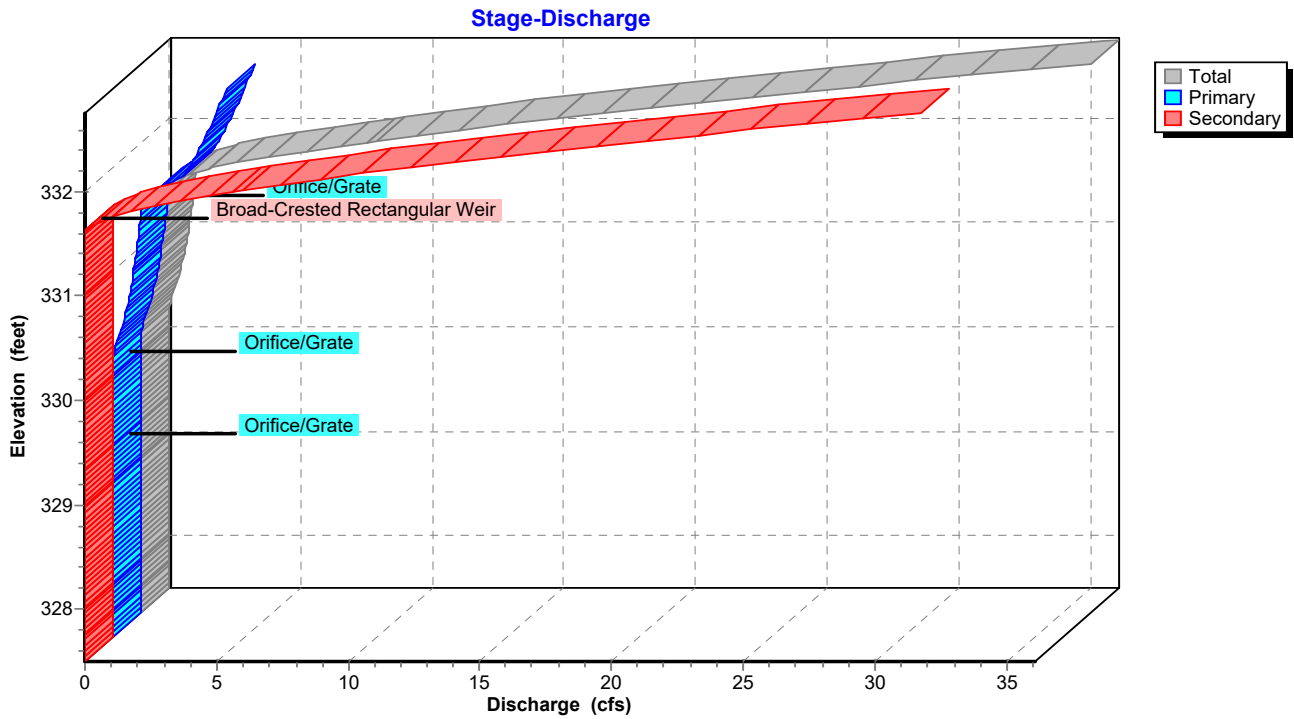
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=329.33' TW=0.00' (Dynamic Tailwater)

- ↳ 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

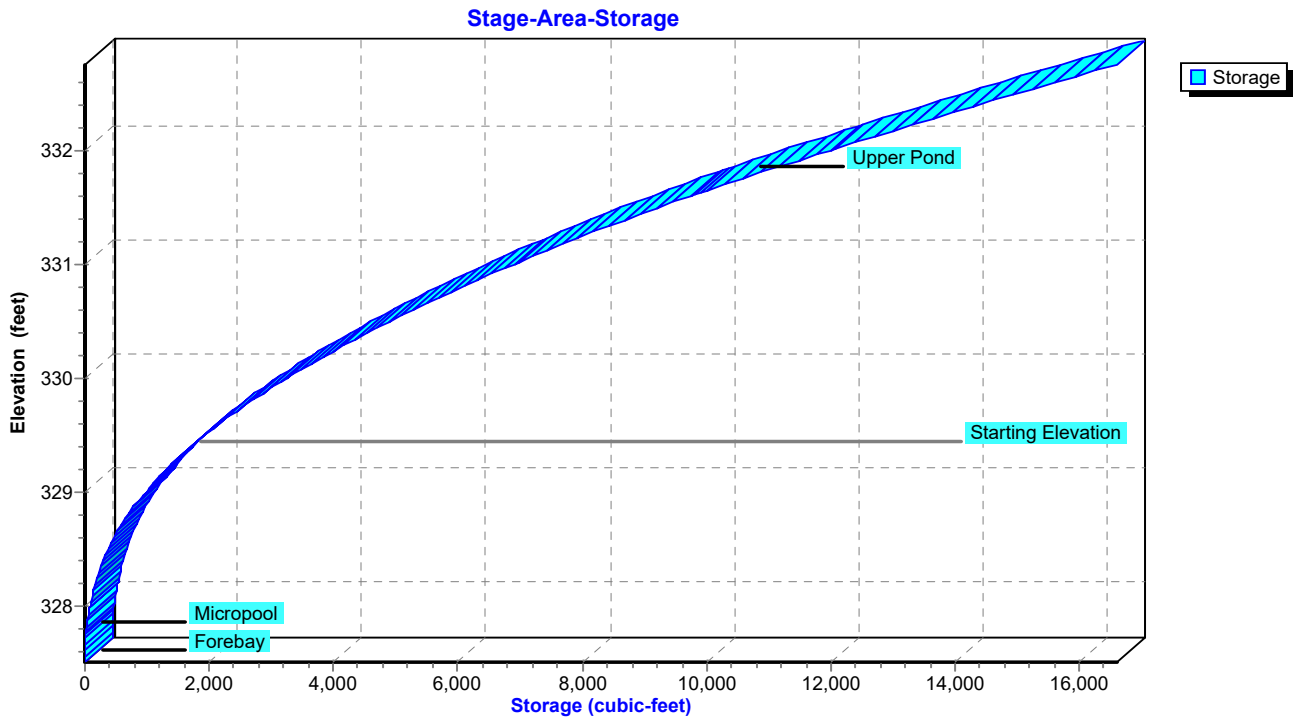
**Pond 6P: Proposed Stormwater Pond**



### Pond 6P: Proposed Stormwater Pond



### Pond 6P: Proposed Stormwater Pond



**Hydrograph for Pond 6P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.00</b>  | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>0.51</b>  | <b>3,268</b>         | <b>330.00</b>    | <b>0.02</b>   | <b>0.02</b>   | 0.00            |
| 15.00        | 0.07         | <b>4,118</b>         | <b>330.27</b>    | <b>0.09</b>   | <b>0.09</b>   | 0.00            |
| 17.50        | 0.05         | 3,981                | 330.23           | 0.06          | 0.06          | 0.00            |
| 20.00        | 0.03         | 3,886                | 330.20           | 0.04          | 0.04          | 0.00            |
| 22.50        | 0.03         | 3,813                | 330.18           | 0.03          | 0.03          | 0.00            |
| 25.00        | 0.01         | 3,742                | 330.15           | 0.03          | 0.03          | 0.00            |
| 27.50        | 0.00         | 3,566                | 330.10           | 0.02          | 0.02          | 0.00            |
| 30.00        | 0.00         | 3,379                | 330.04           | 0.02          | 0.02          | 0.00            |
| 32.50        | 0.00         | 3,196                | 329.98           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,020                | 329.92           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 2,851                | 329.86           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,692                | 329.80           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,543                | 329.75           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,404                | 329.70           | 0.01          | 0.01          | 0.00            |
| 47.50        | 0.00         | 2,276                | 329.64           | 0.01          | 0.01          | 0.00            |
| 50.00        | 0.00         | 2,159                | 329.60           | 0.01          | 0.01          | 0.00            |
| 52.50        | 0.00         | 2,053                | 329.55           | 0.01          | 0.01          | 0.00            |
| 55.00        | 0.00         | 1,959                | 329.51           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,877                | 329.47           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,808                | 329.44           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,752                | 329.42           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,708                | 329.40           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,679                | 329.38           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,658                | 329.37           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,644                | 329.36           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,633                | 329.36           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,625                | 329.36           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,619                | 329.35           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,614                | 329.35           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,610                | 329.35           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,607                | 329.35           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,604                | 329.35           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,602                | 329.34           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,600                | 329.34           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,598                | 329.34           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,597                | 329.34           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 327.50              | 0.00               | 0.00             | 0.00               | 330.15              | 0.03               | 0.03             | 0.00               |
| 327.55              | 0.00               | 0.00             | 0.00               | 330.20              | 0.04               | 0.04             | 0.00               |
| 327.60              | 0.00               | 0.00             | 0.00               | 330.25              | 0.07               | 0.07             | 0.00               |
| 327.65              | 0.00               | 0.00             | 0.00               | 330.30              | 0.12               | 0.12             | 0.00               |
| 327.70              | 0.00               | 0.00             | 0.00               | 330.35              | 0.17               | 0.17             | 0.00               |
| 327.75              | 0.00               | 0.00             | 0.00               | 330.40              | 0.23               | 0.23             | 0.00               |
| 327.80              | 0.00               | 0.00             | 0.00               | 330.45              | 0.30               | 0.30             | 0.00               |
| 327.85              | 0.00               | 0.00             | 0.00               | 330.50              | 0.36               | 0.36             | 0.00               |
| 327.90              | 0.00               | 0.00             | 0.00               | 330.55              | 0.43               | 0.43             | 0.00               |
| 327.95              | 0.00               | 0.00             | 0.00               | 330.60              | 0.49               | 0.49             | 0.00               |
| 328.00              | 0.00               | 0.00             | 0.00               | 330.65              | 0.53               | 0.53             | 0.00               |
| 328.05              | 0.00               | 0.00             | 0.00               | 330.70              | 0.57               | 0.57             | 0.00               |
| 328.10              | 0.00               | 0.00             | 0.00               | 330.75              | 0.61               | 0.61             | 0.00               |
| 328.15              | 0.00               | 0.00             | 0.00               | 330.80              | 0.65               | 0.65             | 0.00               |
| 328.20              | 0.00               | 0.00             | 0.00               | 330.85              | 0.69               | 0.69             | 0.00               |
| 328.25              | 0.00               | 0.00             | 0.00               | 330.90              | 0.72               | 0.72             | 0.00               |
| 328.30              | 0.00               | 0.00             | 0.00               | 330.95              | 0.75               | 0.75             | 0.00               |
| 328.35              | 0.00               | 0.00             | 0.00               | 331.00              | 0.78               | 0.78             | 0.00               |
| 328.40              | 0.00               | 0.00             | 0.00               | 331.05              | 0.81               | 0.81             | 0.00               |
| 328.45              | 0.00               | 0.00             | 0.00               | 331.10              | 0.84               | 0.84             | 0.00               |
| 328.50              | 0.00               | 0.00             | 0.00               | 331.15              | 0.87               | 0.87             | 0.00               |
| 328.55              | 0.00               | 0.00             | 0.00               | 331.20              | 0.90               | 0.90             | 0.00               |
| 328.60              | 0.00               | 0.00             | 0.00               | 331.25              | 0.92               | 0.92             | 0.00               |
| 328.65              | 0.00               | 0.00             | 0.00               | 331.30              | 0.95               | 0.95             | 0.00               |
| 328.70              | 0.00               | 0.00             | 0.00               | 331.35              | 0.97               | 0.97             | 0.00               |
| 328.75              | 0.00               | 0.00             | 0.00               | 331.40              | 1.00               | 1.00             | 0.00               |
| 328.80              | 0.00               | 0.00             | 0.00               | 331.45              | 1.02               | 1.02             | 0.00               |
| 328.85              | 0.00               | 0.00             | 0.00               | 331.50              | 1.04               | 1.04             | 0.00               |
| 328.90              | 0.00               | 0.00             | 0.00               | 331.55              | 1.07               | 1.07             | 0.00               |
| 328.95              | 0.00               | 0.00             | 0.00               | 331.60              | 1.09               | 1.09             | 0.00               |
| 329.00              | 0.00               | 0.00             | 0.00               | 331.65              | 1.25               | 1.18             | 0.07               |
| 329.05              | 0.00               | 0.00             | 0.00               | 331.70              | 1.81               | 1.36             | 0.45               |
| 329.10              | 0.00               | 0.00             | 0.00               | 331.75              | 2.61               | 1.60             | 1.01               |
| 329.15              | 0.00               | 0.00             | 0.00               | 331.80              | 3.58               | 1.88             | 1.70               |
| 329.20              | 0.00               | 0.00             | 0.00               | 331.85              | 4.71               | 2.20             | 2.51               |
| 329.25              | 0.00               | 0.00             | 0.00               | 331.90              | 6.00               | 2.55             | 3.45               |
| 329.30              | 0.00               | 0.00             | 0.00               | 331.95              | 7.26               | 2.76             | 4.50               |
| 329.35              | 0.00               | 0.00             | 0.00               | 332.00              | 8.55               | 2.89             | 5.66               |
| 329.40              | 0.00               | 0.00             | 0.00               | 332.05              | 9.94               | 3.01             | 6.93               |
| 329.45              | 0.01               | 0.01             | 0.00               | 332.10              | 11.47              | 3.13             | 8.34               |
| 329.50              | 0.01               | 0.01             | 0.00               | 332.15              | 13.10              | 3.23             | 9.87               |
| 329.55              | 0.01               | 0.01             | 0.00               | 332.20              | 14.85              | 3.34             | 11.51              |
| 329.60              | 0.01               | 0.01             | 0.00               | 332.25              | 16.62              | 3.44             | 13.18              |
| 329.65              | 0.01               | 0.01             | 0.00               | 332.30              | 18.33              | 3.54             | 14.79              |
| 329.70              | 0.02               | 0.02             | 0.00               | 332.35              | 20.09              | 3.63             | 16.46              |
| 329.75              | 0.02               | 0.02             | 0.00               | 332.40              | 21.91              | 3.73             | 18.19              |
| 329.80              | 0.02               | 0.02             | 0.00               | 332.45              | 23.78              | 3.82             | 19.97              |
| 329.85              | 0.02               | 0.02             | 0.00               | 332.50              | 25.70              | 3.90             | 21.80              |
| 329.90              | 0.02               | 0.02             | 0.00               | 332.55              | 27.67              | 3.99             | 23.68              |
| 329.95              | 0.02               | 0.02             | 0.00               | 332.60              | 29.69              | 4.07             | 25.62              |
| 330.00              | 0.02               | 0.02             | 0.00               | 332.65              | 31.76              | 4.15             | 27.61              |
| 330.05              | 0.02               | 0.02             | 0.00               | 332.70              | 33.90              | 4.23             | 29.66              |
| 330.10              | 0.02               | 0.02             | 0.00               | 332.75              | <b>36.08</b>       | <b>4.31</b>      | <b>31.77</b>       |

**Stage-Area-Storage for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 327.50              | 0                       | 330.15              | 3,727                   |
| 327.55              | 2                       | 330.20              | 3,890                   |
| 327.60              | 3                       | 330.25              | 4,055                   |
| 327.65              | 5                       | 330.30              | 4,224                   |
| 327.70              | 8                       | 330.35              | 4,395                   |
| 327.75              | 10                      | 330.40              | 4,569                   |
| 327.80              | 23                      | 330.45              | 4,747                   |
| 327.85              | 38                      | 330.50              | 4,927                   |
| 327.90              | 53                      | 330.55              | 5,111                   |
| 327.95              | 69                      | 330.60              | 5,297                   |
| 328.00              | 87                      | 330.65              | 5,487                   |
| 328.05              | 106                     | 330.70              | 5,680                   |
| 328.10              | 127                     | 330.75              | 5,876                   |
| 328.15              | 150                     | 330.80              | 6,076                   |
| 328.20              | 175                     | 330.85              | 6,279                   |
| 328.25              | 203                     | 330.90              | 6,484                   |
| 328.30              | 233                     | 330.95              | 6,694                   |
| 328.35              | 266                     | 331.00              | 6,906                   |
| 328.40              | 302                     | 331.05              | 7,123                   |
| 328.45              | 341                     | 331.10              | 7,343                   |
| 328.50              | 382                     | 331.15              | 7,567                   |
| 328.55              | 427                     | 331.20              | 7,795                   |
| 328.60              | 474                     | 331.25              | 8,027                   |
| 328.65              | 525                     | 331.30              | 8,263                   |
| 328.70              | 580                     | 331.35              | 8,503                   |
| 328.75              | 637                     | 331.40              | 8,747                   |
| 328.80              | 699                     | 331.45              | 8,995                   |
| 328.85              | 764                     | 331.50              | 9,248                   |
| 328.90              | 833                     | 331.55              | 9,505                   |
| 328.95              | 906                     | 331.60              | 9,765                   |
| 329.00              | 983                     | 331.65              | 10,031                  |
| 329.05              | 1,063                   | 331.70              | 10,300                  |
| 329.10              | 1,147                   | 331.75              | 10,574                  |
| 329.15              | 1,234                   | 331.80              | 10,852                  |
| 329.20              | 1,324                   | 331.85              | 11,133                  |
| 329.25              | 1,417                   | 331.90              | 11,416                  |
| 329.30              | 1,514                   | 331.95              | 11,703                  |
| 329.35              | 1,614                   | 332.00              | 11,993                  |
| 329.40              | 1,718                   | 332.05              | 12,286                  |
| 329.45              | 1,825                   | 332.10              | 12,580                  |
| 329.50              | 1,936                   | 332.15              | 12,877                  |
| 329.55              | 2,051                   | 332.20              | 13,176                  |
| 329.60              | 2,169                   | 332.25              | 13,477                  |
| 329.65              | 2,291                   | 332.30              | 13,780                  |
| 329.70              | 2,417                   | 332.35              | 14,085                  |
| 329.75              | 2,547                   | 332.40              | 14,392                  |
| 329.80              | 2,681                   | 332.45              | 14,701                  |
| 329.85              | 2,819                   | 332.50              | 15,013                  |
| 329.90              | 2,961                   | 332.55              | 15,327                  |
| 329.95              | 3,107                   | 332.60              | 15,642                  |
| 330.00              | 3,257                   | 332.65              | 15,960                  |
| 330.05              | 3,411                   | 332.70              | 16,280                  |
| 330.10              | 3,568                   | 332.75              | <b>16,603</b>           |

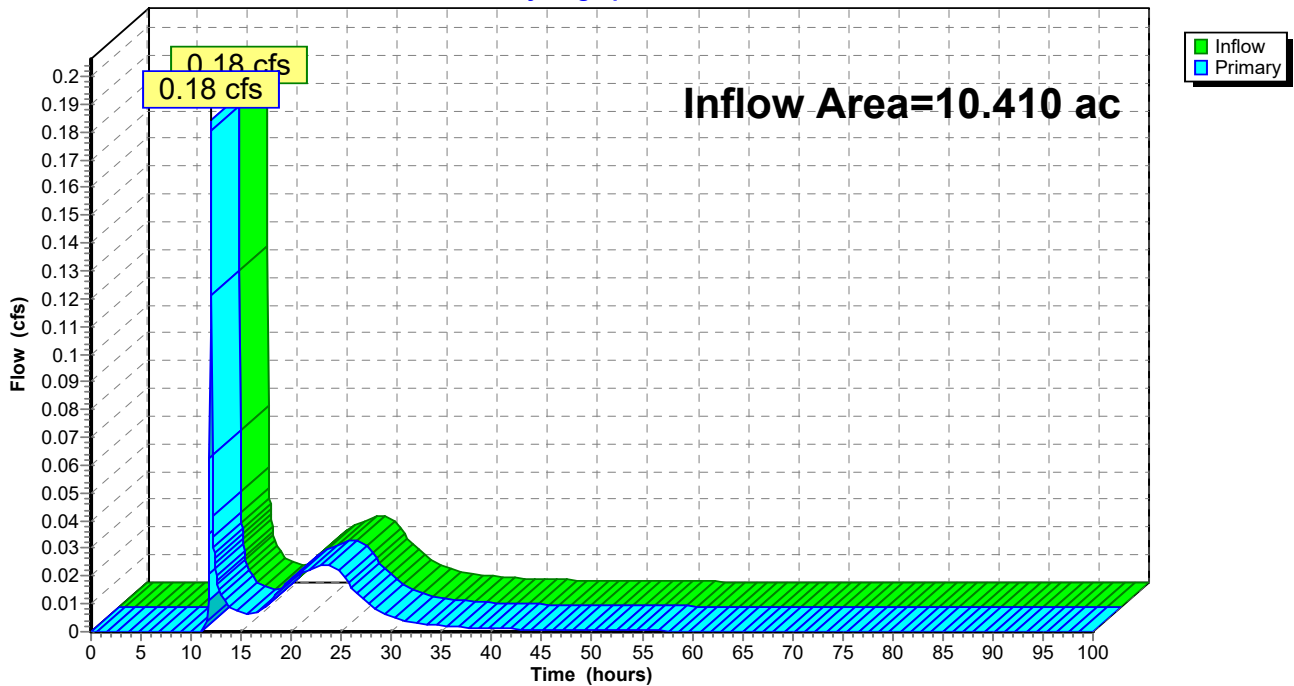
### Summary for Link AP3: Analysis Point 3

Inflow Area = 10.410 ac, 13.37% Impervious, Inflow Depth > 0.03" for 1-yr event  
Inflow = 0.18 cfs @ 11.98 hrs, Volume= 0.028 af  
Primary = 0.18 cfs @ 11.98 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3

Hydrograph



**Hydrograph for Link AP3: Analysis Point 3**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.18</b>  | 0.00             | <b>0.18</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.01         | 0.00             | 0.01          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.01         | 0.00             | 0.01          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.01         | 0.00             | 0.01          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.01         | 0.00             | 0.01          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.01         | 0.00             | 0.01          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.01         | 0.00             | 0.01          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.02         | 0.00             | 0.02          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.02         | 0.00             | 0.02          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.02         | 0.00             | 0.02          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.02         | 0.00             | 0.02          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.02         | 0.00             | 0.02          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.02         | 0.00             | 0.02          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.02         | 0.00             | 0.02          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.02         | 0.00             | 0.02          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.01         | 0.00             | 0.01          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.01         | 0.00             | 0.01          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.01         | 0.00             | 0.01          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.01         | 0.00             | 0.01          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

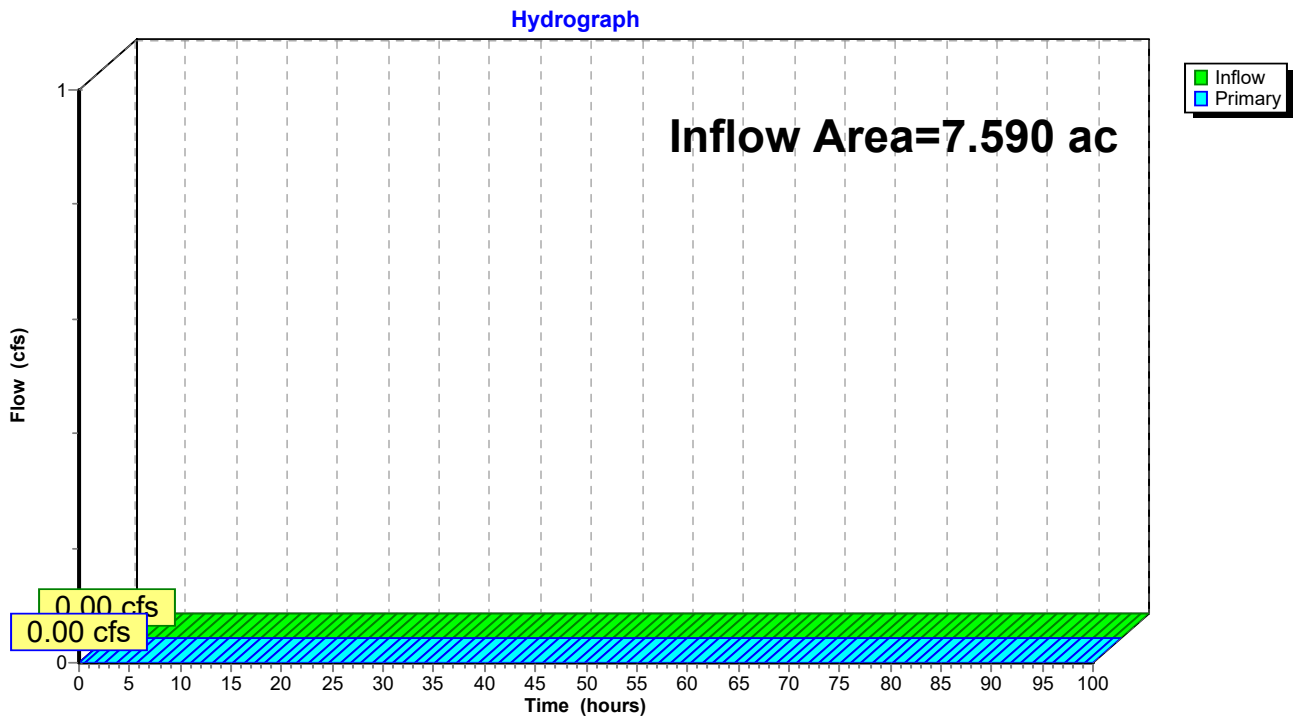


### Summary for Link AP4: Analysis Point 4

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.00" for 1-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

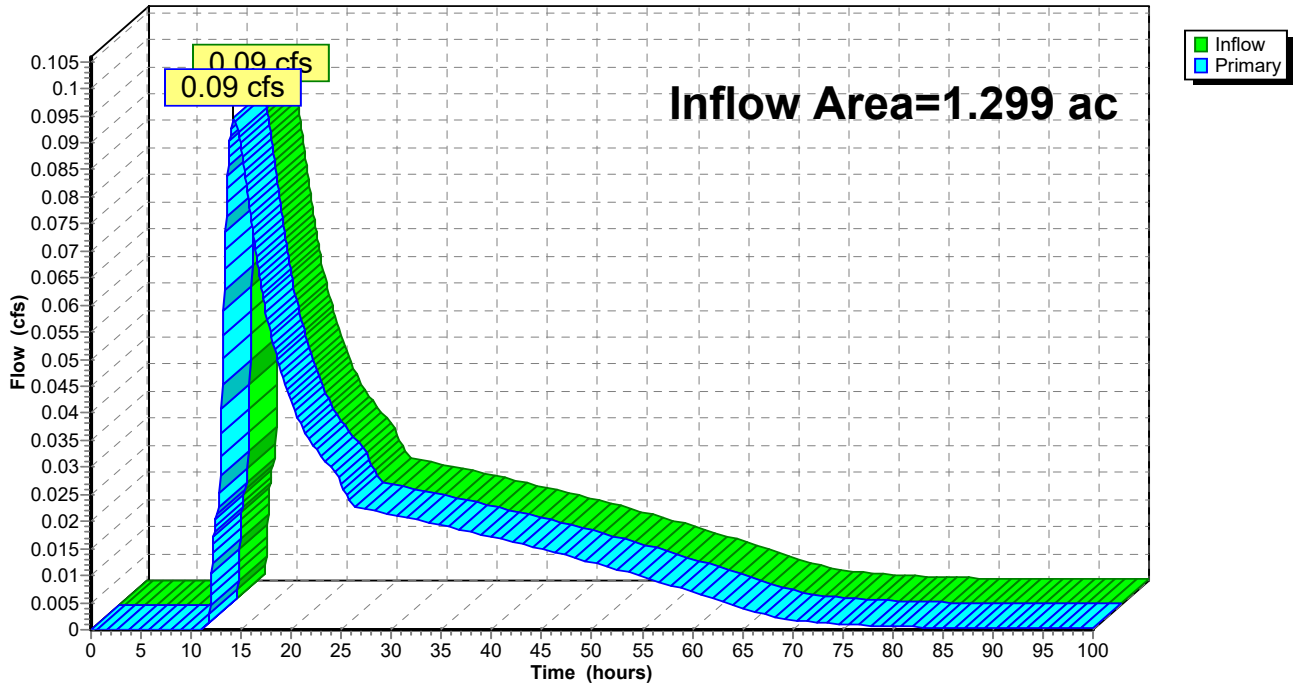
### Summary for Link AP5: Analysis Point 5

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 0.97" for 1-yr event  
Inflow = 0.09 cfs @ 14.26 hrs, Volume= 0.105 af  
Primary = 0.09 cfs @ 14.26 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5

Hydrograph



**Hydrograph for Link AP5: Analysis Point 5**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.01         | 0.00             | 0.01          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.01         | 0.00             | 0.01          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.04         | 0.00             | 0.04          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | <b>0.09</b>  | 0.00             | <b>0.09</b>   | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | <b>0.09</b>  | 0.00             | <b>0.09</b>   | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.08         | 0.00             | 0.08          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.06         | 0.00             | 0.06          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.05         | 0.00             | 0.05          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.05         | 0.00             | 0.05          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.04         | 0.00             | 0.04          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.04         | 0.00             | 0.04          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.03         | 0.00             | 0.03          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.03         | 0.00             | 0.03          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.03         | 0.00             | 0.03          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.03         | 0.00             | 0.03          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.02         | 0.00             | 0.02          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.02         | 0.00             | 0.02          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.02         | 0.00             | 0.02          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.02         | 0.00             | 0.02          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.02         | 0.00             | 0.02          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.02         | 0.00             | 0.02          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.01         | 0.00             | 0.01          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.01         | 0.00             | 0.01          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.01         | 0.00             | 0.01          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 49.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 50.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 51.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 52.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |

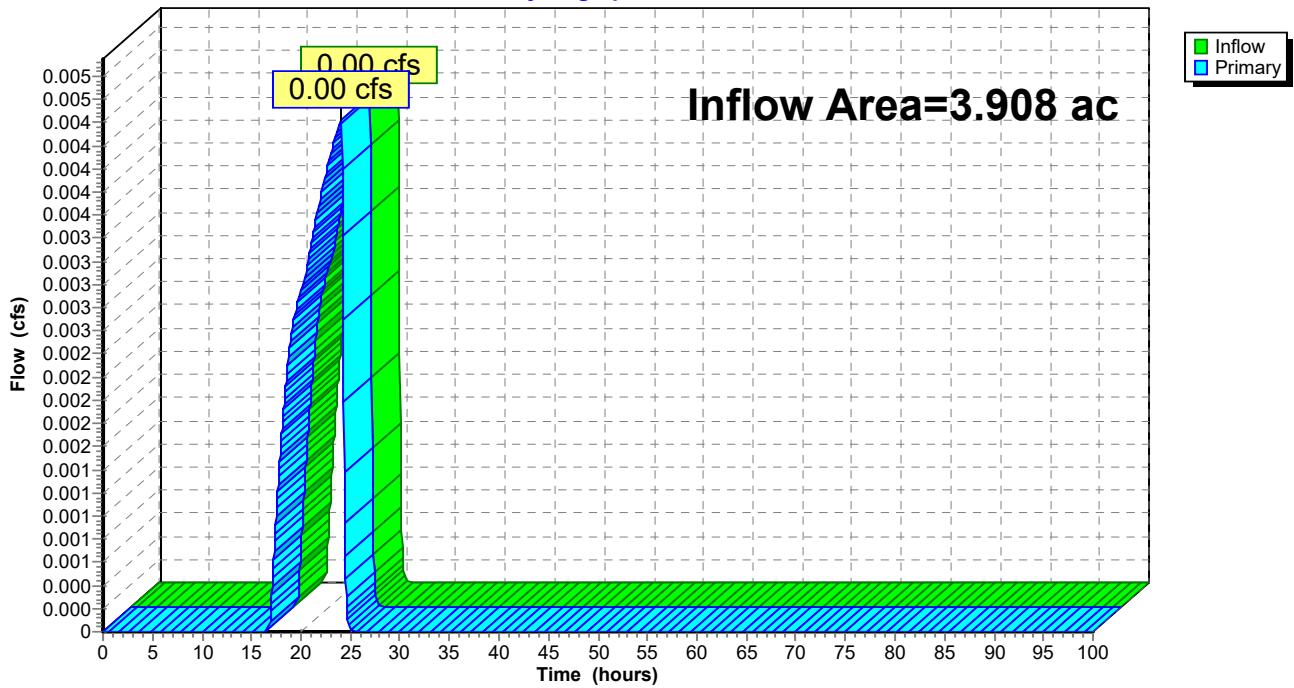
### Summary for Link AP6: Analysis Point 6

Inflow Area = 3.908 ac, 0.00% Impervious, Inflow Depth = 0.01" for 1-yr event  
Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.002 af  
Primary = 0.00 cfs @ 24.01 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6

Hydrograph



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | <b>0.00</b>  | 0.00             | <b>0.00</b>   | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

# 1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"

Prepared by CLA Site

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|  |   |
|--|---|
| <b>Subcatchment 6S: Subcatchment 6</b>       | Runoff Area=1.299 ac 35.18% Impervious Runoff Depth=2.21"<br>Flow Length=73' Tc=9.6 min CN=85 Runoff=4.38 cfs 0.239 af  |
| <b>Subcatchment S4a: Subcatchment 4a</b>     | Runoff Area=10.222 ac 13.62% Impervious Runoff Depth=0.35"<br>Flow Length=907' Tc=38.7 min CN=53 Runoff=1.24 cfs 0.298 af                                     |
| <b>Subcatchment S4b: Subcatchment 4b</b>     | Runoff Area=0.188 ac 0.00% Impervious Runoff Depth=1.60"<br>Tc=6.0 min CN=77 Runoff=0.52 cfs 0.025 af   |
| <b>Subcatchment S5a: Subcatchment 5a</b>     | Runoff Area=5.515 ac 54.87% Impervious Runoff Depth=2.21"<br>Flow Length=634' Tc=17.7 min CN=85 Runoff=14.40 cfs 1.015 af                                     |
| <b>Subcatchment S5b: Subcatchment 5b</b>     | Runoff Area=2.075 ac 33.06% Impervious Runoff Depth=0.32"<br>Flow Length=207' Tc=68.8 min CN=52 Runoff=0.15 cfs 0.055 af                                      |
| <b>Subcatchment S7: Subcatchment 7</b>       | Runoff Area=3.908 ac 0.00% Impervious Runoff Depth=0.25"<br>Flow Length=531' Tc=19.9 min CN=50 Runoff=0.34 cfs 0.082 af                                       |
| <b>Reach R10: 10" Culvert Pond Discharge</b> | Avg. Flow Depth=0.28' Max Vel=3.98 fps Inflow=0.64 cfs 0.239 af<br>10.0" Round Pipe n=0.012 L=27.0' S=0.0122 '/' Capacity=2.62 cfs Outflow=0.64 cfs 0.239 af  |
| <b>Reach R11: Proposed RRv Swale - 268'</b>  | Avg. Flow Depth=0.35' Max Vel=1.16 fps Inflow=1.24 cfs 0.298 af<br>n=0.035 L=268.0' S=0.0047 '/' Capacity=16.83 cfs Outflow=1.22 cfs 0.298 af                 |
| <b>Reach R12: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=1.00' Max Vel=0.48 fps Inflow=0.47 cfs 0.297 af<br>12.0" Round Pipe n=0.012 L=137.0' S=0.0001 '/' Capacity=0.33 cfs Outflow=0.35 cfs 0.297 af |
| <b>Reach R7: Proposed RRv Swale</b>          | Avg. Flow Depth=1.11' Max Vel=1.70 fps Inflow=14.40 cfs 1.015 af<br>n=0.080 L=318.0' S=0.0126 '/' Capacity=35.37 cfs Outflow=13.84 cfs 1.015 af               |
| <b>Reach R8: Proposed RRv Swale</b>          | Avg. Flow Depth=0.12' Max Vel=0.51 fps Inflow=0.15 cfs 0.055 af<br>n=0.080 L=568.0' S=0.0158 '/' Capacity=8.32 cfs Outflow=0.14 cfs 0.055 af                  |
| <b>Reach R9: Proposed RRV Swale</b>          | Avg. Flow Depth=0.75' Max Vel=0.84 fps Inflow=4.38 cfs 0.239 af<br>n=0.080 L=764.0' S=0.0056 '/' Capacity=8.04 cfs Outflow=2.68 cfs 0.239 af                  |
| <b>Pond 4P: Proposed Stormwater Pond</b>     | Peak Elev=338.25' Storage=4,548 cf Inflow=1.22 cfs 0.298 af<br>Primary=0.47 cfs 0.297 af Secondary=0.00 cfs 0.000 af Outflow=0.47 cfs 0.297 af                |
| <b>Pond 5P: Proposed Infiltration Basin</b>  | Peak Elev=328.31' Storage=6,516 cf Inflow=13.84 cfs 1.070 af<br>Discarded=8.43 cfs 1.070 af Secondary=0.00 cfs 0.000 af Outflow=8.43 cfs 1.070 af             |
| <b>Pond 6P: Proposed Stormwater Pond</b>     | Peak Elev=330.79' Storage=6,053 cf Inflow=2.68 cfs 0.239 af<br>Primary=0.64 cfs 0.239 af Secondary=0.00 cfs 0.000 af Outflow=0.64 cfs 0.239 af                |
| <b>Link AP3: Analysis Point 3</b>            | Inflow=0.52 cfs 0.322 af<br>Primary=0.52 cfs 0.322 af   |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

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**Link AP4: Analysis Point 4**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP5: Analysis Point 5**

Inflow=0.64 cfs 0.239 af  
Primary=0.64 cfs 0.239 af

**Link AP6: Analysis Point 6**

Inflow=0.34 cfs 0.082 af  
Primary=0.34 cfs 0.082 af

**Total Runoff Area = 23.207 ac   Runoff Volume = 1.715 af   Average Runoff Depth = 0.89"**  
**76.04% Pervious = 17.646 ac   23.96% Impervious = 5.561 ac**



**Summary for Subcatchment 6S: Subcatchment 6**

Runoff = 4.38 cfs @ 12.01 hrs, Volume= 0.239 af, Depth= 2.21"  
 Routed to Reach R9 : Proposed RRV Swale

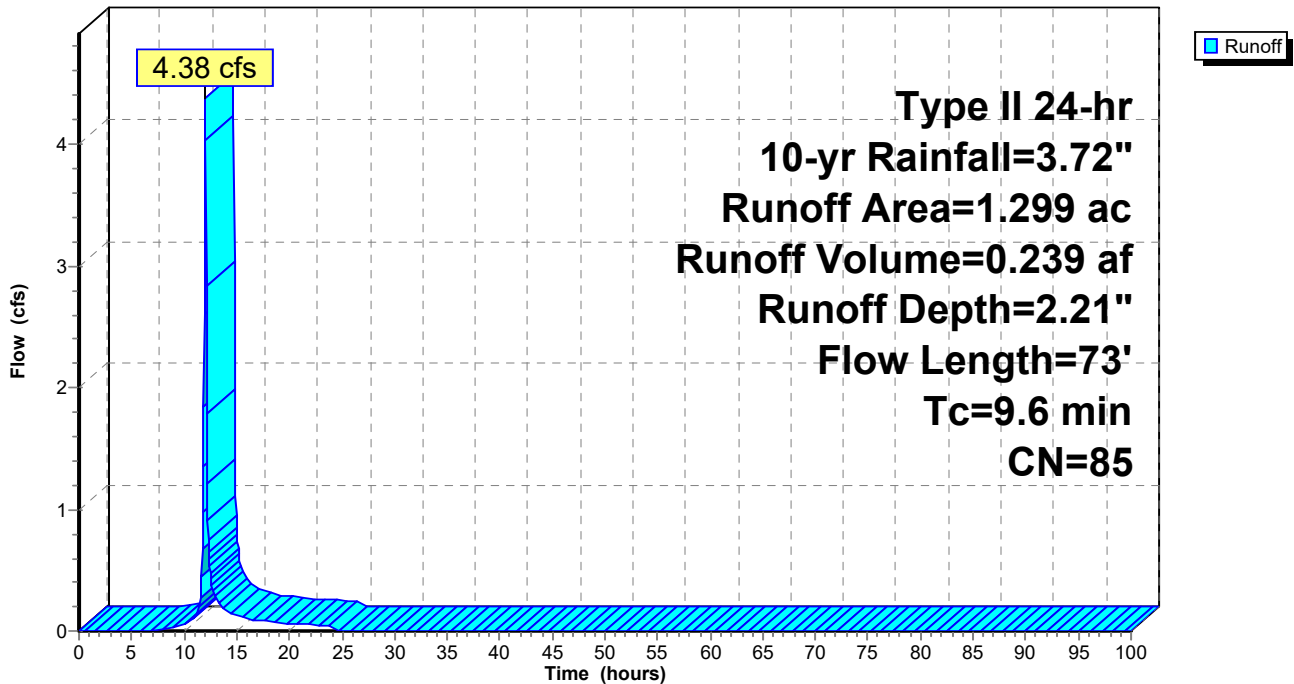
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.411     | 98 | Paved parking, HSG D      |
| 0.021     | 30 | Meadow, non-grazed, HSG A |
| 0.057     | 94 | Fallow, bare soil, HSG D  |
| 0.764     | 78 | Meadow, non-grazed, HSG D |
| * 0.046   | 98 | Water Surface, HSG D      |
| 1.299     | 85 | Weighted Average          |
| 0.842     |    | 64.82% Pervious Area      |
| 0.457     |    | 35.18% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.6      | 65            | 0.0154        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59" |
| 1.0      | 8             | 0.1328        | 0.14              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59" |
| 9.6      | 73            | Total         |                   |                |  |

**Subcatchment 6S: Subcatchment 6**

Hydrograph



**Hydrograph for Subcatchment 6S: Subcatchment 6**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 2.21               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 2.21               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 2.21               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 2.21               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 2.21               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 2.21               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 2.21               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 2.21               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.01            | 61.00           | 3.72                | 2.21               | 0.00            |
| 9.00            | 0.55                | 0.02               | 0.03            | 62.00           | 3.72                | 2.21               | 0.00            |
| 10.00           | 0.67                | 0.05               | 0.05            | 63.00           | 3.72                | 2.21               | 0.00            |
| 11.00           | 0.87                | 0.12               | 0.12            | 64.00           | 3.72                | 2.21               | 0.00            |
| 12.00           | 2.47                | 1.15               | <b>4.36</b>     | 65.00           | 3.72                | 2.21               | 0.00            |
| 13.00           | 2.87                | 1.48               | 0.28            | 66.00           | 3.72                | 2.21               | 0.00            |
| 14.00           | 3.05                | 1.63               | 0.16            | 67.00           | 3.72                | 2.21               | 0.00            |
| 15.00           | 3.18                | 1.74               | 0.13            | 68.00           | 3.72                | 2.21               | 0.00            |
| 16.00           | 3.27                | 1.82               | 0.10            | 69.00           | 3.72                | 2.21               | 0.00            |
| 17.00           | 3.35                | 1.89               | 0.09            | 70.00           | 3.72                | 2.21               | 0.00            |
| 18.00           | 3.43                | 1.95               | 0.08            | 71.00           | 3.72                | 2.21               | 0.00            |
| 19.00           | 3.49                | 2.01               | 0.07            | 72.00           | 3.72                | 2.21               | 0.00            |
| 20.00           | 3.54                | 2.05               | 0.06            | 73.00           | 3.72                | 2.21               | 0.00            |
| 21.00           | 3.59                | 2.09               | 0.05            | 74.00           | 3.72                | 2.21               | 0.00            |
| 22.00           | 3.63                | 2.13               | 0.05            | 75.00           | 3.72                | 2.21               | 0.00            |
| 23.00           | 3.68                | 2.17               | 0.05            | 76.00           | 3.72                | 2.21               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>2.21</b>        | 0.05            | 77.00           | 3.72                | 2.21               | 0.00            |
| 25.00           | 3.72                | 2.21               | 0.00            | 78.00           | 3.72                | 2.21               | 0.00            |
| 26.00           | 3.72                | 2.21               | 0.00            | 79.00           | 3.72                | 2.21               | 0.00            |
| 27.00           | 3.72                | 2.21               | 0.00            | 80.00           | 3.72                | 2.21               | 0.00            |
| 28.00           | 3.72                | 2.21               | 0.00            | 81.00           | 3.72                | 2.21               | 0.00            |
| 29.00           | 3.72                | 2.21               | 0.00            | 82.00           | 3.72                | 2.21               | 0.00            |
| 30.00           | 3.72                | 2.21               | 0.00            | 83.00           | 3.72                | 2.21               | 0.00            |
| 31.00           | 3.72                | 2.21               | 0.00            | 84.00           | 3.72                | 2.21               | 0.00            |
| 32.00           | 3.72                | 2.21               | 0.00            | 85.00           | 3.72                | 2.21               | 0.00            |
| 33.00           | 3.72                | 2.21               | 0.00            | 86.00           | 3.72                | 2.21               | 0.00            |
| 34.00           | 3.72                | 2.21               | 0.00            | 87.00           | 3.72                | 2.21               | 0.00            |
| 35.00           | 3.72                | 2.21               | 0.00            | 88.00           | 3.72                | 2.21               | 0.00            |
| 36.00           | 3.72                | 2.21               | 0.00            | 89.00           | 3.72                | 2.21               | 0.00            |
| 37.00           | 3.72                | 2.21               | 0.00            | 90.00           | 3.72                | 2.21               | 0.00            |
| 38.00           | 3.72                | 2.21               | 0.00            | 91.00           | 3.72                | 2.21               | 0.00            |
| 39.00           | 3.72                | 2.21               | 0.00            | 92.00           | 3.72                | 2.21               | 0.00            |
| 40.00           | 3.72                | 2.21               | 0.00            | 93.00           | 3.72                | 2.21               | 0.00            |
| 41.00           | 3.72                | 2.21               | 0.00            | 94.00           | 3.72                | 2.21               | 0.00            |
| 42.00           | 3.72                | 2.21               | 0.00            | 95.00           | 3.72                | 2.21               | 0.00            |
| 43.00           | 3.72                | 2.21               | 0.00            | 96.00           | 3.72                | 2.21               | 0.00            |
| 44.00           | 3.72                | 2.21               | 0.00            | 97.00           | 3.72                | 2.21               | 0.00            |
| 45.00           | 3.72                | 2.21               | 0.00            | 98.00           | 3.72                | 2.21               | 0.00            |
| 46.00           | 3.72                | 2.21               | 0.00            | 99.00           | 3.72                | 2.21               | 0.00            |
| 47.00           | 3.72                | 2.21               | 0.00            | 100.00          | 3.72                | 2.21               | 0.00            |
| 48.00           | 3.72                | 2.21               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 2.21               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 2.21               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 2.21               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 2.21               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 1.24 cfs @ 12.52 hrs, Volume= 0.298 af, Depth= 0.35"

Routed to Reach R11 : Proposed RRv Swale - 268' Prior to Stormwater Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| * 0.470   | 98 | Paved roads, HSG A            |
| 0.681     | 39 | >75% Grass cover, Good, HSG A |
| 0.818     | 30 | Meadow, non-grazed, HSG A     |
| 0.105     | 98 | Roofs, HSG A                  |
| 0.331     | 98 | Paved parking, HSG A          |
| 0.247     | 98 | Paved parking, HSG D          |
| 4.615     | 30 | Woods, Good, HSG A            |
| 0.519     | 77 | Woods, Good, HSG D            |
| 0.020     | 94 | Fallow, bare soil, HSG D      |
| 2.177     | 80 | >75% Grass cover, Good, HSG D |
| 0.118     | 98 | Roofs, HSG D                  |
| 0.079     | 98 | Paved parking, HSG D          |
| 0.042     | 98 | Water Surface, HSG D          |
| 10.222    | 53 | Weighted Average              |
| 8.830     |    | 86.38% Pervious Area          |
| 1.392     |    | 13.62% Impervious Area        |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

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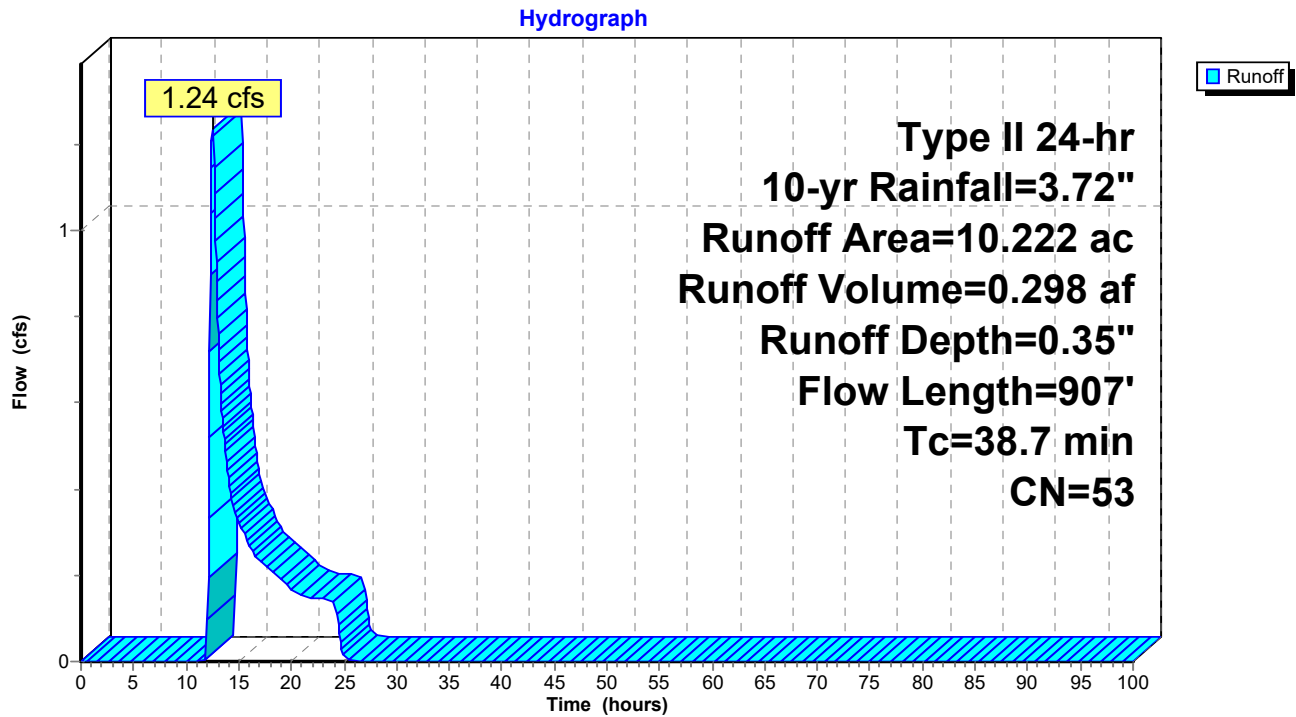
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.7         | 172              | 0.0028           | 0.37                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.4         | 46               | 0.0100           | 2.03                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1         | 9                | 0.0890           | 2.09                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2         | 17               | 0.0360           | 1.33                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 38.7        | 907              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

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**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.35            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.35            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.35            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.35            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.35            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.35            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.35            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.35            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.35            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.35            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.35            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.35            | 0.00         |
| 12.00        | 2.47             | 0.05            | <b>0.03</b>  | 65.00        | 3.72             | 0.35            | 0.00         |
| 13.00        | 2.87             | 0.12            | <b>0.79</b>  | 66.00        | 3.72             | 0.35            | 0.00         |
| 14.00        | 3.05             | 0.16            | 0.43         | 67.00        | 3.72             | 0.35            | 0.00         |
| 15.00        | 3.18             | 0.19            | 0.32         | 68.00        | 3.72             | 0.35            | 0.00         |
| 16.00        | 3.27             | 0.22            | 0.27         | 69.00        | 3.72             | 0.35            | 0.00         |
| 17.00        | 3.35             | 0.24            | 0.23         | 70.00        | 3.72             | 0.35            | 0.00         |
| 18.00        | 3.43             | 0.26            | 0.21         | 71.00        | 3.72             | 0.35            | 0.00         |
| 19.00        | 3.49             | 0.28            | 0.19         | 72.00        | 3.72             | 0.35            | 0.00         |
| 20.00        | 3.54             | 0.29            | 0.17         | 73.00        | 3.72             | 0.35            | 0.00         |
| 21.00        | 3.59             | 0.31            | 0.15         | 74.00        | 3.72             | 0.35            | 0.00         |
| 22.00        | 3.63             | 0.32            | 0.15         | 75.00        | 3.72             | 0.35            | 0.00         |
| 23.00        | 3.68             | 0.34            | 0.14         | 76.00        | 3.72             | 0.35            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.35</b>     | 0.14         | 77.00        | 3.72             | 0.35            | 0.00         |
| 25.00        | 3.72             | 0.35            | 0.01         | 78.00        | 3.72             | 0.35            | 0.00         |
| 26.00        | 3.72             | 0.35            | 0.00         | 79.00        | 3.72             | 0.35            | 0.00         |
| 27.00        | 3.72             | 0.35            | 0.00         | 80.00        | 3.72             | 0.35            | 0.00         |
| 28.00        | 3.72             | 0.35            | 0.00         | 81.00        | 3.72             | 0.35            | 0.00         |
| 29.00        | 3.72             | 0.35            | 0.00         | 82.00        | 3.72             | 0.35            | 0.00         |
| 30.00        | 3.72             | 0.35            | 0.00         | 83.00        | 3.72             | 0.35            | 0.00         |
| 31.00        | 3.72             | 0.35            | 0.00         | 84.00        | 3.72             | 0.35            | 0.00         |
| 32.00        | 3.72             | 0.35            | 0.00         | 85.00        | 3.72             | 0.35            | 0.00         |
| 33.00        | 3.72             | 0.35            | 0.00         | 86.00        | 3.72             | 0.35            | 0.00         |
| 34.00        | 3.72             | 0.35            | 0.00         | 87.00        | 3.72             | 0.35            | 0.00         |
| 35.00        | 3.72             | 0.35            | 0.00         | 88.00        | 3.72             | 0.35            | 0.00         |
| 36.00        | 3.72             | 0.35            | 0.00         | 89.00        | 3.72             | 0.35            | 0.00         |
| 37.00        | 3.72             | 0.35            | 0.00         | 90.00        | 3.72             | 0.35            | 0.00         |
| 38.00        | 3.72             | 0.35            | 0.00         | 91.00        | 3.72             | 0.35            | 0.00         |
| 39.00        | 3.72             | 0.35            | 0.00         | 92.00        | 3.72             | 0.35            | 0.00         |
| 40.00        | 3.72             | 0.35            | 0.00         | 93.00        | 3.72             | 0.35            | 0.00         |
| 41.00        | 3.72             | 0.35            | 0.00         | 94.00        | 3.72             | 0.35            | 0.00         |
| 42.00        | 3.72             | 0.35            | 0.00         | 95.00        | 3.72             | 0.35            | 0.00         |
| 43.00        | 3.72             | 0.35            | 0.00         | 96.00        | 3.72             | 0.35            | 0.00         |
| 44.00        | 3.72             | 0.35            | 0.00         | 97.00        | 3.72             | 0.35            | 0.00         |
| 45.00        | 3.72             | 0.35            | 0.00         | 98.00        | 3.72             | 0.35            | 0.00         |
| 46.00        | 3.72             | 0.35            | 0.00         | 99.00        | 3.72             | 0.35            | 0.00         |
| 47.00        | 3.72             | 0.35            | 0.00         | 100.00       | 3.72             | 0.35            | 0.00         |
| 48.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.35            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 0.52 cfs @ 11.98 hrs, Volume= 0.025 af, Depth= 1.60"  
 Routed to Link AP3 : Analysis Point 3

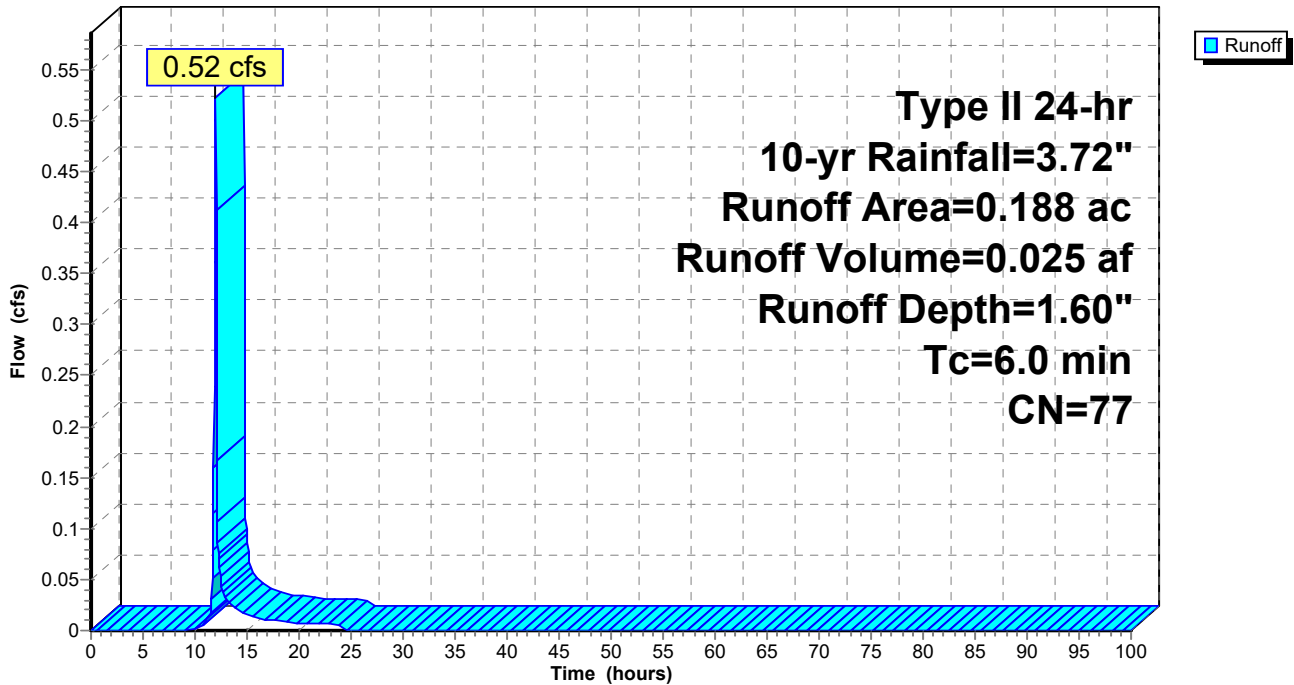
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.114     | 77 | Woods, Good, HSG D        |
| 0.074     | 78 | Meadow, non-grazed, HSG D |
| 0.188     | 77 | Weighted Average          |
| 0.188     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Hydro Flow |

**Subcatchment S4b: Subcatchment 4b**

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

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**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 3.72                | 1.60               | 0.00            |
| 1.00            | 0.04                | 0.00               | 0.00            | 54.00           | 3.72                | 1.60               | 0.00            |
| 2.00            | 0.08                | 0.00               | 0.00            | 55.00           | 3.72                | 1.60               | 0.00            |
| 3.00            | 0.13                | 0.00               | 0.00            | 56.00           | 3.72                | 1.60               | 0.00            |
| 4.00            | 0.18                | 0.00               | 0.00            | 57.00           | 3.72                | 1.60               | 0.00            |
| 5.00            | 0.23                | 0.00               | 0.00            | 58.00           | 3.72                | 1.60               | 0.00            |
| 6.00            | 0.30                | 0.00               | 0.00            | 59.00           | 3.72                | 1.60               | 0.00            |
| 7.00            | 0.37                | 0.00               | 0.00            | 60.00           | 3.72                | 1.60               | 0.00            |
| 8.00            | 0.45                | 0.00               | 0.00            | 61.00           | 3.72                | 1.60               | 0.00            |
| 9.00            | 0.55                | 0.00               | 0.00            | 62.00           | 3.72                | 1.60               | 0.00            |
| 10.00           | 0.67                | 0.00               | 0.00            | 63.00           | 3.72                | 1.60               | 0.00            |
| 11.00           | 0.87                | 0.02               | 0.01            | 64.00           | 3.72                | 1.60               | 0.00            |
| 12.00           | 2.47                | 0.72               | <b>0.50</b>     | 65.00           | 3.72                | 1.60               | 0.00            |
| 13.00           | 2.87                | 0.98               | 0.03            | 66.00           | 3.72                | 1.60               | 0.00            |
| 14.00           | 3.05                | 1.11               | 0.02            | 67.00           | 3.72                | 1.60               | 0.00            |
| 15.00           | 3.18                | 1.19               | 0.02            | 68.00           | 3.72                | 1.60               | 0.00            |
| 16.00           | 3.27                | 1.26               | 0.01            | 69.00           | 3.72                | 1.60               | 0.00            |
| 17.00           | 3.35                | 1.32               | 0.01            | 70.00           | 3.72                | 1.60               | 0.00            |
| 18.00           | 3.43                | 1.38               | 0.01            | 71.00           | 3.72                | 1.60               | 0.00            |
| 19.00           | 3.49                | 1.42               | 0.01            | 72.00           | 3.72                | 1.60               | 0.00            |
| 20.00           | 3.54                | 1.46               | 0.01            | 73.00           | 3.72                | 1.60               | 0.00            |
| 21.00           | 3.59                | 1.50               | 0.01            | 74.00           | 3.72                | 1.60               | 0.00            |
| 22.00           | 3.63                | 1.53               | 0.01            | 75.00           | 3.72                | 1.60               | 0.00            |
| 23.00           | 3.68                | 1.56               | 0.01            | 76.00           | 3.72                | 1.60               | 0.00            |
| 24.00           | <b>3.72</b>         | <b>1.60</b>        | 0.01            | 77.00           | 3.72                | 1.60               | 0.00            |
| 25.00           | 3.72                | 1.60               | 0.00            | 78.00           | 3.72                | 1.60               | 0.00            |
| 26.00           | 3.72                | 1.60               | 0.00            | 79.00           | 3.72                | 1.60               | 0.00            |
| 27.00           | 3.72                | 1.60               | 0.00            | 80.00           | 3.72                | 1.60               | 0.00            |
| 28.00           | 3.72                | 1.60               | 0.00            | 81.00           | 3.72                | 1.60               | 0.00            |
| 29.00           | 3.72                | 1.60               | 0.00            | 82.00           | 3.72                | 1.60               | 0.00            |
| 30.00           | 3.72                | 1.60               | 0.00            | 83.00           | 3.72                | 1.60               | 0.00            |
| 31.00           | 3.72                | 1.60               | 0.00            | 84.00           | 3.72                | 1.60               | 0.00            |
| 32.00           | 3.72                | 1.60               | 0.00            | 85.00           | 3.72                | 1.60               | 0.00            |
| 33.00           | 3.72                | 1.60               | 0.00            | 86.00           | 3.72                | 1.60               | 0.00            |
| 34.00           | 3.72                | 1.60               | 0.00            | 87.00           | 3.72                | 1.60               | 0.00            |
| 35.00           | 3.72                | 1.60               | 0.00            | 88.00           | 3.72                | 1.60               | 0.00            |
| 36.00           | 3.72                | 1.60               | 0.00            | 89.00           | 3.72                | 1.60               | 0.00            |
| 37.00           | 3.72                | 1.60               | 0.00            | 90.00           | 3.72                | 1.60               | 0.00            |
| 38.00           | 3.72                | 1.60               | 0.00            | 91.00           | 3.72                | 1.60               | 0.00            |
| 39.00           | 3.72                | 1.60               | 0.00            | 92.00           | 3.72                | 1.60               | 0.00            |
| 40.00           | 3.72                | 1.60               | 0.00            | 93.00           | 3.72                | 1.60               | 0.00            |
| 41.00           | 3.72                | 1.60               | 0.00            | 94.00           | 3.72                | 1.60               | 0.00            |
| 42.00           | 3.72                | 1.60               | 0.00            | 95.00           | 3.72                | 1.60               | 0.00            |
| 43.00           | 3.72                | 1.60               | 0.00            | 96.00           | 3.72                | 1.60               | 0.00            |
| 44.00           | 3.72                | 1.60               | 0.00            | 97.00           | 3.72                | 1.60               | 0.00            |
| 45.00           | 3.72                | 1.60               | 0.00            | 98.00           | 3.72                | 1.60               | 0.00            |
| 46.00           | 3.72                | 1.60               | 0.00            | 99.00           | 3.72                | 1.60               | 0.00            |
| 47.00           | 3.72                | 1.60               | 0.00            | 100.00          | 3.72                | 1.60               | 0.00            |
| 48.00           | 3.72                | 1.60               | 0.00            |                 |                     |                    |                 |
| 49.00           | 3.72                | 1.60               | 0.00            |                 |                     |                    |                 |
| 50.00           | 3.72                | 1.60               | 0.00            |                 |                     |                    |                 |
| 51.00           | 3.72                | 1.60               | 0.00            |                 |                     |                    |                 |
| 52.00           | 3.72                | 1.60               | 0.00            |                 |                     |                    |                 |



**Summary for Subcatchment S5a: Subcatchment 5a**

Runoff = 14.40 cfs @ 12.10 hrs, Volume= 1.015 af, Depth= 2.21"  
 Routed to Reach R7 : Proposed RRv Swale

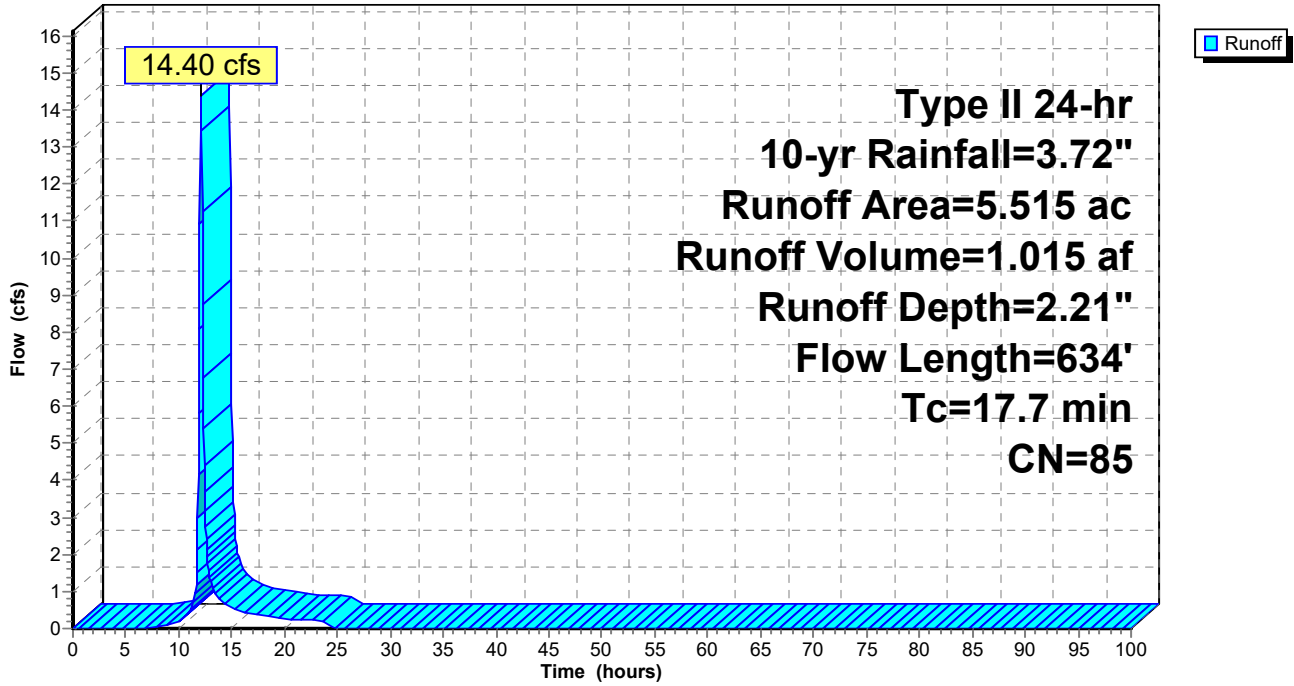
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.428     | 78 | Meadow, non-grazed, HSG D |
| 0.591     | 98 | Paved parking, HSG D      |
| 0.921     | 98 | Roofs, HSG A              |
| 0.035     | 98 | Roofs, HSG D              |
| 1.479     | 98 | Paved parking, HSG A      |
| 1.207     | 94 | Fallow, bare soil, HSG D  |
| 0.830     | 30 | Meadow, non-grazed, HSG A |
| 0.024     | 30 | Woods, Good, HSG A        |
| 5.515     | 85 | Weighted Average          |
| 2.489     |    | 45.13% Pervious Area      |
| 3.026     |    | 54.87% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 4.2      | 22            | 0.0080        | 0.09              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                           |
| 0.6      | 24            | 0.0080        | 0.64              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 3.9      | 53            | 0.0080        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.4      | 22            | 0.0080        | 0.89              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 7.9      | 473           | 0.0100        | 1.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.2      | 21            | 0.0100        | 2.03              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps                  |
| 0.5      | 19            | 0.0070        | 0.59              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 17.7     | 634           | Total         |                   |                |   |

### Subcatchment S5a: Subcatchment 5a

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

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**Hydrograph for Subcatchment S5a: Subcatchment 5a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 2.21            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 2.21            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 2.21            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 2.21            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 2.21            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 2.21            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 2.21            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 2.21            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.03         | 61.00        | 3.72             | 2.21            | 0.00         |
| 9.00         | 0.55             | 0.02            | 0.10         | 62.00        | 3.72             | 2.21            | 0.00         |
| 10.00        | 0.67             | 0.05            | 0.19         | 63.00        | 3.72             | 2.21            | 0.00         |
| 11.00        | 0.87             | 0.12            | 0.47         | 64.00        | 3.72             | 2.21            | 0.00         |
| 12.00        | 2.47             | 1.15            | <b>10.91</b> | 65.00        | 3.72             | 2.21            | 0.00         |
| 13.00        | 2.87             | 1.48            | <b>1.30</b>  | 66.00        | 3.72             | 2.21            | 0.00         |
| 14.00        | 3.05             | 1.63            | 0.74         | 67.00        | 3.72             | 2.21            | 0.00         |
| 15.00        | 3.18             | 1.74            | 0.56         | 68.00        | 3.72             | 2.21            | 0.00         |
| 16.00        | 3.27             | 1.82            | 0.44         | 69.00        | 3.72             | 2.21            | 0.00         |
| 17.00        | 3.35             | 1.89            | 0.38         | 70.00        | 3.72             | 2.21            | 0.00         |
| 18.00        | 3.43             | 1.95            | 0.33         | 71.00        | 3.72             | 2.21            | 0.00         |
| 19.00        | 3.49             | 2.01            | 0.29         | 72.00        | 3.72             | 2.21            | 0.00         |
| 20.00        | 3.54             | 2.05            | 0.25         | 73.00        | 3.72             | 2.21            | 0.00         |
| 21.00        | 3.59             | 2.09            | 0.23         | 74.00        | 3.72             | 2.21            | 0.00         |
| 22.00        | 3.63             | 2.13            | 0.22         | 75.00        | 3.72             | 2.21            | 0.00         |
| 23.00        | 3.68             | 2.17            | 0.21         | 76.00        | 3.72             | 2.21            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>2.21</b>     | 0.20         | 77.00        | 3.72             | 2.21            | 0.00         |
| 25.00        | 3.72             | 2.21            | 0.00         | 78.00        | 3.72             | 2.21            | 0.00         |
| 26.00        | 3.72             | 2.21            | 0.00         | 79.00        | 3.72             | 2.21            | 0.00         |
| 27.00        | 3.72             | 2.21            | 0.00         | 80.00        | 3.72             | 2.21            | 0.00         |
| 28.00        | 3.72             | 2.21            | 0.00         | 81.00        | 3.72             | 2.21            | 0.00         |
| 29.00        | 3.72             | 2.21            | 0.00         | 82.00        | 3.72             | 2.21            | 0.00         |
| 30.00        | 3.72             | 2.21            | 0.00         | 83.00        | 3.72             | 2.21            | 0.00         |
| 31.00        | 3.72             | 2.21            | 0.00         | 84.00        | 3.72             | 2.21            | 0.00         |
| 32.00        | 3.72             | 2.21            | 0.00         | 85.00        | 3.72             | 2.21            | 0.00         |
| 33.00        | 3.72             | 2.21            | 0.00         | 86.00        | 3.72             | 2.21            | 0.00         |
| 34.00        | 3.72             | 2.21            | 0.00         | 87.00        | 3.72             | 2.21            | 0.00         |
| 35.00        | 3.72             | 2.21            | 0.00         | 88.00        | 3.72             | 2.21            | 0.00         |
| 36.00        | 3.72             | 2.21            | 0.00         | 89.00        | 3.72             | 2.21            | 0.00         |
| 37.00        | 3.72             | 2.21            | 0.00         | 90.00        | 3.72             | 2.21            | 0.00         |
| 38.00        | 3.72             | 2.21            | 0.00         | 91.00        | 3.72             | 2.21            | 0.00         |
| 39.00        | 3.72             | 2.21            | 0.00         | 92.00        | 3.72             | 2.21            | 0.00         |
| 40.00        | 3.72             | 2.21            | 0.00         | 93.00        | 3.72             | 2.21            | 0.00         |
| 41.00        | 3.72             | 2.21            | 0.00         | 94.00        | 3.72             | 2.21            | 0.00         |
| 42.00        | 3.72             | 2.21            | 0.00         | 95.00        | 3.72             | 2.21            | 0.00         |
| 43.00        | 3.72             | 2.21            | 0.00         | 96.00        | 3.72             | 2.21            | 0.00         |
| 44.00        | 3.72             | 2.21            | 0.00         | 97.00        | 3.72             | 2.21            | 0.00         |
| 45.00        | 3.72             | 2.21            | 0.00         | 98.00        | 3.72             | 2.21            | 0.00         |
| 46.00        | 3.72             | 2.21            | 0.00         | 99.00        | 3.72             | 2.21            | 0.00         |
| 47.00        | 3.72             | 2.21            | 0.00         | 100.00       | 3.72             | 2.21            | 0.00         |
| 48.00        | 3.72             | 2.21            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 2.21            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 2.21            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 2.21            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 2.21            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S5b: Subcatchment 5b**

Runoff = 0.15 cfs @ 13.05 hrs, Volume= 0.055 af, Depth= 0.32"

Routed to Reach R8 : Proposed RRv Swale

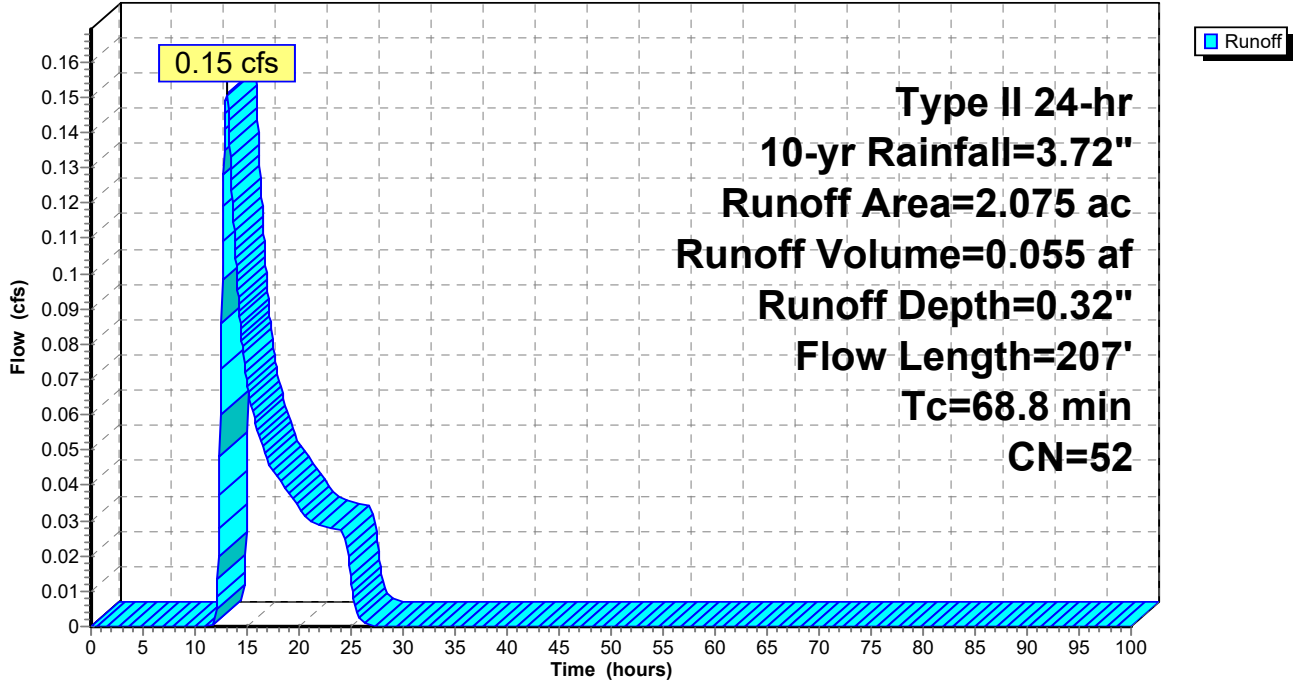
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.448     | 30 | Woods, Good, HSG A        |
| 0.120     | 98 | Roofs, HSG A              |
| 0.566     | 98 | Paved parking, HSG A      |
| 0.941     | 30 | Meadow, non-grazed, HSG A |
| 2.075     | 52 | Weighted Average          |
| 1.389     |    | 66.94% Pervious Area      |
| 0.686     |    | 33.06% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 22.3     | 46            | 0.0200        | 0.03              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 44.2     | 54            | 0.0050        | 0.02              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 1.0      | 21            | 0.0050        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.7      | 33            | 0.0130        | 0.80              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.6      | 53            | 0.0385        | 1.37              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 68.8     | 207           | Total         |                   |                |   |

### Subcatchment S5b: Subcatchment 5b

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

Printed 12/13/2024

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**Hydrograph for Subcatchment S5b: Subcatchment 5b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.32            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.32            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.32            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.32            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.32            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.32            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.32            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.32            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.32            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.32            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.32            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.32            | 0.00         |
| 12.00        | 2.47             | 0.04            | 0.00         | 65.00        | 3.72             | 0.32            | 0.00         |
| 13.00        | 2.87             | 0.10            | <b>0.15</b>  | 66.00        | 3.72             | 0.32            | 0.00         |
| 14.00        | 3.05             | 0.14            | <b>0.10</b>  | 67.00        | 3.72             | 0.32            | 0.00         |
| 15.00        | 3.18             | 0.17            | 0.07         | 68.00        | 3.72             | 0.32            | 0.00         |
| 16.00        | 3.27             | 0.19            | 0.06         | 69.00        | 3.72             | 0.32            | 0.00         |
| 17.00        | 3.35             | 0.21            | 0.05         | 70.00        | 3.72             | 0.32            | 0.00         |
| 18.00        | 3.43             | 0.23            | 0.04         | 71.00        | 3.72             | 0.32            | 0.00         |
| 19.00        | 3.49             | 0.25            | 0.04         | 72.00        | 3.72             | 0.32            | 0.00         |
| 20.00        | 3.54             | 0.26            | 0.03         | 73.00        | 3.72             | 0.32            | 0.00         |
| 21.00        | 3.59             | 0.28            | 0.03         | 74.00        | 3.72             | 0.32            | 0.00         |
| 22.00        | 3.63             | 0.29            | 0.03         | 75.00        | 3.72             | 0.32            | 0.00         |
| 23.00        | 3.68             | 0.30            | 0.03         | 76.00        | 3.72             | 0.32            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.32</b>     | 0.03         | 77.00        | 3.72             | 0.32            | 0.00         |
| 25.00        | 3.72             | 0.32            | 0.01         | 78.00        | 3.72             | 0.32            | 0.00         |
| 26.00        | 3.72             | 0.32            | 0.00         | 79.00        | 3.72             | 0.32            | 0.00         |
| 27.00        | 3.72             | 0.32            | 0.00         | 80.00        | 3.72             | 0.32            | 0.00         |
| 28.00        | 3.72             | 0.32            | 0.00         | 81.00        | 3.72             | 0.32            | 0.00         |
| 29.00        | 3.72             | 0.32            | 0.00         | 82.00        | 3.72             | 0.32            | 0.00         |
| 30.00        | 3.72             | 0.32            | 0.00         | 83.00        | 3.72             | 0.32            | 0.00         |
| 31.00        | 3.72             | 0.32            | 0.00         | 84.00        | 3.72             | 0.32            | 0.00         |
| 32.00        | 3.72             | 0.32            | 0.00         | 85.00        | 3.72             | 0.32            | 0.00         |
| 33.00        | 3.72             | 0.32            | 0.00         | 86.00        | 3.72             | 0.32            | 0.00         |
| 34.00        | 3.72             | 0.32            | 0.00         | 87.00        | 3.72             | 0.32            | 0.00         |
| 35.00        | 3.72             | 0.32            | 0.00         | 88.00        | 3.72             | 0.32            | 0.00         |
| 36.00        | 3.72             | 0.32            | 0.00         | 89.00        | 3.72             | 0.32            | 0.00         |
| 37.00        | 3.72             | 0.32            | 0.00         | 90.00        | 3.72             | 0.32            | 0.00         |
| 38.00        | 3.72             | 0.32            | 0.00         | 91.00        | 3.72             | 0.32            | 0.00         |
| 39.00        | 3.72             | 0.32            | 0.00         | 92.00        | 3.72             | 0.32            | 0.00         |
| 40.00        | 3.72             | 0.32            | 0.00         | 93.00        | 3.72             | 0.32            | 0.00         |
| 41.00        | 3.72             | 0.32            | 0.00         | 94.00        | 3.72             | 0.32            | 0.00         |
| 42.00        | 3.72             | 0.32            | 0.00         | 95.00        | 3.72             | 0.32            | 0.00         |
| 43.00        | 3.72             | 0.32            | 0.00         | 96.00        | 3.72             | 0.32            | 0.00         |
| 44.00        | 3.72             | 0.32            | 0.00         | 97.00        | 3.72             | 0.32            | 0.00         |
| 45.00        | 3.72             | 0.32            | 0.00         | 98.00        | 3.72             | 0.32            | 0.00         |
| 46.00        | 3.72             | 0.32            | 0.00         | 99.00        | 3.72             | 0.32            | 0.00         |
| 47.00        | 3.72             | 0.32            | 0.00         | 100.00       | 3.72             | 0.32            | 0.00         |
| 48.00        | 3.72             | 0.32            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.32            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.32            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.32            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.32            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S7: Subcatchment 7**

Runoff = 0.34 cfs @ 12.25 hrs, Volume= 0.082 af, Depth= 0.25"

Routed to Link AP6 : Analysis Point 6

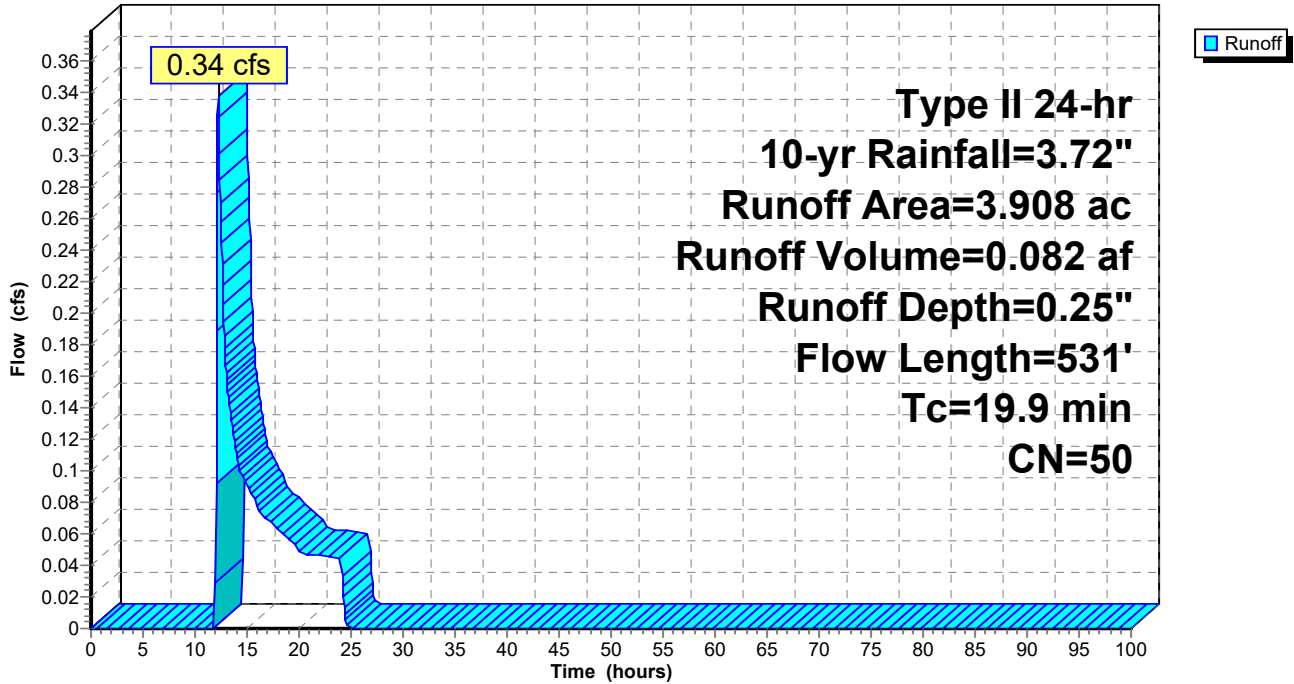
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-yr Rainfall=3.72"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 2.301     | 30 | Meadow, non-grazed, HSG A |
| 1.607     | 78 | Meadow, non-grazed, HSG D |
| 3.908     | 50 | Weighted Average          |
| 3.908     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.8      | 12            | 0.0195        | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 8.6      | 88            | 0.0209        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0209        | 1.01              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.2      | 150           | 0.0126        | 0.79              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.8      | 50            | 0.0221        | 1.04              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 91            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.2      | 84            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 19.9     | 531           | Total         |                   |                |   |

### Subcatchment S7: Subcatchment 7

Hydrograph





**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 3.72             | 0.25            | 0.00         |
| 1.00         | 0.04             | 0.00            | 0.00         | 54.00        | 3.72             | 0.25            | 0.00         |
| 2.00         | 0.08             | 0.00            | 0.00         | 55.00        | 3.72             | 0.25            | 0.00         |
| 3.00         | 0.13             | 0.00            | 0.00         | 56.00        | 3.72             | 0.25            | 0.00         |
| 4.00         | 0.18             | 0.00            | 0.00         | 57.00        | 3.72             | 0.25            | 0.00         |
| 5.00         | 0.23             | 0.00            | 0.00         | 58.00        | 3.72             | 0.25            | 0.00         |
| 6.00         | 0.30             | 0.00            | 0.00         | 59.00        | 3.72             | 0.25            | 0.00         |
| 7.00         | 0.37             | 0.00            | 0.00         | 60.00        | 3.72             | 0.25            | 0.00         |
| 8.00         | 0.45             | 0.00            | 0.00         | 61.00        | 3.72             | 0.25            | 0.00         |
| 9.00         | 0.55             | 0.00            | 0.00         | 62.00        | 3.72             | 0.25            | 0.00         |
| 10.00        | 0.67             | 0.00            | 0.00         | 63.00        | 3.72             | 0.25            | 0.00         |
| 11.00        | 0.87             | 0.00            | 0.00         | 64.00        | 3.72             | 0.25            | 0.00         |
| 12.00        | 2.47             | 0.02            | <b>0.03</b>  | 65.00        | 3.72             | 0.25            | 0.00         |
| 13.00        | 2.87             | 0.07            | <b>0.16</b>  | 66.00        | 3.72             | 0.25            | 0.00         |
| 14.00        | 3.05             | 0.10            | 0.11         | 67.00        | 3.72             | 0.25            | 0.00         |
| 15.00        | 3.18             | 0.12            | 0.09         | 68.00        | 3.72             | 0.25            | 0.00         |
| 16.00        | 3.27             | 0.14            | 0.08         | 69.00        | 3.72             | 0.25            | 0.00         |
| 17.00        | 3.35             | 0.16            | 0.07         | 70.00        | 3.72             | 0.25            | 0.00         |
| 18.00        | 3.43             | 0.18            | 0.06         | 71.00        | 3.72             | 0.25            | 0.00         |
| 19.00        | 3.49             | 0.19            | 0.06         | 72.00        | 3.72             | 0.25            | 0.00         |
| 20.00        | 3.54             | 0.21            | 0.05         | 73.00        | 3.72             | 0.25            | 0.00         |
| 21.00        | 3.59             | 0.22            | 0.05         | 74.00        | 3.72             | 0.25            | 0.00         |
| 22.00        | 3.63             | 0.23            | 0.05         | 75.00        | 3.72             | 0.25            | 0.00         |
| 23.00        | 3.68             | 0.24            | 0.05         | 76.00        | 3.72             | 0.25            | 0.00         |
| 24.00        | <b>3.72</b>      | <b>0.25</b>     | 0.04         | 77.00        | 3.72             | 0.25            | 0.00         |
| 25.00        | 3.72             | 0.25            | 0.00         | 78.00        | 3.72             | 0.25            | 0.00         |
| 26.00        | 3.72             | 0.25            | 0.00         | 79.00        | 3.72             | 0.25            | 0.00         |
| 27.00        | 3.72             | 0.25            | 0.00         | 80.00        | 3.72             | 0.25            | 0.00         |
| 28.00        | 3.72             | 0.25            | 0.00         | 81.00        | 3.72             | 0.25            | 0.00         |
| 29.00        | 3.72             | 0.25            | 0.00         | 82.00        | 3.72             | 0.25            | 0.00         |
| 30.00        | 3.72             | 0.25            | 0.00         | 83.00        | 3.72             | 0.25            | 0.00         |
| 31.00        | 3.72             | 0.25            | 0.00         | 84.00        | 3.72             | 0.25            | 0.00         |
| 32.00        | 3.72             | 0.25            | 0.00         | 85.00        | 3.72             | 0.25            | 0.00         |
| 33.00        | 3.72             | 0.25            | 0.00         | 86.00        | 3.72             | 0.25            | 0.00         |
| 34.00        | 3.72             | 0.25            | 0.00         | 87.00        | 3.72             | 0.25            | 0.00         |
| 35.00        | 3.72             | 0.25            | 0.00         | 88.00        | 3.72             | 0.25            | 0.00         |
| 36.00        | 3.72             | 0.25            | 0.00         | 89.00        | 3.72             | 0.25            | 0.00         |
| 37.00        | 3.72             | 0.25            | 0.00         | 90.00        | 3.72             | 0.25            | 0.00         |
| 38.00        | 3.72             | 0.25            | 0.00         | 91.00        | 3.72             | 0.25            | 0.00         |
| 39.00        | 3.72             | 0.25            | 0.00         | 92.00        | 3.72             | 0.25            | 0.00         |
| 40.00        | 3.72             | 0.25            | 0.00         | 93.00        | 3.72             | 0.25            | 0.00         |
| 41.00        | 3.72             | 0.25            | 0.00         | 94.00        | 3.72             | 0.25            | 0.00         |
| 42.00        | 3.72             | 0.25            | 0.00         | 95.00        | 3.72             | 0.25            | 0.00         |
| 43.00        | 3.72             | 0.25            | 0.00         | 96.00        | 3.72             | 0.25            | 0.00         |
| 44.00        | 3.72             | 0.25            | 0.00         | 97.00        | 3.72             | 0.25            | 0.00         |
| 45.00        | 3.72             | 0.25            | 0.00         | 98.00        | 3.72             | 0.25            | 0.00         |
| 46.00        | 3.72             | 0.25            | 0.00         | 99.00        | 3.72             | 0.25            | 0.00         |
| 47.00        | 3.72             | 0.25            | 0.00         | 100.00       | 3.72             | 0.25            | 0.00         |
| 48.00        | 3.72             | 0.25            | 0.00         |              |                  |                 |              |
| 49.00        | 3.72             | 0.25            | 0.00         |              |                  |                 |              |
| 50.00        | 3.72             | 0.25            | 0.00         |              |                  |                 |              |
| 51.00        | 3.72             | 0.25            | 0.00         |              |                  |                 |              |
| 52.00        | 3.72             | 0.25            | 0.00         |              |                  |                 |              |

### Summary for Reach R10: 10" Culvert Pond Discharge

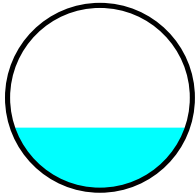
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 2.20" for 10-yr event  
Inflow = 0.64 cfs @ 12.74 hrs, Volume= 0.239 af  
Outflow = 0.64 cfs @ 12.72 hrs, Volume= 0.239 af, Atten= 0%, Lag= 0.0 min  
Routed to Link AP5 : Analysis Point 5

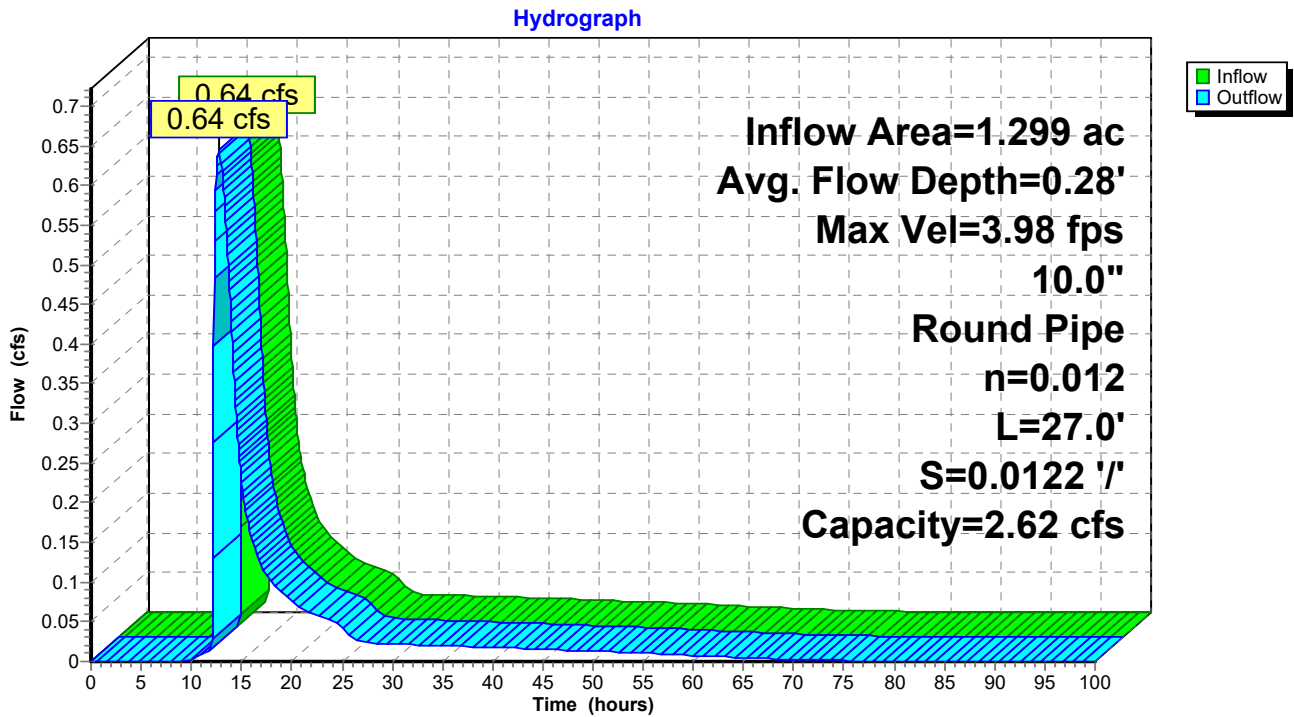
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 3.98 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.16 fps, Avg. Travel Time= 0.4 min

Peak Storage= 4 cf @ 12.72 hrs  
Average Depth at Peak Storage= 0.28' , Surface Width= 0.79'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.62 cfs

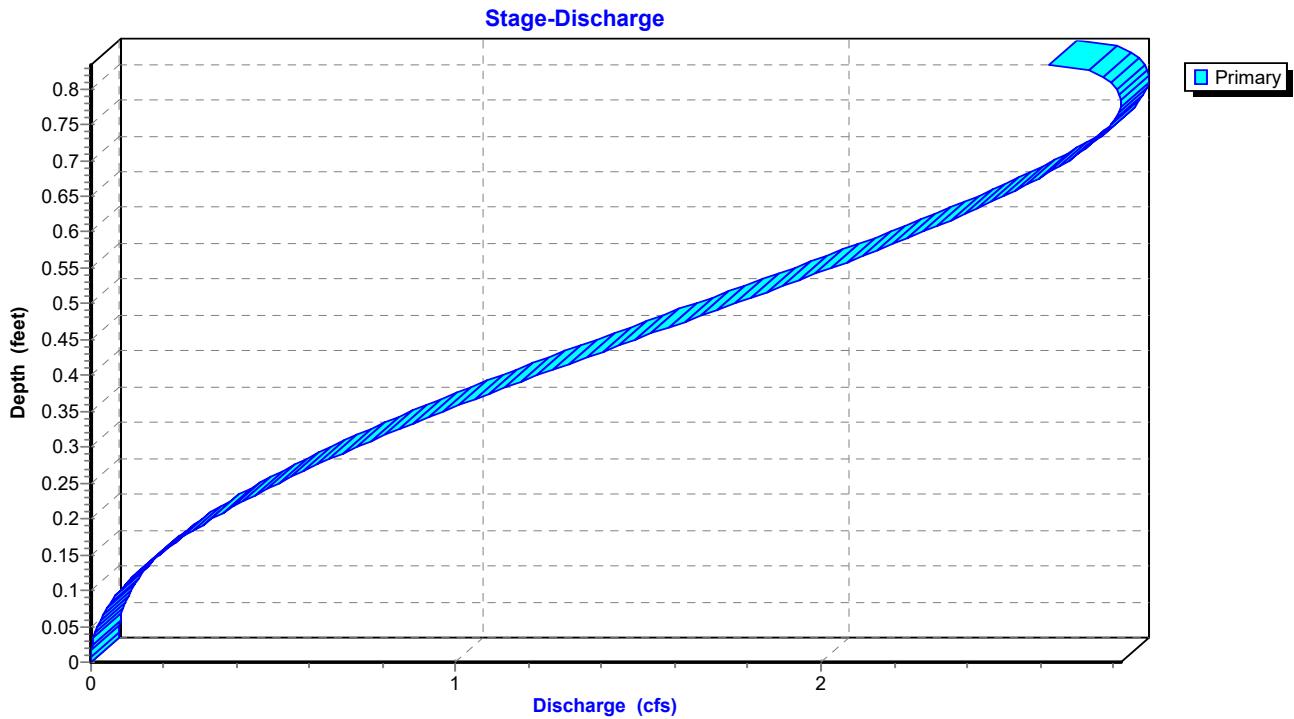
10.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 27.0' Slope= 0.0122 '/'  
Inlet Invert= 329.33', Outlet Invert= 329.00'



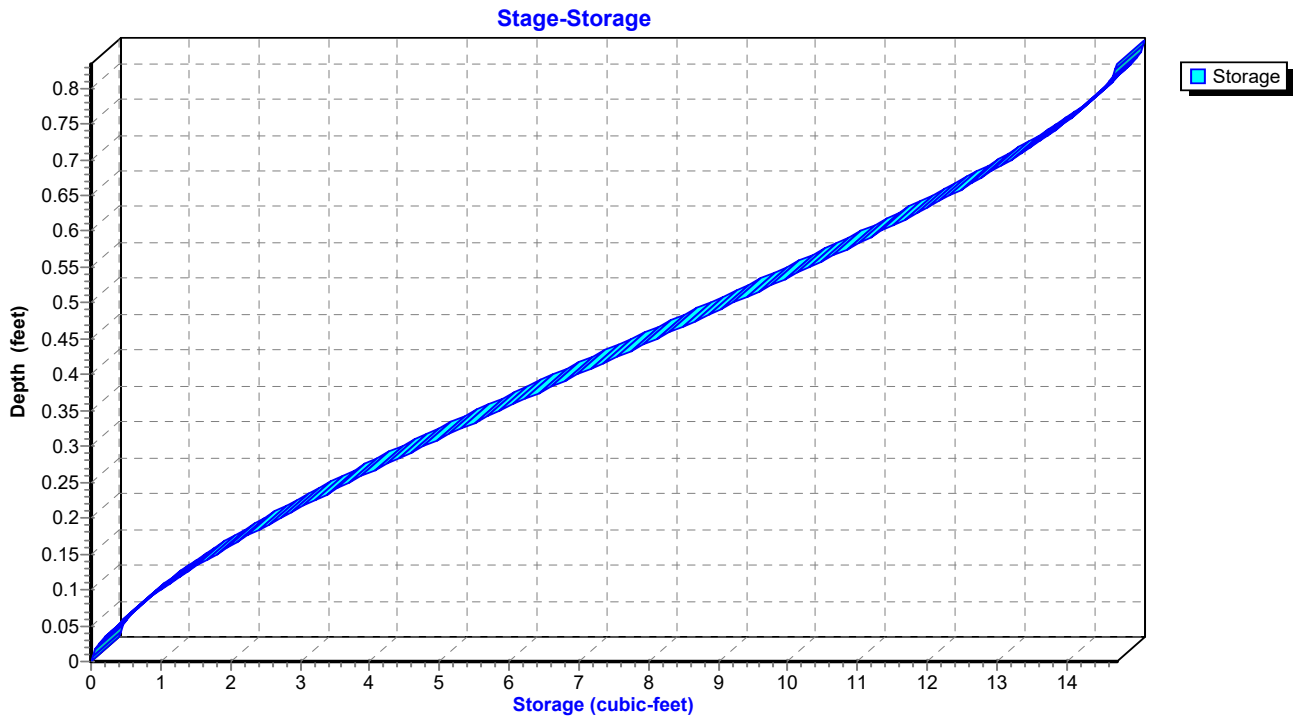
**Reach R10: 10" Culvert Pond Discharge**



**Reach R10: 10" Culvert Pond Discharge**



### Reach R10: 10" Culvert Pond Discharge



**Hydrograph for Reach R10: 10" Culvert Pond Discharge**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 329.33              | 0.00             |
| 2.50            | 0.00            | 0                       | 329.33              | 0.00             |
| 5.00            | 0.00            | 0                       | 329.33              | 0.00             |
| 7.50            | 0.00            | 0                       | 329.33              | 0.00             |
| 10.00           | 0.00            | 0                       | 329.35              | 0.00             |
| 12.50           | <b>0.61</b>     | <b>4</b>                | <b>329.60</b>       | <b>0.61</b>      |
| 15.00           | <b>0.23</b>     | <b>2</b>                | <b>329.50</b>       | <b>0.23</b>      |
| 17.50           | 0.11            | 1                       | 329.44              | 0.11             |
| 20.00           | 0.07            | 1                       | 329.43              | 0.07             |
| 22.50           | 0.06            | 1                       | 329.42              | 0.06             |
| 25.00           | 0.04            | 1                       | 329.40              | 0.04             |
| 27.50           | 0.02            | 0                       | 329.39              | 0.02             |
| 30.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 32.50           | 0.02            | 0                       | 329.38              | 0.02             |
| 35.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 37.50           | 0.02            | 0                       | 329.38              | 0.02             |
| 40.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 42.50           | 0.02            | 0                       | 329.38              | 0.02             |
| 45.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 47.50           | 0.01            | 0                       | 329.37              | 0.01             |
| 50.00           | 0.01            | 0                       | 329.37              | 0.01             |
| 52.50           | 0.01            | 0                       | 329.37              | 0.01             |
| 55.00           | 0.01            | 0                       | 329.37              | 0.01             |
| 57.50           | 0.01            | 0                       | 329.37              | 0.01             |
| 60.00           | 0.01            | 0                       | 329.36              | 0.01             |
| 62.50           | 0.01            | 0                       | 329.36              | 0.01             |
| 65.00           | 0.00            | 0                       | 329.36              | 0.00             |
| 67.50           | 0.00            | 0                       | 329.35              | 0.00             |
| 70.00           | 0.00            | 0                       | 329.35              | 0.00             |
| 72.50           | 0.00            | 0                       | 329.35              | 0.00             |
| 75.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 77.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 80.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 82.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 85.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 87.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 90.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 92.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 95.00           | 0.00            | 0                       | 329.33              | 0.00             |
| 97.50           | 0.00            | 0                       | 329.33              | 0.00             |
| 100.00          | 0.00            | 0                       | 329.33              | 0.00             |

**Stage-Discharge for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 329.33              | 0.00                 | 0.00               | 329.86              | 5.26                 | 1.92               |
| 329.34              | 0.48                 | 0.00               | 329.87              | 5.28                 | 1.98               |
| 329.35              | 0.76                 | 0.00               | 329.88              | 5.31                 | 2.03               |
| 329.36              | 1.00                 | 0.01               | 329.89              | 5.34                 | 2.08               |
| 329.37              | 1.20                 | 0.01               | 329.90              | 5.36                 | 2.13               |
| 329.38              | 1.39                 | 0.02               | 329.91              | 5.38                 | 2.18               |
| 329.39              | 1.56                 | 0.03               | 329.92              | 5.40                 | 2.23               |
| 329.40              | 1.73                 | 0.04               | 329.93              | 5.42                 | 2.28               |
| 329.41              | 1.88                 | 0.05               | 329.94              | 5.43                 | 2.32               |
| 329.42              | 2.03                 | 0.06               | 329.95              | 5.45                 | 2.37               |
| 329.43              | 2.16                 | 0.08               | 329.96              | 5.46                 | 2.41               |
| 329.44              | 2.30                 | 0.10               | 329.97              | 5.47                 | 2.46               |
| 329.45              | 2.42                 | 0.12               | 329.98              | 5.48                 | 2.50               |
| 329.46              | 2.55                 | 0.14               | 329.99              | 5.48                 | 2.54               |
| 329.47              | 2.66                 | 0.16               | 330.00              | 5.48                 | 2.58               |
| 329.48              | 2.78                 | 0.19               | 330.01              | <b>5.48</b>          | 2.61               |
| 329.49              | 2.89                 | 0.21               | 330.02              | 5.48                 | 2.65               |
| 329.50              | 2.99                 | 0.24               | 330.03              | 5.48                 | 2.68               |
| 329.51              | 3.10                 | 0.27               | 330.04              | 5.47                 | 2.71               |
| 329.52              | 3.20                 | 0.30               | 330.05              | 5.46                 | 2.74               |
| 329.53              | 3.29                 | 0.33               | 330.06              | 5.45                 | 2.76               |
| 329.54              | 3.39                 | 0.37               | 330.07              | 5.43                 | 2.78               |
| 329.55              | 3.48                 | 0.40               | 330.08              | 5.41                 | 2.80               |
| 329.56              | 3.57                 | 0.44               | 330.09              | 5.38                 | 2.81               |
| 329.57              | 3.65                 | 0.47               | 330.10              | 5.35                 | 2.82               |
| 329.58              | 3.73                 | 0.51               | 330.11              | 5.32                 | <b>2.82</b>        |
| 329.59              | 3.81                 | 0.55               | 330.12              | 5.28                 | 2.82               |
| 329.60              | 3.89                 | 0.60               | 330.13              | 5.22                 | 2.81               |
| 329.61              | 3.97                 | 0.64               | 330.14              | 5.16                 | 2.79               |
| 329.62              | 4.04                 | 0.68               | 330.15              | 5.07                 | 2.76               |
| 329.63              | 4.12                 | 0.73               | 330.16              | 4.90                 | 2.67               |
| 329.64              | 4.19                 | 0.77               |                     |                      |                    |
| 329.65              | 4.25                 | 0.82               |                     |                      |                    |
| 329.66              | 4.32                 | 0.87               |                     |                      |                    |
| 329.67              | 4.38                 | 0.92               |                     |                      |                    |
| 329.68              | 4.44                 | 0.97               |                     |                      |                    |
| 329.69              | 4.50                 | 1.02               |                     |                      |                    |
| 329.70              | 4.56                 | 1.07               |                     |                      |                    |
| 329.71              | 4.62                 | 1.12               |                     |                      |                    |
| 329.72              | 4.67                 | 1.17               |                     |                      |                    |
| 329.73              | 4.73                 | 1.22               |                     |                      |                    |
| 329.74              | 4.78                 | 1.28               |                     |                      |                    |
| 329.75              | 4.83                 | 1.33               |                     |                      |                    |
| 329.76              | 4.87                 | 1.38               |                     |                      |                    |
| 329.77              | 4.92                 | 1.44               |                     |                      |                    |
| 329.78              | 4.96                 | 1.49               |                     |                      |                    |
| 329.79              | 5.01                 | 1.55               |                     |                      |                    |
| 329.80              | 5.05                 | 1.60               |                     |                      |                    |
| 329.81              | 5.09                 | 1.65               |                     |                      |                    |
| 329.82              | 5.12                 | 1.71               |                     |                      |                    |
| 329.83              | 5.16                 | 1.76               |                     |                      |                    |
| 329.84              | 5.19                 | 1.82               |                     |                      |                    |
| 329.85              | 5.23                 | 1.87               |                     |                      |                    |

**Stage-Area-Storage for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 329.33              | 0.0                 | 0                       | 329.86              | 0.4                 | 10                      |
| 329.34              | 0.0                 | 0                       | 329.87              | 0.4                 | 10                      |
| 329.35              | 0.0                 | 0                       | 329.88              | 0.4                 | 10                      |
| 329.36              | 0.0                 | 0                       | 329.89              | 0.4                 | 11                      |
| 329.37              | 0.0                 | 0                       | 329.90              | 0.4                 | 11                      |
| 329.38              | 0.0                 | 0                       | 329.91              | 0.4                 | 11                      |
| 329.39              | 0.0                 | 0                       | 329.92              | 0.4                 | 11                      |
| 329.40              | 0.0                 | 1                       | 329.93              | 0.4                 | 11                      |
| 329.41              | 0.0                 | 1                       | 329.94              | 0.4                 | 12                      |
| 329.42              | 0.0                 | 1                       | 329.95              | 0.4                 | 12                      |
| 329.43              | 0.0                 | 1                       | 329.96              | 0.4                 | 12                      |
| 329.44              | 0.0                 | 1                       | 329.97              | 0.4                 | 12                      |
| 329.45              | 0.0                 | 1                       | 329.98              | 0.5                 | 12                      |
| 329.46              | 0.1                 | 1                       | 329.99              | 0.5                 | 13                      |
| 329.47              | 0.1                 | 2                       | 330.00              | 0.5                 | 13                      |
| 329.48              | 0.1                 | 2                       | 330.01              | 0.5                 | 13                      |
| 329.49              | 0.1                 | 2                       | 330.02              | 0.5                 | 13                      |
| 329.50              | 0.1                 | 2                       | 330.03              | 0.5                 | 13                      |
| 329.51              | 0.1                 | 2                       | 330.04              | 0.5                 | 13                      |
| 329.52              | 0.1                 | 3                       | 330.05              | 0.5                 | 14                      |
| 329.53              | 0.1                 | 3                       | 330.06              | 0.5                 | 14                      |
| 329.54              | 0.1                 | 3                       | 330.07              | 0.5                 | 14                      |
| 329.55              | 0.1                 | 3                       | 330.08              | 0.5                 | 14                      |
| 329.56              | 0.1                 | 3                       | 330.09              | 0.5                 | 14                      |
| 329.57              | 0.1                 | 4                       | 330.10              | 0.5                 | 14                      |
| 329.58              | 0.1                 | 4                       | 330.11              | 0.5                 | 14                      |
| 329.59              | 0.1                 | 4                       | 330.12              | 0.5                 | 14                      |
| 329.60              | 0.2                 | 4                       | 330.13              | 0.5                 | 15                      |
| 329.61              | 0.2                 | 4                       | 330.14              | 0.5                 | 15                      |
| 329.62              | 0.2                 | 5                       | 330.15              | 0.5                 | 15                      |
| 329.63              | 0.2                 | 5                       | 330.16              | <b>0.5</b>          | <b>15</b>               |
| 329.64              | 0.2                 | 5                       |                     |                     |                         |
| 329.65              | 0.2                 | 5                       |                     |                     |                         |
| 329.66              | 0.2                 | 5                       |                     |                     |                         |
| 329.67              | 0.2                 | 6                       |                     |                     |                         |
| 329.68              | 0.2                 | 6                       |                     |                     |                         |
| 329.69              | 0.2                 | 6                       |                     |                     |                         |
| 329.70              | 0.2                 | 6                       |                     |                     |                         |
| 329.71              | 0.2                 | 7                       |                     |                     |                         |
| 329.72              | 0.3                 | 7                       |                     |                     |                         |
| 329.73              | 0.3                 | 7                       |                     |                     |                         |
| 329.74              | 0.3                 | 7                       |                     |                     |                         |
| 329.75              | 0.3                 | 7                       |                     |                     |                         |
| 329.76              | 0.3                 | 8                       |                     |                     |                         |
| 329.77              | 0.3                 | 8                       |                     |                     |                         |
| 329.78              | 0.3                 | 8                       |                     |                     |                         |
| 329.79              | 0.3                 | 8                       |                     |                     |                         |
| 329.80              | 0.3                 | 9                       |                     |                     |                         |
| 329.81              | 0.3                 | 9                       |                     |                     |                         |
| 329.82              | 0.3                 | 9                       |                     |                     |                         |
| 329.83              | 0.3                 | 9                       |                     |                     |                         |
| 329.84              | 0.3                 | 9                       |                     |                     |                         |
| 329.85              | 0.4                 | 10                      |                     |                     |                         |

**Summary for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.35" for 10-yr event  
 Inflow = 1.24 cfs @ 12.52 hrs, Volume= 0.298 af  
 Outflow = 1.22 cfs @ 12.57 hrs, Volume= 0.298 af, Atten= 1%, Lag= 2.9 min  
 Routed to Pond 4P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.16 fps, Min. Travel Time= 3.9 min  
 Avg. Velocity = 0.58 fps, Avg. Travel Time= 7.7 min

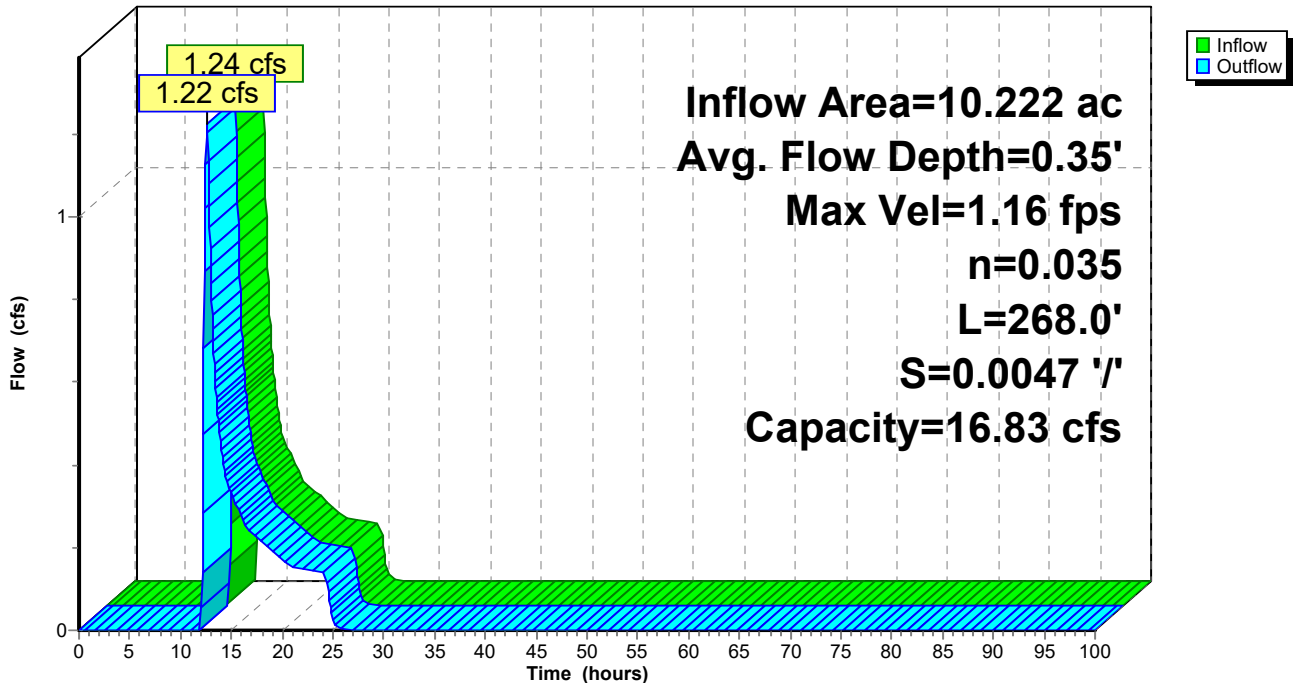
Peak Storage= 283 cf @ 12.57 hrs  
 Average Depth at Peak Storage= 0.35' , Surface Width= 4.08'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 16.83 cfs

2.00' x 1.25' deep channel, n= 0.035  
 Side Slope Z-value= 3.0 '/ Top Width= 9.50'  
 Length= 268.0' Slope= 0.0047 '/  
 Inlet Invert= 341.00', Outlet Invert= 339.75'



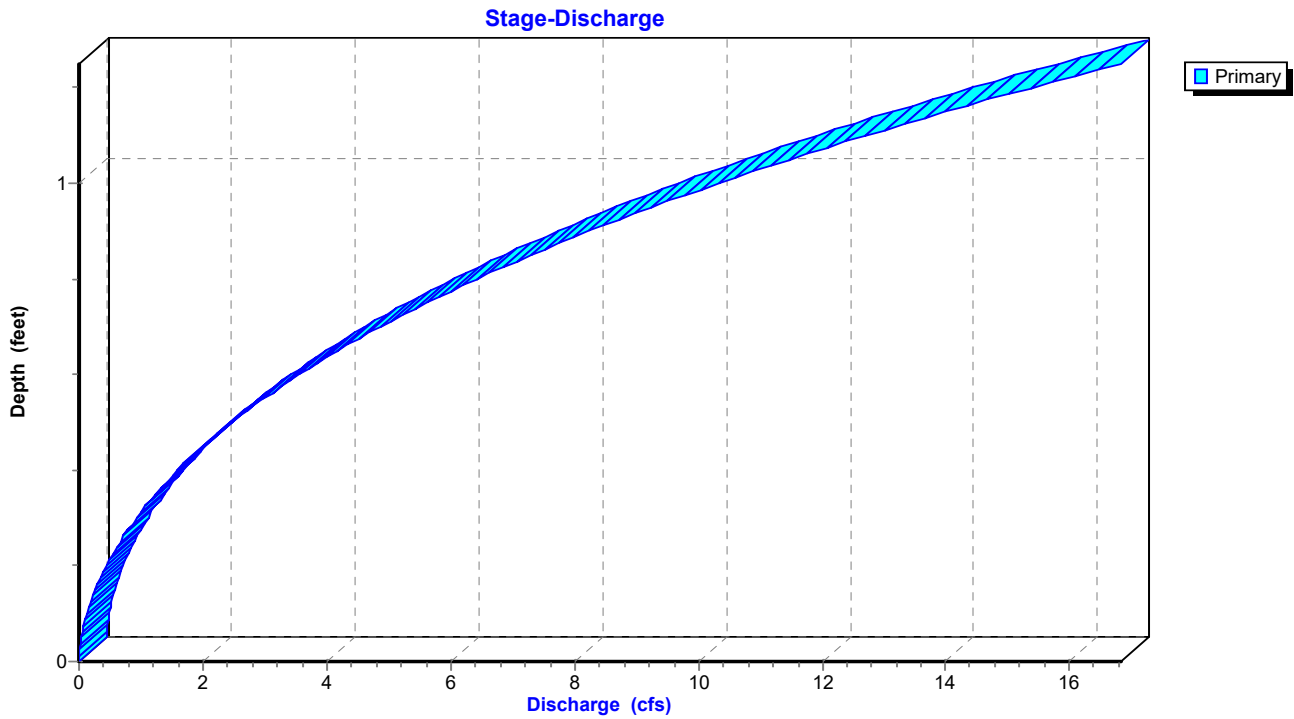
**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Hydrograph

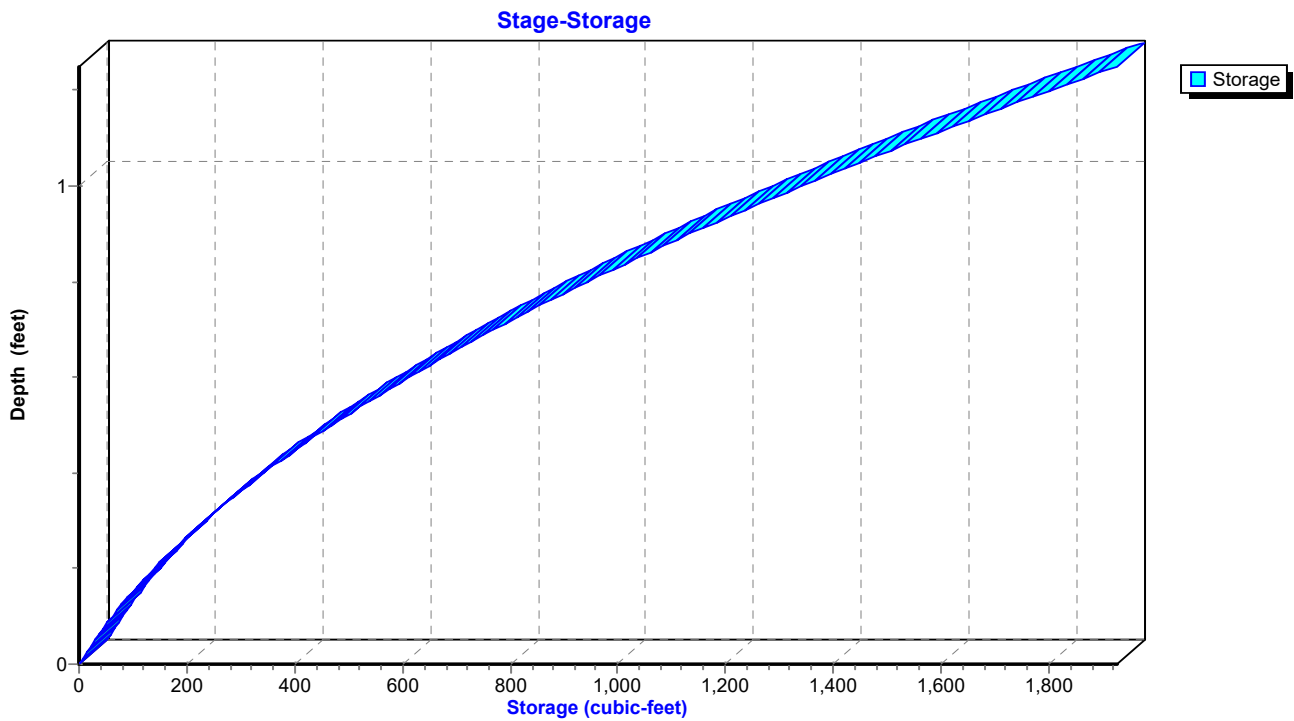




### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



**Hydrograph for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 341.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 341.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 341.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 341.00           | 0.00          |
| 10.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 12.50        | <b>1.23</b>  | <b>278</b>           | <b>341.34</b>    | <b>1.19</b>   |
| 15.00        | 0.32         | <b>113</b>           | <b>341.17</b>    | <b>0.33</b>   |
| 17.50        | 0.22         | 88                   | 341.14           | 0.22          |
| 20.00        | 0.17         | 73                   | 341.12           | 0.17          |
| 22.50        | 0.15         | 66                   | 341.11           | 0.15          |
| 25.00        | 0.01         | 20                   | 341.04           | 0.02          |
| 27.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 341.00           | 0.00          |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Stage-Discharge for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 341.00              | 0.00                 | 0.00               | 341.53              | 1.46                 | 2.77               | 342.06              | 2.13                 | 11.71              |
| 341.01              | 0.12                 | 0.00               | 341.54              | 1.47                 | 2.87               | 342.07              | 2.14                 | 11.95              |
| 341.02              | 0.21                 | 0.01               | 341.55              | 1.48                 | 2.98               | 342.08              | 2.16                 | 12.20              |
| 341.03              | 0.27                 | 0.02               | 341.56              | 1.50                 | 3.09               | 342.09              | 2.17                 | 12.45              |
| 341.04              | 0.33                 | 0.03               | 341.57              | 1.51                 | 3.20               | 342.10              | 2.18                 | 12.70              |
| 341.05              | 0.37                 | 0.04               | 341.58              | 1.53                 | 3.32               | 342.11              | 2.19                 | 12.95              |
| 341.06              | 0.42                 | 0.06               | 341.59              | 1.54                 | 3.43               | 342.12              | 2.20                 | 13.21              |
| 341.07              | 0.46                 | 0.07               | 341.60              | 1.56                 | 3.55               | 342.13              | 2.21                 | 13.47              |
| 341.08              | 0.50                 | 0.09               | 341.61              | 1.57                 | 3.67               | 342.14              | 2.22                 | 13.73              |
| 341.09              | 0.54                 | 0.11               | 341.62              | 1.59                 | 3.79               | 342.15              | 2.23                 | 14.00              |
| 341.10              | 0.57                 | 0.13               | 341.63              | 1.60                 | 3.92               | 342.16              | 2.24                 | 14.27              |
| 341.11              | 0.60                 | 0.16               | 341.64              | 1.61                 | 4.05               | 342.17              | 2.26                 | 14.54              |
| 341.12              | 0.64                 | 0.18               | 341.65              | 1.63                 | 4.18               | 342.18              | 2.27                 | 14.81              |
| 341.13              | 0.67                 | 0.21               | 341.66              | 1.64                 | 4.31               | 342.19              | 2.28                 | 15.09              |
| 341.14              | 0.70                 | 0.24               | 341.67              | 1.65                 | 4.44               | 342.20              | 2.29                 | 15.37              |
| 341.15              | 0.72                 | 0.27               | 341.68              | 1.67                 | 4.58               | 342.21              | 2.30                 | 15.66              |
| 341.16              | 0.75                 | 0.30               | 341.69              | 1.68                 | 4.72               | 342.22              | 2.31                 | 15.95              |
| 341.17              | 0.78                 | 0.33               | 341.70              | 1.69                 | 4.86               | 342.23              | 2.32                 | 16.24              |
| 341.18              | 0.80                 | 0.37               | 341.71              | 1.71                 | 5.01               | 342.24              | 2.33                 | 16.53              |
| 341.19              | 0.83                 | 0.40               | 341.72              | 1.72                 | 5.15               | 342.25              | <b>2.34</b>          | <b>16.83</b>       |
| 341.20              | 0.85                 | 0.44               | 341.73              | 1.73                 | 5.30               |                     |                      |                    |
| 341.21              | 0.88                 | 0.48               | 341.74              | 1.75                 | 5.45               |                     |                      |                    |
| 341.22              | 0.90                 | 0.53               | 341.75              | 1.76                 | 5.61               |                     |                      |                    |
| 341.23              | 0.92                 | 0.57               | 341.76              | 1.77                 | 5.77               |                     |                      |                    |
| 341.24              | 0.94                 | 0.62               | 341.77              | 1.79                 | 5.92               |                     |                      |                    |
| 341.25              | 0.96                 | 0.66               | 341.78              | 1.80                 | 6.09               |                     |                      |                    |
| 341.26              | 0.99                 | 0.71               | 341.79              | 1.81                 | 6.25               |                     |                      |                    |
| 341.27              | 1.01                 | 0.76               | 341.80              | 1.82                 | 6.42               |                     |                      |                    |
| 341.28              | 1.03                 | 0.82               | 341.81              | 1.84                 | 6.59               |                     |                      |                    |
| 341.29              | 1.05                 | 0.87               | 341.82              | 1.85                 | 6.76               |                     |                      |                    |
| 341.30              | 1.07                 | 0.93               | 341.83              | 1.86                 | 6.93               |                     |                      |                    |
| 341.31              | 1.09                 | 0.99               | 341.84              | 1.87                 | 7.11               |                     |                      |                    |
| 341.32              | 1.11                 | 1.05               | 341.85              | 1.89                 | 7.29               |                     |                      |                    |
| 341.33              | 1.12                 | 1.11               | 341.86              | 1.90                 | 7.48               |                     |                      |                    |
| 341.34              | 1.14                 | 1.17               | 341.87              | 1.91                 | 7.66               |                     |                      |                    |
| 341.35              | 1.16                 | 1.24               | 341.88              | 1.92                 | 7.85               |                     |                      |                    |
| 341.36              | 1.18                 | 1.31               | 341.89              | 1.93                 | 8.04               |                     |                      |                    |
| 341.37              | 1.20                 | 1.38               | 341.90              | 1.95                 | 8.23               |                     |                      |                    |
| 341.38              | 1.21                 | 1.45               | 341.91              | 1.96                 | 8.43               |                     |                      |                    |
| 341.39              | 1.23                 | 1.52               | 341.92              | 1.97                 | 8.63               |                     |                      |                    |
| 341.40              | 1.25                 | 1.60               | 341.93              | 1.98                 | 8.83               |                     |                      |                    |
| 341.41              | 1.27                 | 1.68               | 341.94              | 1.99                 | 9.03               |                     |                      |                    |
| 341.42              | 1.28                 | 1.76               | 341.95              | 2.01                 | 9.24               |                     |                      |                    |
| 341.43              | 1.30                 | 1.84               | 341.96              | 2.02                 | 9.45               |                     |                      |                    |
| 341.44              | 1.32                 | 1.92               | 341.97              | 2.03                 | 9.67               |                     |                      |                    |
| 341.45              | 1.33                 | 2.01               | 341.98              | 2.04                 | 9.88               |                     |                      |                    |
| 341.46              | 1.35                 | 2.09               | 341.99              | 2.05                 | 10.10              |                     |                      |                    |
| 341.47              | 1.36                 | 2.18               | 342.00              | 2.06                 | 10.32              |                     |                      |                    |
| 341.48              | 1.38                 | 2.28               | 342.01              | 2.08                 | 10.55              |                     |                      |                    |
| 341.49              | 1.39                 | 2.37               | 342.02              | 2.09                 | 10.77              |                     |                      |                    |
| 341.50              | 1.41                 | 2.47               | 342.03              | 2.10                 | 11.00              |                     |                      |                    |
| 341.51              | 1.42                 | 2.57               | 342.04              | 2.11                 | 11.24              |                     |                      |                    |
| 341.52              | 1.44                 | 2.67               | 342.05              | 2.12                 | 11.47              |                     |                      |                    |

**Stage-Area-Storage for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 341.00              | 0.0                 | 0                       | 342.06              | 5.5                 | 1,472                   |
| 341.02              | 0.0                 | 11                      | 342.08              | 5.7                 | 1,517                   |
| 341.04              | 0.1                 | 23                      | 342.10              | 5.8                 | 1,562                   |
| 341.06              | 0.1                 | 35                      | 342.12              | 6.0                 | 1,609                   |
| 341.08              | 0.2                 | 48                      | 342.14              | 6.2                 | 1,656                   |
| 341.10              | 0.2                 | 62                      | 342.16              | 6.4                 | 1,704                   |
| 341.12              | 0.3                 | 76                      | 342.18              | 6.5                 | 1,752                   |
| 341.14              | 0.3                 | 91                      | 342.20              | 6.7                 | 1,801                   |
| 341.16              | 0.4                 | 106                     | 342.22              | 6.9                 | 1,851                   |
| 341.18              | 0.5                 | 123                     | 342.24              | <b>7.1</b>          | <b>1,901</b>            |
| 341.20              | 0.5                 | 139                     |                     |                     |                         |
| 341.22              | 0.6                 | 157                     |                     |                     |                         |
| 341.24              | 0.7                 | 175                     |                     |                     |                         |
| 341.26              | 0.7                 | 194                     |                     |                     |                         |
| 341.28              | 0.8                 | 213                     |                     |                     |                         |
| 341.30              | 0.9                 | 233                     |                     |                     |                         |
| 341.32              | 0.9                 | 254                     |                     |                     |                         |
| 341.34              | 1.0                 | 275                     |                     |                     |                         |
| 341.36              | 1.1                 | 297                     |                     |                     |                         |
| 341.38              | 1.2                 | 320                     |                     |                     |                         |
| 341.40              | 1.3                 | 343                     |                     |                     |                         |
| 341.42              | 1.4                 | 367                     |                     |                     |                         |
| 341.44              | 1.5                 | 392                     |                     |                     |                         |
| 341.46              | 1.6                 | 417                     |                     |                     |                         |
| 341.48              | 1.7                 | 443                     |                     |                     |                         |
| 341.50              | 1.8                 | 469                     |                     |                     |                         |
| 341.52              | 1.9                 | 496                     |                     |                     |                         |
| 341.54              | 2.0                 | 524                     |                     |                     |                         |
| 341.56              | 2.1                 | 552                     |                     |                     |                         |
| 341.58              | 2.2                 | 581                     |                     |                     |                         |
| 341.60              | 2.3                 | 611                     |                     |                     |                         |
| 341.62              | 2.4                 | 641                     |                     |                     |                         |
| 341.64              | 2.5                 | 672                     |                     |                     |                         |
| 341.66              | 2.6                 | 704                     |                     |                     |                         |
| 341.68              | 2.7                 | 736                     |                     |                     |                         |
| 341.70              | 2.9                 | 769                     |                     |                     |                         |
| 341.72              | 3.0                 | 803                     |                     |                     |                         |
| 341.74              | 3.1                 | 837                     |                     |                     |                         |
| 341.76              | 3.3                 | 872                     |                     |                     |                         |
| 341.78              | 3.4                 | 907                     |                     |                     |                         |
| 341.80              | 3.5                 | 943                     |                     |                     |                         |
| 341.82              | 3.7                 | 980                     |                     |                     |                         |
| 341.84              | 3.8                 | 1,018                   |                     |                     |                         |
| 341.86              | 3.9                 | 1,056                   |                     |                     |                         |
| 341.88              | 4.1                 | 1,094                   |                     |                     |                         |
| 341.90              | 4.2                 | 1,134                   |                     |                     |                         |
| 341.92              | 4.4                 | 1,174                   |                     |                     |                         |
| 341.94              | 4.5                 | 1,214                   |                     |                     |                         |
| 341.96              | 4.7                 | 1,256                   |                     |                     |                         |
| 341.98              | 4.8                 | 1,297                   |                     |                     |                         |
| 342.00              | 5.0                 | 1,340                   |                     |                     |                         |
| 342.02              | 5.2                 | 1,383                   |                     |                     |                         |
| 342.04              | 5.3                 | 1,427                   |                     |                     |                         |

### Summary for Reach R12: 12" Culvert Pond Discharge

[52] Hint: Inlet/Outlet conditions not evaluated

[55] Hint: Peak inflow is 143% of Manning's capacity

[76] Warning: Detained 0.015 af (Pond w/culvert advised)

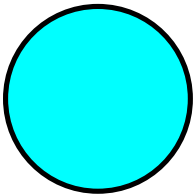
[80] Warning: Exceeded Pond 4P by 0.01' @ 0.00 hrs (0.00 cfs 0.005 af)

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth > 0.35" for 10-yr event  
Inflow = 0.47 cfs @ 13.86 hrs, Volume= 0.297 af  
Outflow = 0.35 cfs @ 13.29 hrs, Volume= 0.297 af, Atten= 25%, Lag= 0.0 min  
Routed to Link AP3 : Analysis Point 3

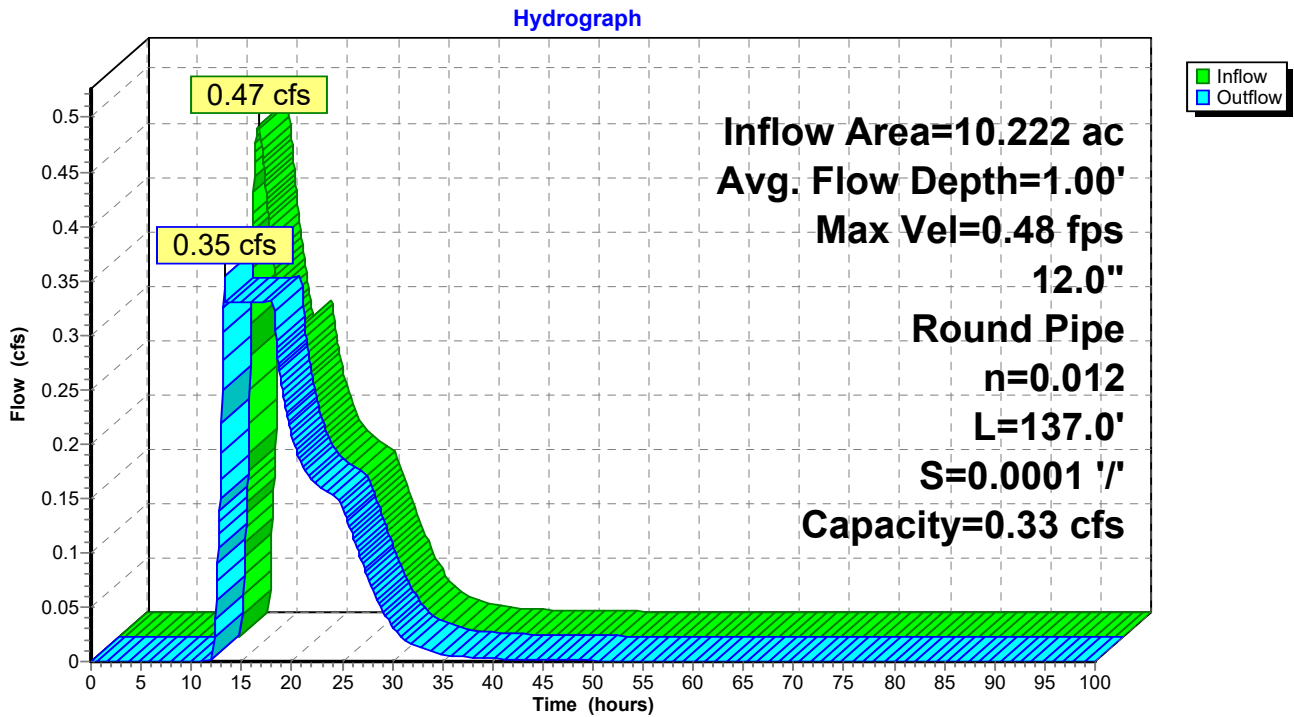
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.48 fps, Min. Travel Time= 4.8 min  
Avg. Velocity = 0.15 fps, Avg. Travel Time= 15.5 min

Peak Storage= 108 cf @ 13.35 hrs  
Average Depth at Peak Storage= 1.00'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 0.33 cfs

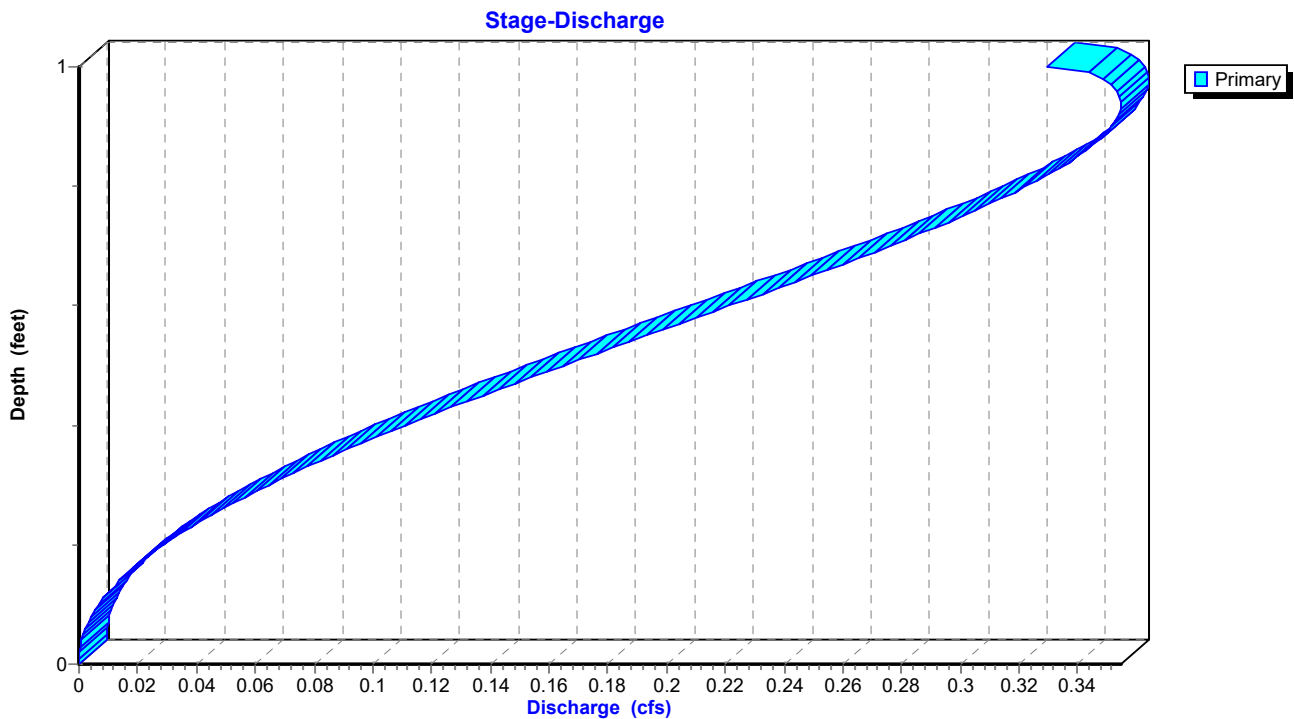
12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 137.0' Slope= 0.0001 '/'  
Inlet Invert= 337.01', Outlet Invert= 337.00'



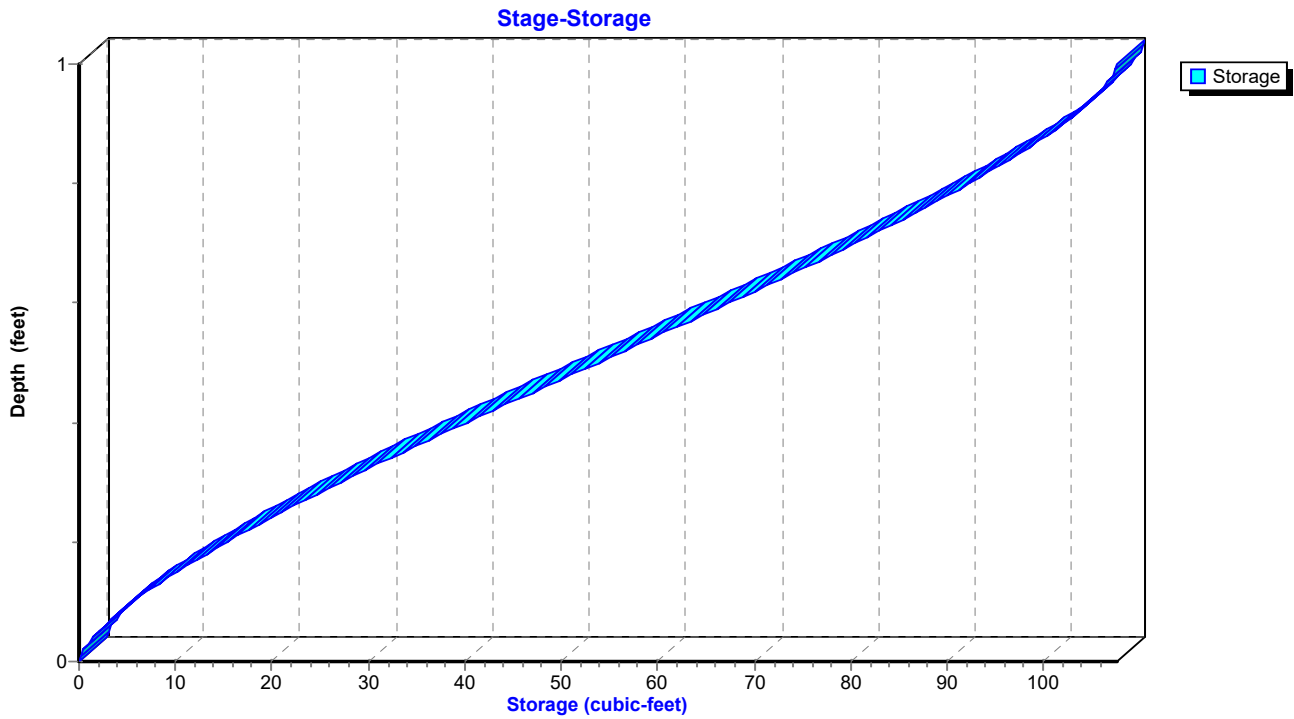
### Reach R12: 12" Culvert Pond Discharge



### Reach R12: 12" Culvert Pond Discharge



### Reach R12: 12" Culvert Pond Discharge



**Hydrograph for Reach R12: 12" Culvert Pond Discharge**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 337.01              | 0.00             |
| 2.50            | 0.00            | 0                       | 337.01              | 0.00             |
| 5.00            | 0.00            | 0                       | 337.01              | 0.00             |
| 7.50            | 0.00            | 0                       | 337.01              | 0.00             |
| 10.00           | 0.00            | 0                       | 337.01              | 0.00             |
| 12.50           | <b>0.09</b>     | <b>25</b>               | <b>337.29</b>       | <b>0.06</b>      |
| 15.00           | <b>0.37</b>     | <b>108</b>              | <b>338.01</b>       | <b>0.33</b>      |
| 17.50           | 0.23            | 108                     | 338.01              | 0.33             |
| 20.00           | 0.21            | 64                      | 337.59              | 0.21             |
| 22.50           | 0.16            | 53                      | 337.51              | 0.16             |
| 25.00           | 0.14            | 48                      | 337.47              | 0.14             |
| 27.50           | 0.08            | 31                      | 337.34              | 0.08             |
| 30.00           | 0.03            | 17                      | 337.22              | 0.03             |
| 32.50           | 0.01            | 9                       | 337.15              | 0.01             |
| 35.00           | 0.01            | 5                       | 337.11              | 0.01             |
| 37.50           | 0.00            | 4                       | 337.09              | 0.00             |
| 40.00           | 0.00            | 3                       | 337.07              | 0.00             |
| 42.50           | 0.00            | 2                       | 337.06              | 0.00             |
| 45.00           | 0.00            | 2                       | 337.06              | 0.00             |
| 47.50           | 0.00            | 1                       | 337.05              | 0.00             |
| 50.00           | 0.00            | 1                       | 337.05              | 0.00             |
| 52.50           | 0.00            | 1                       | 337.04              | 0.00             |
| 55.00           | 0.00            | 1                       | 337.04              | 0.00             |
| 57.50           | 0.00            | 1                       | 337.04              | 0.00             |
| 60.00           | 0.00            | 1                       | 337.04              | 0.00             |
| 62.50           | 0.00            | 1                       | 337.03              | 0.00             |
| 65.00           | 0.00            | 1                       | 337.03              | 0.00             |
| 67.50           | 0.00            | 1                       | 337.03              | 0.00             |
| 70.00           | 0.00            | 1                       | 337.03              | 0.00             |
| 72.50           | 0.00            | 0                       | 337.03              | 0.00             |
| 75.00           | 0.00            | 0                       | 337.03              | 0.00             |
| 77.50           | 0.00            | 0                       | 337.03              | 0.00             |
| 80.00           | 0.00            | 0                       | 337.03              | 0.00             |
| 82.50           | 0.00            | 0                       | 337.03              | 0.00             |
| 85.00           | 0.00            | 0                       | 337.02              | 0.00             |
| 87.50           | 0.00            | 0                       | 337.02              | 0.00             |
| 90.00           | 0.00            | 0                       | 337.02              | 0.00             |
| 92.50           | 0.00            | 0                       | 337.02              | 0.00             |
| 95.00           | 0.00            | 0                       | 337.02              | 0.00             |
| 97.50           | 0.00            | 0                       | 337.02              | 0.00             |
| 100.00          | 0.00            | 0                       | 337.02              | 0.00             |



**Stage-Discharge for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.01              | 0.00                 | 0.00               | 337.54              | 0.43                 | 0.18               |
| 337.02              | 0.04                 | 0.00               | 337.55              | 0.43                 | 0.19               |
| 337.03              | 0.06                 | 0.00               | 337.56              | 0.44                 | 0.19               |
| 337.04              | 0.08                 | 0.00               | 337.57              | 0.44                 | 0.20               |
| 337.05              | 0.09                 | 0.00               | 337.58              | 0.44                 | 0.20               |
| 337.06              | 0.11                 | 0.00               | 337.59              | 0.45                 | 0.21               |
| 337.07              | 0.12                 | 0.00               | 337.60              | 0.45                 | 0.22               |
| 337.08              | 0.13                 | 0.00               | 337.61              | 0.45                 | 0.22               |
| 337.09              | 0.15                 | 0.00               | 337.62              | 0.45                 | 0.23               |
| 337.10              | 0.16                 | 0.01               | 337.63              | 0.46                 | 0.23               |
| 337.11              | 0.17                 | 0.01               | 337.64              | 0.46                 | 0.24               |
| 337.12              | 0.18                 | 0.01               | 337.65              | 0.46                 | 0.24               |
| 337.13              | 0.19                 | 0.01               | 337.66              | 0.46                 | 0.25               |
| 337.14              | 0.20                 | 0.01               | 337.67              | 0.46                 | 0.25               |
| 337.15              | 0.21                 | 0.01               | 337.68              | 0.47                 | 0.26               |
| 337.16              | 0.22                 | 0.02               | 337.69              | 0.47                 | 0.27               |
| 337.17              | 0.23                 | 0.02               | 337.70              | 0.47                 | 0.27               |
| 337.18              | 0.23                 | 0.02               | 337.71              | 0.47                 | 0.28               |
| 337.19              | 0.24                 | 0.02               | 337.72              | 0.47                 | 0.28               |
| 337.20              | 0.25                 | 0.03               | 337.73              | 0.47                 | 0.29               |
| 337.21              | 0.26                 | 0.03               | 337.74              | 0.47                 | 0.29               |
| 337.22              | 0.27                 | 0.03               | 337.75              | 0.47                 | 0.30               |
| 337.23              | 0.27                 | 0.03               | 337.76              | 0.48                 | 0.30               |
| 337.24              | 0.28                 | 0.04               | 337.77              | 0.48                 | 0.31               |
| 337.25              | 0.29                 | 0.04               | 337.78              | 0.48                 | 0.31               |
| 337.26              | 0.29                 | 0.05               | 337.79              | 0.48                 | 0.31               |
| 337.27              | 0.30                 | 0.05               | 337.80              | 0.48                 | 0.32               |
| 337.28              | 0.31                 | 0.05               | 337.81              | 0.48                 | 0.32               |
| 337.29              | 0.31                 | 0.06               | 337.82              | <b>0.48</b>          | 0.33               |
| 337.30              | 0.32                 | 0.06               | 337.83              | 0.48                 | 0.33               |
| 337.31              | 0.33                 | 0.06               | 337.84              | 0.48                 | 0.33               |
| 337.32              | 0.33                 | 0.07               | 337.85              | 0.48                 | 0.34               |
| 337.33              | 0.34                 | 0.07               | 337.86              | 0.48                 | 0.34               |
| 337.34              | 0.34                 | 0.08               | 337.87              | 0.48                 | 0.34               |
| 337.35              | 0.35                 | 0.08               | 337.88              | 0.48                 | 0.35               |
| 337.36              | 0.35                 | 0.09               | 337.89              | 0.47                 | 0.35               |
| 337.37              | 0.36                 | 0.09               | 337.90              | 0.47                 | 0.35               |
| 337.38              | 0.36                 | 0.10               | 337.91              | 0.47                 | 0.35               |
| 337.39              | 0.37                 | 0.10               | 337.92              | 0.47                 | 0.35               |
| 337.40              | 0.37                 | 0.11               | 337.93              | 0.47                 | 0.35               |
| 337.41              | 0.38                 | 0.11               | 337.94              | 0.47                 | 0.35               |
| 337.42              | 0.38                 | 0.12               | 337.95              | 0.46                 | <b>0.35</b>        |
| 337.43              | 0.39                 | 0.12               | 337.96              | 0.46                 | 0.35               |
| 337.44              | 0.39                 | 0.13               | 337.97              | 0.46                 | 0.35               |
| 337.45              | 0.40                 | 0.13               | 337.98              | 0.45                 | 0.35               |
| 337.46              | 0.40                 | 0.14               | 337.99              | 0.45                 | 0.35               |
| 337.47              | 0.40                 | 0.14               | 338.00              | 0.44                 | 0.34               |
| 337.48              | 0.41                 | 0.15               | 338.01              | 0.42                 | 0.33               |
| 337.49              | 0.41                 | 0.15               |                     |                      |                    |
| 337.50              | 0.42                 | 0.16               |                     |                      |                    |
| 337.51              | 0.42                 | 0.16               |                     |                      |                    |
| 337.52              | 0.42                 | 0.17               |                     |                      |                    |
| 337.53              | 0.43                 | 0.18               |                     |                      |                    |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Stage-Area-Storage for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.01              | 0.0                 | 0                       | 337.54              | 0.4                 | 58                      |
| 337.02              | 0.0                 | 0                       | 337.55              | 0.4                 | 59                      |
| 337.03              | 0.0                 | 1                       | 337.56              | 0.4                 | 61                      |
| 337.04              | 0.0                 | 1                       | 337.57              | 0.5                 | 62                      |
| 337.05              | 0.0                 | 1                       | 337.58              | 0.5                 | 63                      |
| 337.06              | 0.0                 | 2                       | 337.59              | 0.5                 | 65                      |
| 337.07              | 0.0                 | 3                       | 337.60              | 0.5                 | 66                      |
| 337.08              | 0.0                 | 3                       | 337.61              | 0.5                 | 67                      |
| 337.09              | 0.0                 | 4                       | 337.62              | 0.5                 | 69                      |
| 337.10              | 0.0                 | 5                       | 337.63              | 0.5                 | 70                      |
| 337.11              | 0.0                 | 6                       | 337.64              | 0.5                 | 71                      |
| 337.12              | 0.0                 | 6                       | 337.65              | 0.5                 | 73                      |
| 337.13              | 0.1                 | 7                       | 337.66              | 0.5                 | 74                      |
| 337.14              | 0.1                 | 8                       | 337.67              | 0.5                 | 75                      |
| 337.15              | 0.1                 | 9                       | 337.68              | 0.6                 | 77                      |
| 337.16              | 0.1                 | 10                      | 337.69              | 0.6                 | 78                      |
| 337.17              | 0.1                 | 11                      | 337.70              | 0.6                 | 79                      |
| 337.18              | 0.1                 | 12                      | 337.71              | 0.6                 | 80                      |
| 337.19              | 0.1                 | 13                      | 337.72              | 0.6                 | 82                      |
| 337.20              | 0.1                 | 14                      | 337.73              | 0.6                 | 83                      |
| 337.21              | 0.1                 | 15                      | 337.74              | 0.6                 | 84                      |
| 337.22              | 0.1                 | 16                      | 337.75              | 0.6                 | 85                      |
| 337.23              | 0.1                 | 18                      | 337.76              | 0.6                 | 87                      |
| 337.24              | 0.1                 | 19                      | 337.77              | 0.6                 | 88                      |
| 337.25              | 0.1                 | 20                      | 337.78              | 0.6                 | 89                      |
| 337.26              | 0.2                 | 21                      | 337.79              | 0.7                 | 90                      |
| 337.27              | 0.2                 | 22                      | 337.80              | 0.7                 | 91                      |
| 337.28              | 0.2                 | 23                      | 337.81              | 0.7                 | 92                      |
| 337.29              | 0.2                 | 25                      | 337.82              | 0.7                 | 93                      |
| 337.30              | 0.2                 | 26                      | 337.83              | 0.7                 | 94                      |
| 337.31              | 0.2                 | 27                      | 337.84              | 0.7                 | 95                      |
| 337.32              | 0.2                 | 28                      | 337.85              | 0.7                 | 96                      |
| 337.33              | 0.2                 | 30                      | 337.86              | 0.7                 | 97                      |
| 337.34              | 0.2                 | 31                      | 337.87              | 0.7                 | 98                      |
| 337.35              | 0.2                 | 32                      | 337.88              | 0.7                 | 99                      |
| 337.36              | 0.2                 | 34                      | 337.89              | 0.7                 | 100                     |
| 337.37              | 0.3                 | 35                      | 337.90              | 0.7                 | 101                     |
| 337.38              | 0.3                 | 36                      | 337.91              | 0.7                 | 102                     |
| 337.39              | 0.3                 | 38                      | 337.92              | 0.8                 | 103                     |
| 337.40              | 0.3                 | 39                      | 337.93              | 0.8                 | 104                     |
| 337.41              | 0.3                 | 40                      | 337.94              | 0.8                 | 104                     |
| 337.42              | 0.3                 | 42                      | 337.95              | 0.8                 | 105                     |
| 337.43              | 0.3                 | 43                      | 337.96              | 0.8                 | 106                     |
| 337.44              | 0.3                 | 44                      | 337.97              | 0.8                 | 106                     |
| 337.45              | 0.3                 | 46                      | 337.98              | 0.8                 | 107                     |
| 337.46              | 0.3                 | 47                      | 337.99              | 0.8                 | 107                     |
| 337.47              | 0.4                 | 48                      | 338.00              | 0.8                 | 107                     |
| 337.48              | 0.4                 | 50                      | 338.01              | <b>0.8</b>          | <b>108</b>              |
| 337.49              | 0.4                 | 51                      |                     |                     |                         |
| 337.50              | 0.4                 | 52                      |                     |                     |                         |
| 337.51              | 0.4                 | 54                      |                     |                     |                         |
| 337.52              | 0.4                 | 55                      |                     |                     |                         |
| 337.53              | 0.4                 | 57                      |                     |                     |                         |

**Summary for Reach R7: Proposed RRv Swale**

Inflow Area = 5.515 ac, 54.87% Impervious, Inflow Depth = 2.21" for 10-yr event  
 Inflow = 14.40 cfs @ 12.10 hrs, Volume= 1.015 af  
 Outflow = 13.84 cfs @ 12.14 hrs, Volume= 1.015 af, Atten= 4%, Lag= 2.3 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.70 fps, Min. Travel Time= 3.1 min  
 Avg. Velocity = 0.46 fps, Avg. Travel Time= 11.5 min

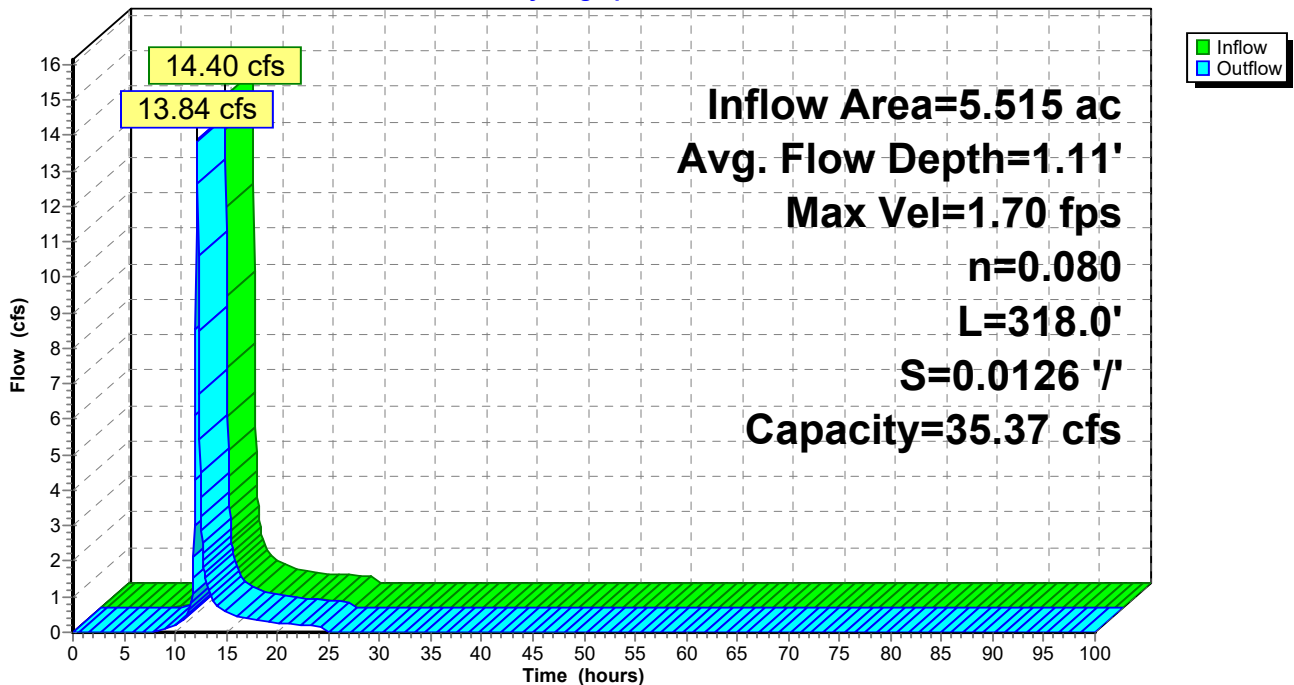
Peak Storage= 2,587 cf @ 12.14 hrs  
 Average Depth at Peak Storage= 1.11' , Surface Width= 10.66'  
 Bank-Full Depth= 1.75' Flow Area= 16.2 sf, Capacity= 35.37 cfs

4.00' x 1.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.50'  
 Length= 318.0' Slope= 0.0126 ' / '  
 Inlet Invert= 335.00', Outlet Invert= 331.00'

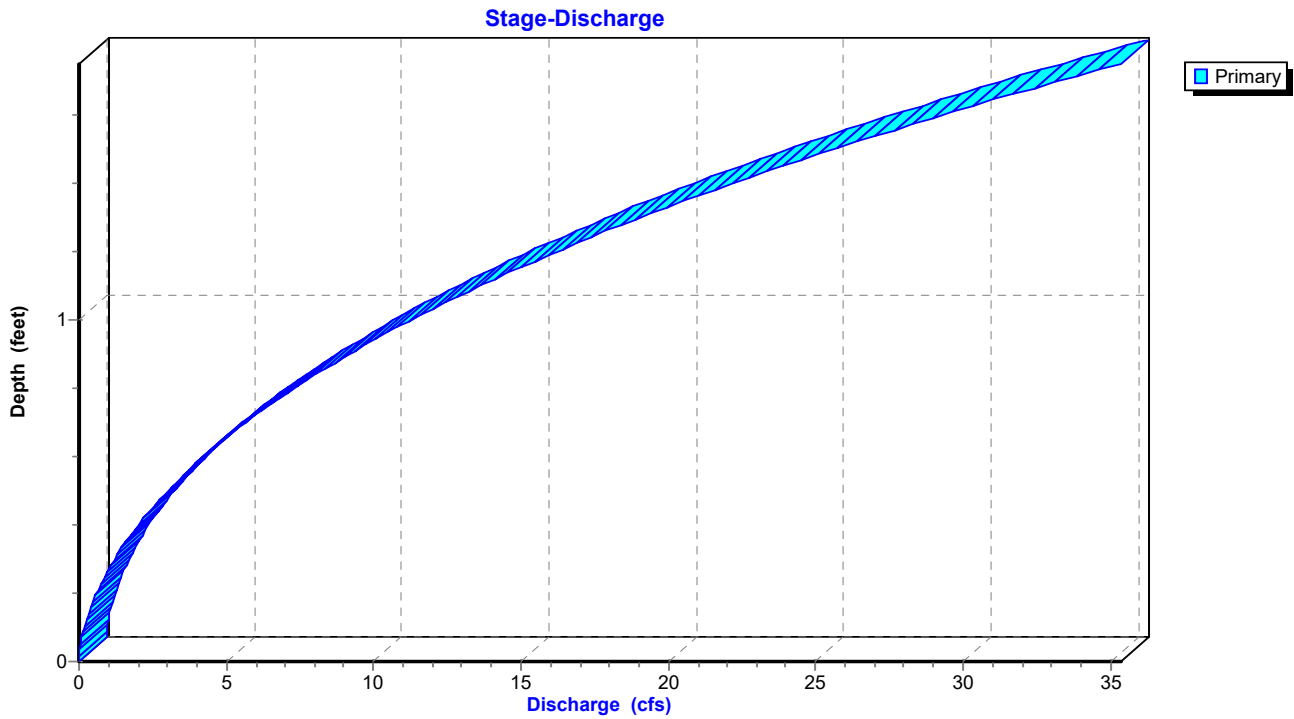


**Reach R7: Proposed RRv Swale**

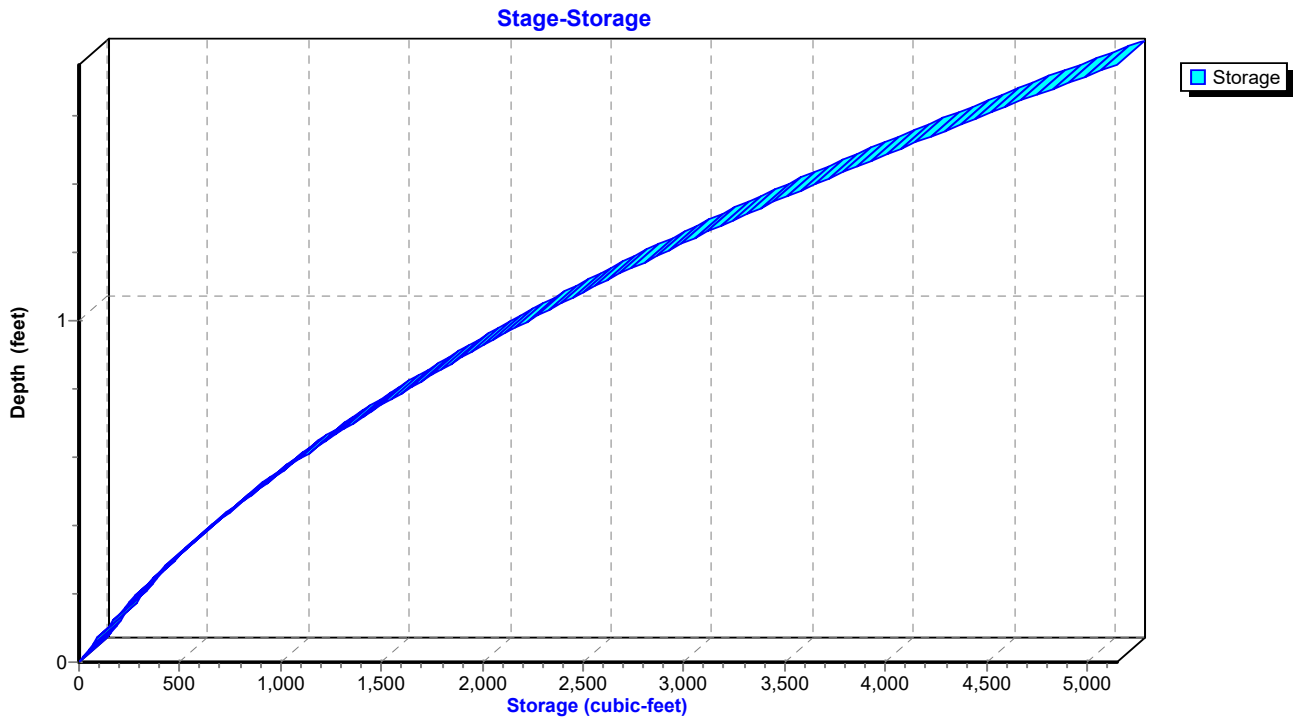
Hydrograph



### Reach R7: Proposed RRv Swale



### Reach R7: Proposed RRv Swale



**Hydrograph for Reach R7: Proposed RRv Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 335.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 7.50            | 0.02            | 10                      | 335.01              | 0.00             |
| 10.00           | <b>0.19</b>     | <b>131</b>              | <b>335.10</b>       | <b>0.17</b>      |
| 12.50           | <b>3.17</b>     | <b>1,026</b>            | <b>335.57</b>       | <b>3.81</b>      |
| 15.00           | 0.56            | 284                     | 335.19              | 0.57             |
| 17.50           | 0.36            | 210                     | 335.15              | 0.36             |
| 20.00           | 0.25            | 167                     | 335.12              | 0.25             |
| 22.50           | 0.22            | 152                     | 335.11              | 0.22             |
| 25.00           | 0.00            | 23                      | 335.02              | 0.01             |
| 27.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 30.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 335.00              | 0.00             |

**Stage-Discharge for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 335.00              | 0.00                 | 0.00               | 336.06              | 1.66                 | 12.63              |
| 335.02              | 0.15                 | 0.01               | 336.08              | 1.68                 | 13.11              |
| 335.04              | 0.24                 | 0.04               | 336.10              | 1.69                 | 13.60              |
| 335.06              | 0.31                 | 0.08               | 336.12              | 1.71                 | 14.10              |
| 335.08              | 0.37                 | 0.13               | 336.14              | 1.73                 | 14.61              |
| 335.10              | 0.43                 | 0.18               | 336.16              | 1.74                 | 15.13              |
| 335.12              | 0.48                 | 0.25               | 336.18              | 1.76                 | 15.66              |
| 335.14              | 0.53                 | 0.33               | 336.20              | 1.78                 | 16.20              |
| 335.16              | 0.57                 | 0.41               | 336.22              | 1.79                 | 16.75              |
| 335.18              | 0.61                 | 0.50               | 336.24              | 1.81                 | 17.31              |
| 335.20              | 0.65                 | 0.60               | 336.26              | 1.82                 | 17.88              |
| 335.22              | 0.69                 | 0.71               | 336.28              | 1.84                 | 18.46              |
| 335.24              | 0.72                 | 0.82               | 336.30              | 1.86                 | 19.05              |
| 335.26              | 0.76                 | 0.94               | 336.32              | 1.87                 | 19.66              |
| 335.28              | 0.79                 | 1.07               | 336.34              | 1.89                 | 20.27              |
| 335.30              | 0.83                 | 1.21               | 336.36              | 1.90                 | 20.90              |
| 335.32              | 0.86                 | 1.36               | 336.38              | 1.92                 | 21.53              |
| 335.34              | 0.89                 | 1.51               | 336.40              | 1.93                 | 22.18              |
| 335.36              | 0.92                 | 1.68               | 336.42              | 1.95                 | 22.84              |
| 335.38              | 0.94                 | 1.84               | 336.44              | 1.96                 | 23.51              |
| 335.40              | 0.97                 | 2.02               | 336.46              | 1.98                 | 24.19              |
| 335.42              | 1.00                 | 2.21               | 336.48              | 1.99                 | 24.88              |
| 335.44              | 1.02                 | 2.40               | 336.50              | 2.01                 | 25.59              |
| 335.46              | 1.05                 | 2.60               | 336.52              | 2.02                 | 26.30              |
| 335.48              | 1.08                 | 2.81               | 336.54              | 2.04                 | 27.03              |
| 335.50              | 1.10                 | 3.03               | 336.56              | 2.05                 | 27.77              |
| 335.52              | 1.12                 | 3.25               | 336.58              | 2.07                 | 28.52              |
| 335.54              | 1.15                 | 3.49               | 336.60              | 2.08                 | 29.28              |
| 335.56              | 1.17                 | 3.73               | 336.62              | 2.09                 | 30.05              |
| 335.58              | 1.19                 | 3.98               | 336.64              | 2.11                 | 30.84              |
| 335.60              | 1.22                 | 4.24               | 336.66              | 2.12                 | 31.64              |
| 335.62              | 1.24                 | 4.50               | 336.68              | 2.14                 | 32.44              |
| 335.64              | 1.26                 | 4.78               | 336.70              | 2.15                 | 33.27              |
| 335.66              | 1.28                 | 5.06               | 336.72              | 2.16                 | 34.10              |
| 335.68              | 1.30                 | 5.35               | 336.74              | <b>2.18</b>          | <b>34.95</b>       |
| 335.70              | 1.32                 | 5.65               |                     |                      |                    |
| 335.72              | 1.34                 | 5.96               |                     |                      |                    |
| 335.74              | 1.36                 | 6.28               |                     |                      |                    |
| 335.76              | 1.38                 | 6.61               |                     |                      |                    |
| 335.78              | 1.40                 | 6.95               |                     |                      |                    |
| 335.80              | 1.42                 | 7.29               |                     |                      |                    |
| 335.82              | 1.44                 | 7.65               |                     |                      |                    |
| 335.84              | 1.46                 | 8.01               |                     |                      |                    |
| 335.86              | 1.48                 | 8.38               |                     |                      |                    |
| 335.88              | 1.50                 | 8.76               |                     |                      |                    |
| 335.90              | 1.52                 | 9.16               |                     |                      |                    |
| 335.92              | 1.54                 | 9.56               |                     |                      |                    |
| 335.94              | 1.55                 | 9.97               |                     |                      |                    |
| 335.96              | 1.57                 | 10.39              |                     |                      |                    |
| 335.98              | 1.59                 | 10.82              |                     |                      |                    |
| 336.00              | 1.61                 | 11.25              |                     |                      |                    |
| 336.02              | 1.63                 | 11.70              |                     |                      |                    |
| 336.04              | 1.64                 | 12.16              |                     |                      |                    |

**Stage-Area-Storage for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 335.00              | 0.0                 | 0                       | 336.06              | 7.6                 | 2,420                   |
| 335.02              | 0.1                 | 26                      | 336.08              | 7.8                 | 2,487                   |
| 335.04              | 0.2                 | 52                      | 336.10              | 8.0                 | 2,554                   |
| 335.06              | 0.3                 | 80                      | 336.12              | 8.2                 | 2,621                   |
| 335.08              | 0.3                 | 108                     | 336.14              | 8.5                 | 2,690                   |
| 335.10              | 0.4                 | 137                     | 336.16              | 8.7                 | 2,759                   |
| 335.12              | 0.5                 | 166                     | 336.18              | 8.9                 | 2,829                   |
| 335.14              | 0.6                 | 197                     | 336.20              | 9.1                 | 2,900                   |
| 335.16              | 0.7                 | 228                     | 336.22              | 9.3                 | 2,972                   |
| 335.18              | 0.8                 | 260                     | 336.24              | 9.6                 | 3,044                   |
| 335.20              | 0.9                 | 293                     | 336.26              | 9.8                 | 3,117                   |
| 335.22              | 1.0                 | 326                     | 336.28              | 10.0                | 3,191                   |
| 335.24              | 1.1                 | 360                     | 336.30              | 10.3                | 3,266                   |
| 335.26              | 1.2                 | 395                     | 336.32              | 10.5                | 3,341                   |
| 335.28              | 1.4                 | 431                     | 336.34              | 10.7                | 3,418                   |
| 335.30              | 1.5                 | 467                     | 336.36              | 11.0                | 3,494                   |
| 335.32              | 1.6                 | 505                     | 336.38              | 11.2                | 3,572                   |
| 335.34              | 1.7                 | 543                     | 336.40              | 11.5                | 3,651                   |
| 335.36              | 1.8                 | 582                     | 336.42              | 11.7                | 3,730                   |
| 335.38              | 2.0                 | 621                     | 336.44              | 12.0                | 3,810                   |
| 335.40              | 2.1                 | 661                     | 336.46              | 12.2                | 3,891                   |
| 335.42              | 2.2                 | 703                     | 336.48              | 12.5                | 3,972                   |
| 335.44              | 2.3                 | 744                     | 336.50              | 12.8                | 4,055                   |
| 335.46              | 2.5                 | 787                     | 336.52              | 13.0                | 4,138                   |
| 335.48              | 2.6                 | 830                     | 336.54              | 13.3                | 4,221                   |
| 335.50              | 2.8                 | 875                     | 336.56              | 13.5                | 4,306                   |
| 335.52              | 2.9                 | 919                     | 336.58              | 13.8                | 4,391                   |
| 335.54              | 3.0                 | 965                     | 336.60              | 14.1                | 4,478                   |
| 335.56              | 3.2                 | 1,011                   | 336.62              | 14.4                | 4,564                   |
| 335.58              | 3.3                 | 1,059                   | 336.64              | 14.6                | 4,652                   |
| 335.60              | 3.5                 | 1,107                   | 336.66              | 14.9                | 4,740                   |
| 335.62              | 3.6                 | 1,155                   | 336.68              | 15.2                | 4,830                   |
| 335.64              | 3.8                 | 1,205                   | 336.70              | 15.5                | 4,919                   |
| 335.66              | 3.9                 | 1,255                   | 336.72              | 15.8                | 5,010                   |
| 335.68              | 4.1                 | 1,306                   | 336.74              | <b>16.0</b>         | <b>5,102</b>            |
| 335.70              | 4.3                 | 1,358                   |                     |                     |                         |
| 335.72              | 4.4                 | 1,410                   |                     |                     |                         |
| 335.74              | 4.6                 | 1,464                   |                     |                     |                         |
| 335.76              | 4.8                 | 1,518                   |                     |                     |                         |
| 335.78              | 4.9                 | 1,573                   |                     |                     |                         |
| 335.80              | 5.1                 | 1,628                   |                     |                     |                         |
| 335.82              | 5.3                 | 1,685                   |                     |                     |                         |
| 335.84              | 5.5                 | 1,742                   |                     |                     |                         |
| 335.86              | 5.7                 | 1,800                   |                     |                     |                         |
| 335.88              | 5.8                 | 1,858                   |                     |                     |                         |
| 335.90              | 6.0                 | 1,918                   |                     |                     |                         |
| 335.92              | 6.2                 | 1,978                   |                     |                     |                         |
| 335.94              | 6.4                 | 2,039                   |                     |                     |                         |
| 335.96              | 6.6                 | 2,100                   |                     |                     |                         |
| 335.98              | 6.8                 | 2,163                   |                     |                     |                         |
| 336.00              | 7.0                 | 2,226                   |                     |                     |                         |
| 336.02              | 7.2                 | 2,290                   |                     |                     |                         |
| 336.04              | 7.4                 | 2,355                   |                     |                     |                         |

**Summary for Reach R8: Proposed RRv Swale**

Inflow Area = 2.075 ac, 33.06% Impervious, Inflow Depth = 0.32" for 10-yr event  
 Inflow = 0.15 cfs @ 13.05 hrs, Volume= 0.055 af  
 Outflow = 0.14 cfs @ 13.31 hrs, Volume= 0.055 af, Atten= 8%, Lag= 15.4 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.51 fps, Min. Travel Time= 18.7 min  
 Avg. Velocity = 0.24 fps, Avg. Travel Time= 38.8 min

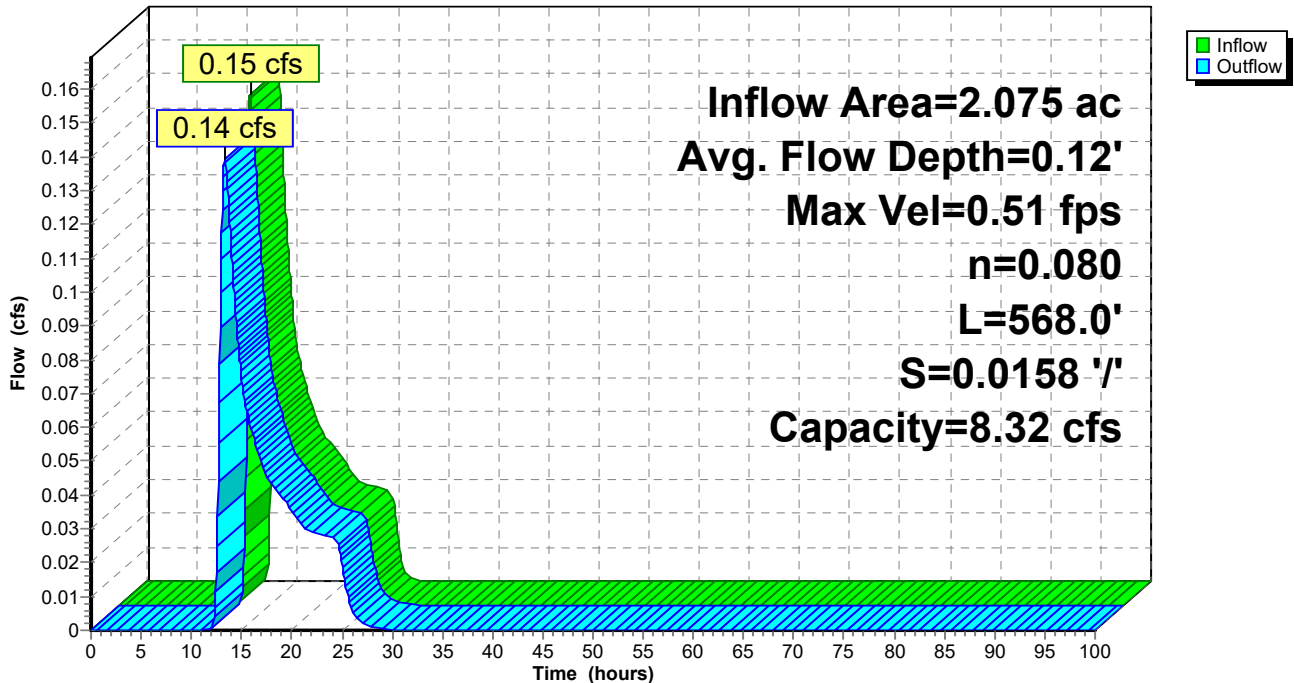
Peak Storage= 157 cf @ 13.31 hrs  
 Average Depth at Peak Storage= 0.12' , Surface Width= 2.70'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 8.32 cfs

2.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 568.0' Slope= 0.0158 '/  
 Inlet Invert= 340.00', Outlet Invert= 331.00'



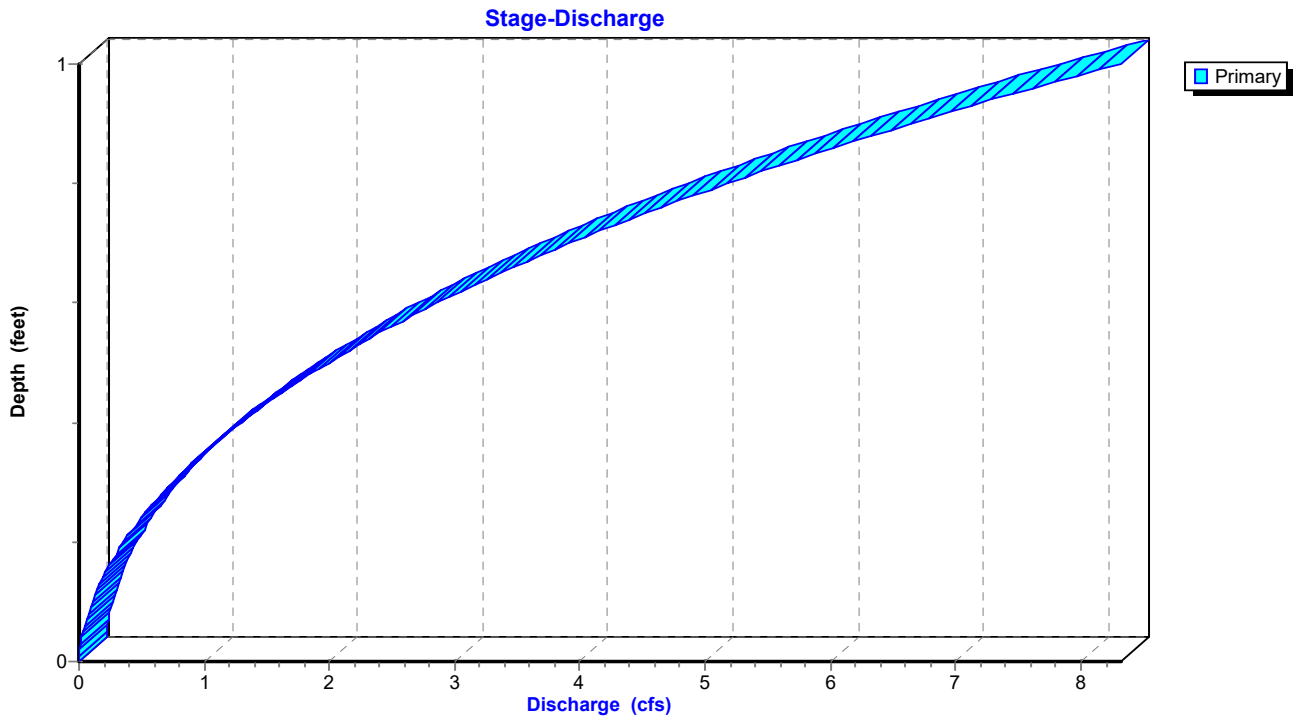
**Reach R8: Proposed RRv Swale**

Hydrograph

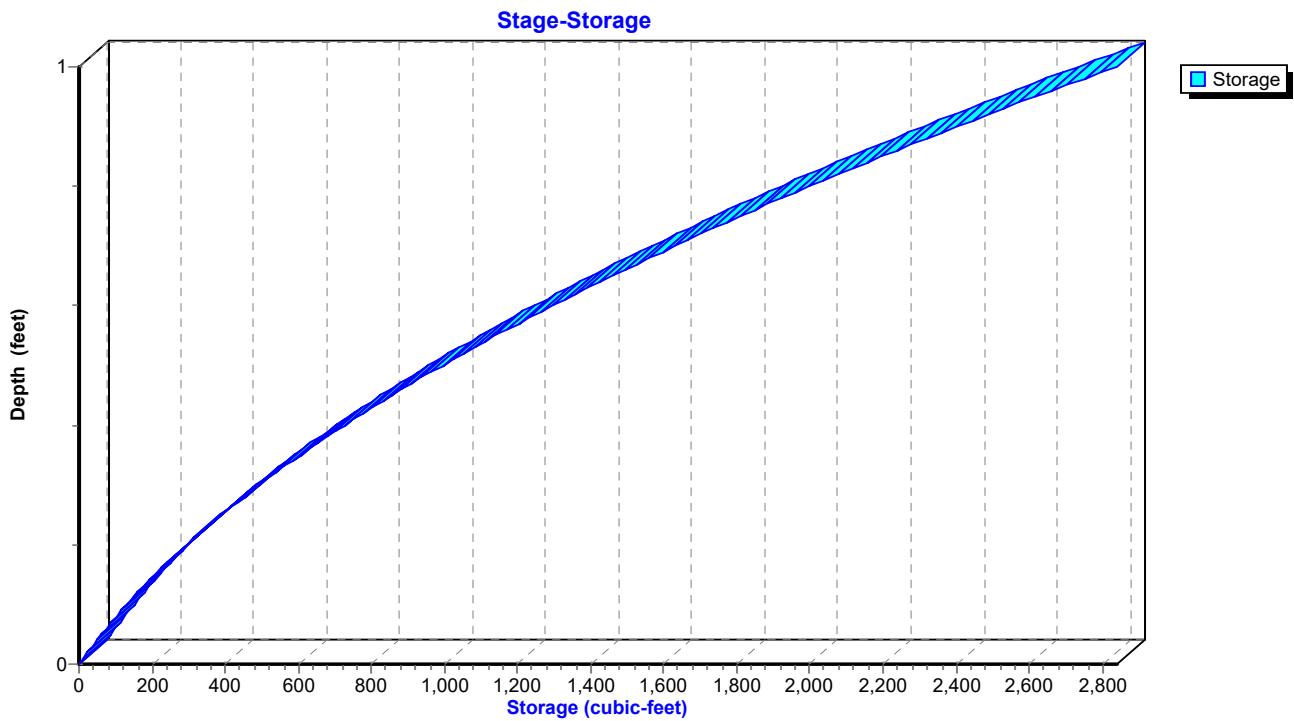




### Reach R8: Proposed RRv Swale



### Reach R8: Proposed RRv Swale



**Hydrograph for Reach R8: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 340.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 340.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 340.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 340.00           | 0.00          |
| 10.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 12.50        | <b>0.07</b>  | <b>41</b>            | <b>340.03</b>    | <b>0.02</b>   |
| 15.00        | <b>0.07</b>  | <b>104</b>           | <b>340.08</b>    | <b>0.07</b>   |
| 17.50        | 0.04         | 76                   | 340.06           | 0.05          |
| 20.00        | 0.03         | 64                   | 340.05           | 0.04          |
| 22.50        | 0.03         | 56                   | 340.05           | 0.03          |
| 25.00        | 0.01         | 45                   | 340.04           | 0.02          |
| 27.50        | 0.00         | 8                    | 340.01           | 0.00          |
| 30.00        | 0.00         | 1                    | 340.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 340.00           | 0.00          |

**Stage-Discharge for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 340.00              | 0.00                 | 0.00               | 340.53              | 1.17                 | 2.23               |
| 340.01              | 0.11                 | 0.00               | 340.54              | 1.19                 | 2.32               |
| 340.02              | 0.17                 | 0.01               | 340.55              | 1.20                 | 2.40               |
| 340.03              | 0.22                 | 0.01               | 340.56              | 1.21                 | 2.49               |
| 340.04              | 0.26                 | 0.02               | 340.57              | 1.22                 | 2.58               |
| 340.05              | 0.30                 | 0.03               | 340.58              | 1.23                 | 2.67               |
| 340.06              | 0.34                 | 0.04               | 340.59              | 1.24                 | 2.77               |
| 340.07              | 0.37                 | 0.06               | 340.60              | 1.26                 | 2.86               |
| 340.08              | 0.40                 | 0.07               | 340.61              | 1.27                 | 2.96               |
| 340.09              | 0.43                 | 0.09               | 340.62              | 1.28                 | 3.06               |
| 340.10              | 0.46                 | 0.11               | 340.63              | 1.29                 | 3.16               |
| 340.11              | 0.49                 | 0.12               | 340.64              | 1.30                 | 3.26               |
| 340.12              | 0.51                 | 0.15               | 340.65              | 1.31                 | 3.37               |
| 340.13              | 0.54                 | 0.17               | 340.66              | 1.32                 | 3.47               |
| 340.14              | 0.56                 | 0.19               | 340.67              | 1.33                 | 3.58               |
| 340.15              | 0.58                 | 0.21               | 340.68              | 1.34                 | 3.69               |
| 340.16              | 0.61                 | 0.24               | 340.69              | 1.36                 | 3.81               |
| 340.17              | 0.63                 | 0.27               | 340.70              | 1.37                 | 3.92               |
| 340.18              | 0.65                 | 0.30               | 340.71              | 1.38                 | 4.04               |
| 340.19              | 0.67                 | 0.33               | 340.72              | 1.39                 | 4.16               |
| 340.20              | 0.69                 | 0.36               | 340.73              | 1.40                 | 4.28               |
| 340.21              | 0.71                 | 0.39               | 340.74              | 1.41                 | 4.40               |
| 340.22              | 0.72                 | 0.42               | 340.75              | 1.42                 | 4.52               |
| 340.23              | 0.74                 | 0.46               | 340.76              | 1.43                 | 4.65               |
| 340.24              | 0.76                 | 0.50               | 340.77              | 1.44                 | 4.78               |
| 340.25              | 0.78                 | 0.53               | 340.78              | 1.45                 | 4.91               |
| 340.26              | 0.80                 | 0.57               | 340.79              | 1.46                 | 5.04               |
| 340.27              | 0.81                 | 0.62               | 340.80              | 1.47                 | 5.18               |
| 340.28              | 0.83                 | 0.66               | 340.81              | 1.48                 | 5.31               |
| 340.29              | 0.84                 | 0.70               | 340.82              | 1.49                 | 5.45               |
| 340.30              | 0.86                 | 0.75               | 340.83              | 1.50                 | 5.59               |
| 340.31              | 0.88                 | 0.80               | 340.84              | 1.51                 | 5.73               |
| 340.32              | 0.89                 | 0.84               | 340.85              | 1.52                 | 5.88               |
| 340.33              | 0.91                 | 0.89               | 340.86              | 1.53                 | 6.03               |
| 340.34              | 0.92                 | 0.95               | 340.87              | 1.54                 | 6.18               |
| 340.35              | 0.94                 | 1.00               | 340.88              | 1.55                 | 6.33               |
| 340.36              | 0.95                 | 1.05               | 340.89              | 1.56                 | 6.48               |
| 340.37              | 0.96                 | 1.11               | 340.90              | 1.57                 | 6.64               |
| 340.38              | 0.98                 | 1.17               | 340.91              | 1.58                 | 6.80               |
| 340.39              | 0.99                 | 1.23               | 340.92              | 1.59                 | 6.96               |
| 340.40              | 1.01                 | 1.29               | 340.93              | 1.60                 | 7.12               |
| 340.41              | 1.02                 | 1.35               | 340.94              | 1.61                 | 7.29               |
| 340.42              | 1.03                 | 1.42               | 340.95              | 1.62                 | 7.45               |
| 340.43              | 1.05                 | 1.48               | 340.96              | 1.63                 | 7.62               |
| 340.44              | 1.06                 | 1.55               | 340.97              | 1.64                 | 7.79               |
| 340.45              | 1.07                 | 1.62               | 340.98              | 1.65                 | 7.97               |
| 340.46              | 1.09                 | 1.69               | 340.99              | 1.66                 | 8.14               |
| 340.47              | 1.10                 | 1.76               | 341.00              | <b>1.66</b>          | <b>8.32</b>        |
| 340.48              | 1.11                 | 1.84               |                     |                      |                    |
| 340.49              | 1.12                 | 1.91               |                     |                      |                    |
| 340.50              | 1.14                 | 1.99               |                     |                      |                    |
| 340.51              | 1.15                 | 2.07               |                     |                      |                    |
| 340.52              | 1.16                 | 2.15               |                     |                      |                    |

**Stage-Area-Storage for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 340.00              | 0.0                 | 0                       | 340.53              | 1.9                 | 1,081                   |
| 340.01              | 0.0                 | 12                      | 340.54              | 2.0                 | 1,110                   |
| 340.02              | 0.0                 | 23                      | 340.55              | 2.0                 | 1,140                   |
| 340.03              | 0.1                 | 36                      | 340.56              | 2.1                 | 1,171                   |
| 340.04              | 0.1                 | 48                      | 340.57              | 2.1                 | 1,201                   |
| 340.05              | 0.1                 | 61                      | 340.58              | 2.2                 | 1,232                   |
| 340.06              | 0.1                 | 74                      | 340.59              | 2.2                 | 1,263                   |
| 340.07              | 0.2                 | 88                      | 340.60              | 2.3                 | 1,295                   |
| 340.08              | 0.2                 | 102                     | 340.61              | 2.3                 | 1,327                   |
| 340.09              | 0.2                 | 116                     | 340.62              | 2.4                 | 1,359                   |
| 340.10              | 0.2                 | 131                     | 340.63              | 2.5                 | 1,392                   |
| 340.11              | 0.3                 | 146                     | 340.64              | 2.5                 | 1,425                   |
| 340.12              | 0.3                 | 161                     | 340.65              | 2.6                 | 1,458                   |
| 340.13              | 0.3                 | 176                     | 340.66              | 2.6                 | 1,492                   |
| 340.14              | 0.3                 | 192                     | 340.67              | 2.7                 | 1,526                   |
| 340.15              | 0.4                 | 209                     | 340.68              | 2.7                 | 1,560                   |
| 340.16              | 0.4                 | 225                     | 340.69              | 2.8                 | 1,595                   |
| 340.17              | 0.4                 | 242                     | 340.70              | 2.9                 | 1,630                   |
| 340.18              | 0.5                 | 260                     | 340.71              | 2.9                 | 1,666                   |
| 340.19              | 0.5                 | 277                     | 340.72              | 3.0                 | 1,701                   |
| 340.20              | 0.5                 | 295                     | 340.73              | 3.1                 | 1,737                   |
| 340.21              | 0.6                 | 314                     | 340.74              | 3.1                 | 1,774                   |
| 340.22              | 0.6                 | 332                     | 340.75              | 3.2                 | 1,811                   |
| 340.23              | 0.6                 | 351                     | 340.76              | 3.3                 | 1,848                   |
| 340.24              | 0.7                 | 371                     | 340.77              | 3.3                 | 1,885                   |
| 340.25              | 0.7                 | 391                     | 340.78              | 3.4                 | 1,923                   |
| 340.26              | 0.7                 | 411                     | 340.79              | 3.5                 | 1,961                   |
| 340.27              | 0.8                 | 431                     | 340.80              | 3.5                 | 1,999                   |
| 340.28              | 0.8                 | 452                     | 340.81              | 3.6                 | 2,038                   |
| 340.29              | 0.8                 | 473                     | 340.82              | 3.7                 | 2,077                   |
| 340.30              | 0.9                 | 494                     | 340.83              | 3.7                 | 2,117                   |
| 340.31              | 0.9                 | 516                     | 340.84              | 3.8                 | 2,157                   |
| 340.32              | 0.9                 | 538                     | 340.85              | 3.9                 | 2,197                   |
| 340.33              | 1.0                 | 560                     | 340.86              | 3.9                 | 2,237                   |
| 340.34              | 1.0                 | 583                     | 340.87              | 4.0                 | 2,278                   |
| 340.35              | 1.1                 | 606                     | 340.88              | 4.1                 | 2,319                   |
| 340.36              | 1.1                 | 630                     | 340.89              | 4.2                 | 2,361                   |
| 340.37              | 1.2                 | 654                     | 340.90              | 4.2                 | 2,403                   |
| 340.38              | 1.2                 | 678                     | 340.91              | 4.3                 | 2,445                   |
| 340.39              | 1.2                 | 702                     | 340.92              | 4.4                 | 2,487                   |
| 340.40              | 1.3                 | 727                     | 340.93              | 4.5                 | 2,530                   |
| 340.41              | 1.3                 | 752                     | 340.94              | 4.5                 | 2,573                   |
| 340.42              | 1.4                 | 778                     | 340.95              | 4.6                 | 2,617                   |
| 340.43              | 1.4                 | 804                     | 340.96              | 4.7                 | 2,661                   |
| 340.44              | 1.5                 | 830                     | 340.97              | 4.8                 | 2,705                   |
| 340.45              | 1.5                 | 856                     | 340.98              | 4.8                 | 2,750                   |
| 340.46              | 1.6                 | 883                     | 340.99              | 4.9                 | 2,795                   |
| 340.47              | 1.6                 | 910                     | 341.00              | <b>5.0</b>          | <b>2,840</b>            |
| 340.48              | 1.7                 | 938                     |                     |                     |                         |
| 340.49              | 1.7                 | 966                     |                     |                     |                         |
| 340.50              | 1.8                 | 994                     |                     |                     |                         |
| 340.51              | 1.8                 | 1,023                   |                     |                     |                         |
| 340.52              | 1.9                 | 1,051                   |                     |                     |                         |

**Summary for Reach R9: Proposed RRV Swale**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 2.21" for 10-yr event  
 Inflow = 4.38 cfs @ 12.01 hrs, Volume= 0.239 af  
 Outflow = 2.68 cfs @ 12.11 hrs, Volume= 0.239 af, Atten= 39%, Lag= 6.1 min  
 Routed to Pond 6P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.84 fps, Min. Travel Time= 15.2 min  
 Avg. Velocity = 0.19 fps, Avg. Travel Time= 68.7 min

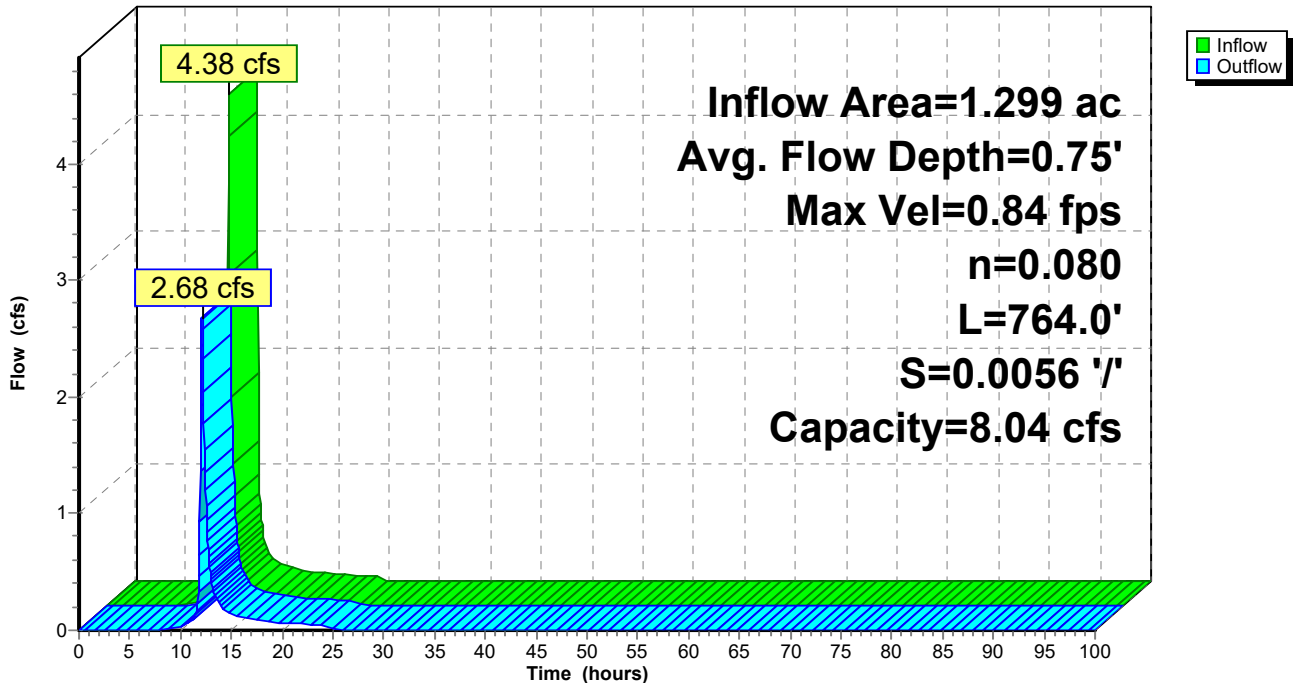
Peak Storage= 2,434 cf @ 12.11 hrs  
 Average Depth at Peak Storage= 0.75' , Surface Width= 6.50'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 8.04 cfs

2.00' x 1.25' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 9.50'  
 Length= 764.0' Slope= 0.0056 ' / '  
 Inlet Invert= 337.00', Outlet Invert= 332.75'

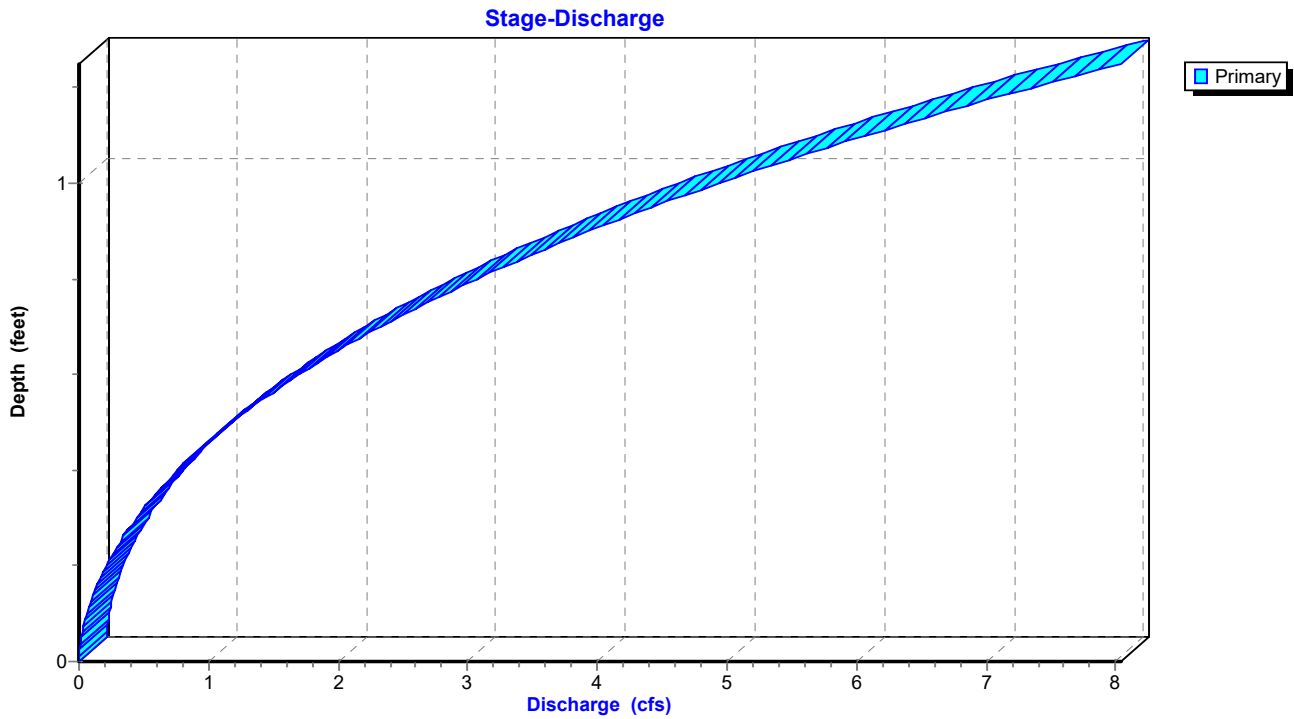


**Reach R9: Proposed RRV Swale**

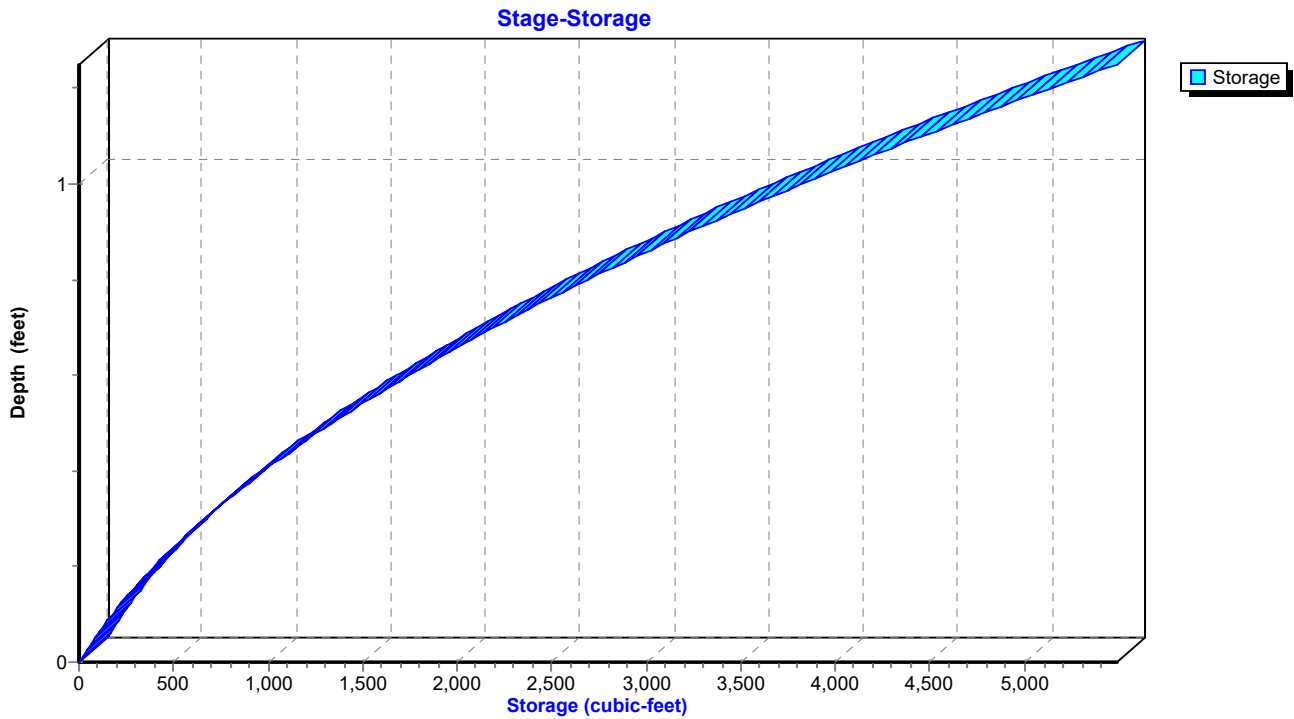
Hydrograph



### Reach R9: Proposed RRV Swale



### Reach R9: Proposed RRV Swale



**Hydrograph for Reach R9: Proposed RRV Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 337.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 337.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 337.00              | 0.00             |
| 7.50            | 0.00            | 4                       | 337.00              | 0.00             |
| 10.00           | <b>0.05</b>     | <b>112</b>              | <b>337.07</b>       | <b>0.03</b>      |
| 12.50           | <b>0.48</b>     | <b>1,237</b>            | <b>337.47</b>       | <b>1.06</b>      |
| 15.00           | 0.13            | 303                     | 337.16              | 0.14             |
| 17.50           | 0.08            | 219                     | 337.12              | 0.09             |
| 20.00           | 0.06            | 174                     | 337.10              | 0.06             |
| 22.50           | 0.05            | 155                     | 337.09              | 0.05             |
| 25.00           | 0.00            | 67                      | 337.04              | 0.01             |
| 27.50           | 0.00            | 19                      | 337.01              | 0.00             |
| 30.00           | 0.00            | 8                       | 337.01              | 0.00             |
| 32.50           | 0.00            | 3                       | 337.00              | 0.00             |
| 35.00           | 0.00            | 1                       | 337.00              | 0.00             |
| 37.50           | 0.00            | 1                       | 337.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 337.00              | 0.00             |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Stage-Discharge for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.00              | 0.00                 | 0.00               | 337.53              | 0.70                 | 1.32               | 338.06              | 1.02                 | 5.60               |
| 337.01              | 0.06                 | 0.00               | 337.54              | 0.70                 | 1.37               | 338.07              | 1.02                 | 5.71               |
| 337.02              | 0.10                 | 0.00               | 337.55              | 0.71                 | 1.42               | 338.08              | 1.03                 | 5.83               |
| 337.03              | 0.13                 | 0.01               | 337.56              | 0.72                 | 1.48               | 338.09              | 1.04                 | 5.95               |
| 337.04              | 0.16                 | 0.01               | 337.57              | 0.72                 | 1.53               | 338.10              | 1.04                 | 6.07               |
| 337.05              | 0.18                 | 0.02               | 337.58              | 0.73                 | 1.58               | 338.11              | 1.05                 | 6.19               |
| 337.06              | 0.20                 | 0.03               | 337.59              | 0.74                 | 1.64               | 338.12              | 1.05                 | 6.31               |
| 337.07              | 0.22                 | 0.03               | 337.60              | 0.74                 | 1.70               | 338.13              | 1.06                 | 6.43               |
| 337.08              | 0.24                 | 0.04               | 337.61              | 0.75                 | 1.75               | 338.14              | 1.06                 | 6.56               |
| 337.09              | 0.26                 | 0.05               | 337.62              | 0.76                 | 1.81               | 338.15              | 1.07                 | 6.69               |
| 337.10              | 0.27                 | 0.06               | 337.63              | 0.76                 | 1.87               | 338.16              | 1.07                 | 6.82               |
| 337.11              | 0.29                 | 0.07               | 337.64              | 0.77                 | 1.93               | 338.17              | 1.08                 | 6.95               |
| 337.12              | 0.30                 | 0.09               | 337.65              | 0.78                 | 2.00               | 338.18              | 1.08                 | 7.08               |
| 337.13              | 0.32                 | 0.10               | 337.66              | 0.78                 | 2.06               | 338.19              | 1.09                 | 7.21               |
| 337.14              | 0.33                 | 0.11               | 337.67              | 0.79                 | 2.12               | 338.20              | 1.09                 | 7.35               |
| 337.15              | 0.35                 | 0.13               | 337.68              | 0.80                 | 2.19               | 338.21              | 1.10                 | 7.48               |
| 337.16              | 0.36                 | 0.14               | 337.69              | 0.80                 | 2.26               | 338.22              | 1.10                 | 7.62               |
| 337.17              | 0.37                 | 0.16               | 337.70              | 0.81                 | 2.32               | 338.23              | 1.11                 | 7.76               |
| 337.18              | 0.38                 | 0.18               | 337.71              | 0.82                 | 2.39               | 338.24              | 1.11                 | 7.90               |
| 337.19              | 0.40                 | 0.19               | 337.72              | 0.82                 | 2.46               | 338.25              | <b>1.12</b>          | <b>8.04</b>        |
| 337.20              | 0.41                 | 0.21               | 337.73              | 0.83                 | 2.53               |                     |                      |                    |
| 337.21              | 0.42                 | 0.23               | 337.74              | 0.83                 | 2.61               |                     |                      |                    |
| 337.22              | 0.43                 | 0.25               | 337.75              | 0.84                 | 2.68               |                     |                      |                    |
| 337.23              | 0.44                 | 0.27               | 337.76              | 0.85                 | 2.75               |                     |                      |                    |
| 337.24              | 0.45                 | 0.29               | 337.77              | 0.85                 | 2.83               |                     |                      |                    |
| 337.25              | 0.46                 | 0.32               | 337.78              | 0.86                 | 2.91               |                     |                      |                    |
| 337.26              | 0.47                 | 0.34               | 337.79              | 0.87                 | 2.99               |                     |                      |                    |
| 337.27              | 0.48                 | 0.37               | 337.80              | 0.87                 | 3.07               |                     |                      |                    |
| 337.28              | 0.49                 | 0.39               | 337.81              | 0.88                 | 3.15               |                     |                      |                    |
| 337.29              | 0.50                 | 0.42               | 337.82              | 0.88                 | 3.23               |                     |                      |                    |
| 337.30              | 0.51                 | 0.44               | 337.83              | 0.89                 | 3.31               |                     |                      |                    |
| 337.31              | 0.52                 | 0.47               | 337.84              | 0.89                 | 3.40               |                     |                      |                    |
| 337.32              | 0.53                 | 0.50               | 337.85              | 0.90                 | 3.48               |                     |                      |                    |
| 337.33              | 0.54                 | 0.53               | 337.86              | 0.91                 | 3.57               |                     |                      |                    |
| 337.34              | 0.55                 | 0.56               | 337.87              | 0.91                 | 3.66               |                     |                      |                    |
| 337.35              | 0.55                 | 0.59               | 337.88              | 0.92                 | 3.75               |                     |                      |                    |
| 337.36              | 0.56                 | 0.62               | 337.89              | 0.92                 | 3.84               |                     |                      |                    |
| 337.37              | 0.57                 | 0.66               | 337.90              | 0.93                 | 3.93               |                     |                      |                    |
| 337.38              | 0.58                 | 0.69               | 337.91              | 0.94                 | 4.03               |                     |                      |                    |
| 337.39              | 0.59                 | 0.73               | 337.92              | 0.94                 | 4.12               |                     |                      |                    |
| 337.40              | 0.60                 | 0.76               | 337.93              | 0.95                 | 4.22               |                     |                      |                    |
| 337.41              | 0.60                 | 0.80               | 337.94              | 0.95                 | 4.32               |                     |                      |                    |
| 337.42              | 0.61                 | 0.84               | 337.95              | 0.96                 | 4.42               |                     |                      |                    |
| 337.43              | 0.62                 | 0.88               | 337.96              | 0.96                 | 4.52               |                     |                      |                    |
| 337.44              | 0.63                 | 0.92               | 337.97              | 0.97                 | 4.62               |                     |                      |                    |
| 337.45              | 0.64                 | 0.96               | 337.98              | 0.98                 | 4.72               |                     |                      |                    |
| 337.46              | 0.64                 | 1.00               | 337.99              | 0.98                 | 4.83               |                     |                      |                    |
| 337.47              | 0.65                 | 1.04               | 338.00              | 0.99                 | 4.93               |                     |                      |                    |
| 337.48              | 0.66                 | 1.09               | 338.01              | 0.99                 | 5.04               |                     |                      |                    |
| 337.49              | 0.67                 | 1.13               | 338.02              | 1.00                 | 5.15               |                     |                      |                    |
| 337.50              | 0.67                 | 1.18               | 338.03              | 1.00                 | 5.26               |                     |                      |                    |
| 337.51              | 0.68                 | 1.23               | 338.04              | 1.01                 | 5.37               |                     |                      |                    |
| 337.52              | 0.69                 | 1.27               | 338.05              | 1.01                 | 5.48               |                     |                      |                    |



**Stage-Area-Storage for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.00              | 0.0                 | 0                       | 338.06              | 5.5                 | 4,195                   |
| 337.02              | 0.0                 | 32                      | 338.08              | 5.7                 | 4,324                   |
| 337.04              | 0.1                 | 65                      | 338.10              | 5.8                 | 4,454                   |
| 337.06              | 0.1                 | 100                     | 338.12              | 6.0                 | 4,587                   |
| 337.08              | 0.2                 | 137                     | 338.14              | 6.2                 | 4,721                   |
| 337.10              | 0.2                 | 176                     | 338.16              | 6.4                 | 4,857                   |
| 337.12              | 0.3                 | 216                     | 338.18              | 6.5                 | 4,995                   |
| 337.14              | 0.3                 | 259                     | 338.20              | 6.7                 | 5,134                   |
| 337.16              | 0.4                 | 303                     | 338.22              | 6.9                 | 5,276                   |
| 337.18              | 0.5                 | 349                     | 338.24              | <b>7.1</b>          | <b>5,419</b>            |
| 337.20              | 0.5                 | 397                     |                     |                     |                         |
| 337.22              | 0.6                 | 447                     |                     |                     |                         |
| 337.24              | 0.7                 | 499                     |                     |                     |                         |
| 337.26              | 0.7                 | 552                     |                     |                     |                         |
| 337.28              | 0.8                 | 608                     |                     |                     |                         |
| 337.30              | 0.9                 | 665                     |                     |                     |                         |
| 337.32              | 0.9                 | 724                     |                     |                     |                         |
| 337.34              | 1.0                 | 785                     |                     |                     |                         |
| 337.36              | 1.1                 | 847                     |                     |                     |                         |
| 337.38              | 1.2                 | 912                     |                     |                     |                         |
| 337.40              | 1.3                 | 978                     |                     |                     |                         |
| 337.42              | 1.4                 | 1,046                   |                     |                     |                         |
| 337.44              | 1.5                 | 1,116                   |                     |                     |                         |
| 337.46              | 1.6                 | 1,188                   |                     |                     |                         |
| 337.48              | 1.7                 | 1,262                   |                     |                     |                         |
| 337.50              | 1.8                 | 1,337                   |                     |                     |                         |
| 337.52              | 1.9                 | 1,414                   |                     |                     |                         |
| 337.54              | 2.0                 | 1,494                   |                     |                     |                         |
| 337.56              | 2.1                 | 1,575                   |                     |                     |                         |
| 337.58              | 2.2                 | 1,657                   |                     |                     |                         |
| 337.60              | 2.3                 | 1,742                   |                     |                     |                         |
| 337.62              | 2.4                 | 1,828                   |                     |                     |                         |
| 337.64              | 2.5                 | 1,917                   |                     |                     |                         |
| 337.66              | 2.6                 | 2,007                   |                     |                     |                         |
| 337.68              | 2.7                 | 2,099                   |                     |                     |                         |
| 337.70              | 2.9                 | 2,193                   |                     |                     |                         |
| 337.72              | 3.0                 | 2,288                   |                     |                     |                         |
| 337.74              | 3.1                 | 2,386                   |                     |                     |                         |
| 337.76              | 3.3                 | 2,485                   |                     |                     |                         |
| 337.78              | 3.4                 | 2,586                   |                     |                     |                         |
| 337.80              | 3.5                 | 2,689                   |                     |                     |                         |
| 337.82              | 3.7                 | 2,794                   |                     |                     |                         |
| 337.84              | 3.8                 | 2,901                   |                     |                     |                         |
| 337.86              | 3.9                 | 3,009                   |                     |                     |                         |
| 337.88              | 4.1                 | 3,120                   |                     |                     |                         |
| 337.90              | 4.2                 | 3,232                   |                     |                     |                         |
| 337.92              | 4.4                 | 3,346                   |                     |                     |                         |
| 337.94              | 4.5                 | 3,462                   |                     |                     |                         |
| 337.96              | 4.7                 | 3,579                   |                     |                     |                         |
| 337.98              | 4.8                 | 3,699                   |                     |                     |                         |
| 338.00              | 5.0                 | 3,820                   |                     |                     |                         |
| 338.02              | 5.2                 | 3,943                   |                     |                     |                         |
| 338.04              | 5.3                 | 4,068                   |                     |                     |                         |

**Summary for Pond 4P: Proposed Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.35" for 10-yr event  
 Inflow = 1.22 cfs @ 12.57 hrs, Volume= 0.298 af  
 Outflow = 0.47 cfs @ 13.86 hrs, Volume= 0.297 af, Atten= 62%, Lag= 77.3 min  
 Primary = 0.47 cfs @ 13.86 hrs, Volume= 0.297 af  
 Routed to Reach R12 : 12" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.00' Surf.Area= 1,864 sf Storage= 1,362 cf  
 Peak Elev= 338.25' @ 13.86 hrs Surf.Area= 3,285 sf Storage= 4,548 cf (3,187 cf above start)

Plug-Flow detention time= 274.9 min calculated for 0.266 af (89% of inflow)  
 Center-of-Mass det. time= 182.4 min ( 1,160.5 - 978.1 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 338.50' | 5,344 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 335.00' | 3,537 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 334.50' | 1,862 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 10,742 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 338.50           | 3,608             | 353.0         | 0                      | 0                      | 3,608            |
| 339.00           | 4,127             | 266.0         | 1,932                  | 1,932                  | 7,896            |
| 339.75           | 4,983             | 287.0         | 3,411                  | 5,344                  | 8,843            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 335.00           | 29                | 23.0          | 0                      | 0                      | 29               |
| 336.00           | 189               | 66.0          | 97                     | 97                     | 337              |
| 337.00           | 1,332             | 155.0         | 674                    | 772                    | 1,906            |
| 338.00           | 2,017             | 182.0         | 1,663                  | 2,434                  | 2,649            |
| 338.50           | 2,399             | 200.0         | 1,103                  | 3,537                  | 3,205            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 334.50           | 3                 | 7.6           | 0                      | 0                      | 3                |
| 335.00           | 83                | 48.0          | 17                     | 17                     | 182              |
| 336.00           | 282               | 74.0          | 173                    | 190                    | 442              |
| 337.00           | 532               | 93.0          | 400                    | 590                    | 708              |
| 338.00           | 953               | 118.0         | 732                    | 1,322                  | 1,141            |
| 338.50           | 1,209             | 136.0         | 539                    | 1,862                  | 1,510            |

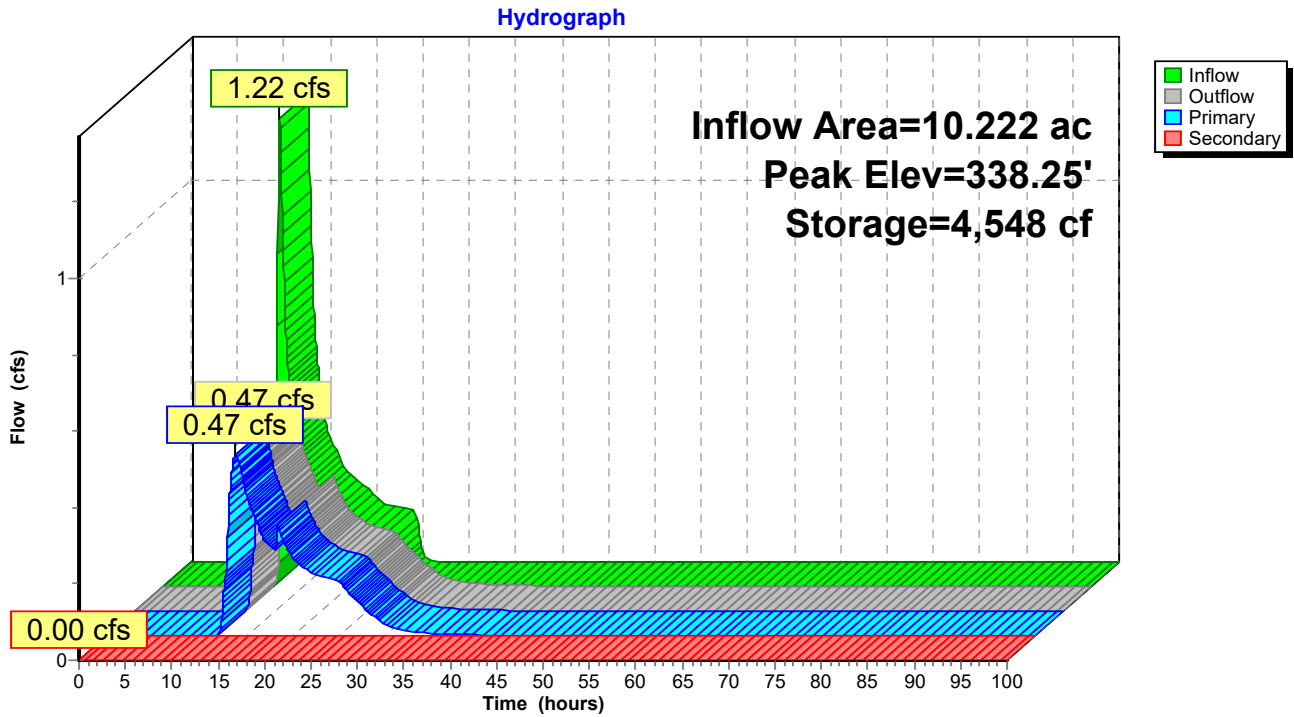
| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 338.50' | <b>26.0' long x 17.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2     | Primary   | 338.50' | <b>12.0" Horiz. Orifice/Grate</b> C= 0.600   |

|    |         |         |                                   |          |                                   |
|----|---------|---------|-----------------------------------|----------|-----------------------------------|
|    |         |         | Limited to weir flow at low heads |          |                                   |
| #3 | Primary | 337.86' | <b>6.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |
| #4 | Primary | 337.00' | <b>3.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |

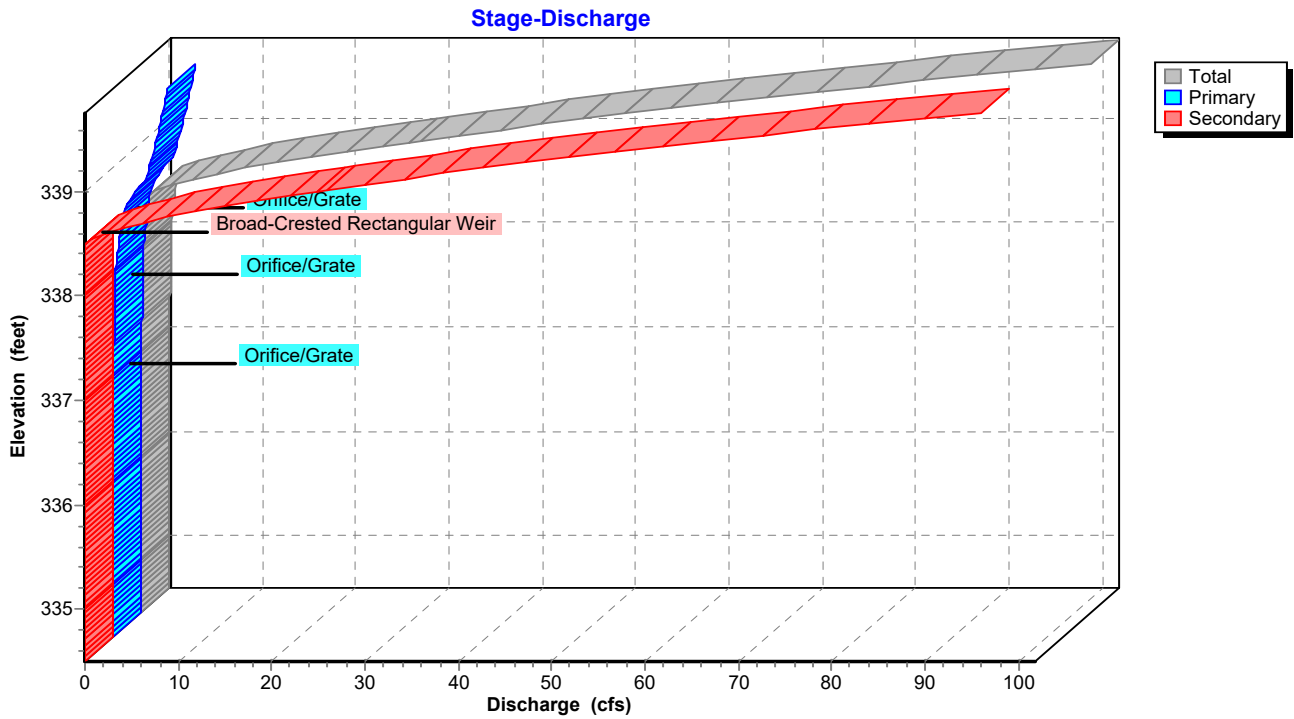
**Primary OutFlow** Max=0.47 cfs @ 13.86 hrs HW=338.25' TW=338.01' (Dynamic Tailwater)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **3=Orifice/Grate** (Orifice Controls 0.35 cfs @ 2.13 fps)  
 ↳ **4=Orifice/Grate** (Orifice Controls 0.12 cfs @ 2.37 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=337.00' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

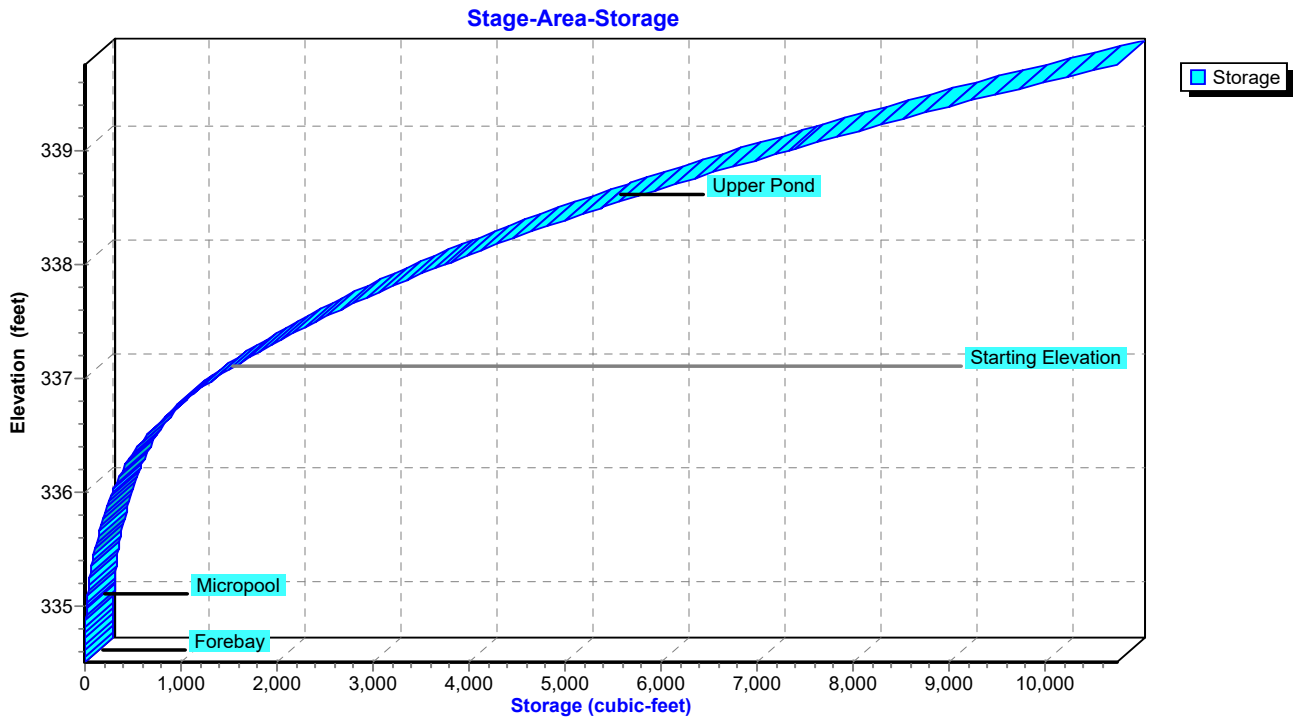
**Pond 4P: Proposed Stormwater Pond**



### Pond 4P: Proposed Stormwater Pond



### Pond 4P: Proposed Stormwater Pond



**Hydrograph for Pond 4P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 10.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>1.19</b>  | <b>2,265</b>         | <b>337.43</b>    | <b>0.09</b>   | <b>0.09</b>   | 0.00            |
| 15.00        | <b>0.33</b>  | <b>4,352</b>         | <b>338.19</b>    | <b>0.37</b>   | <b>0.37</b>   | 0.00            |
| 17.50        | 0.22         | 4,108                | 338.12           | 0.23          | 0.23          | 0.00            |
| 20.00        | 0.17         | 3,745                | 338.00           | 0.21          | 0.21          | 0.00            |
| 22.50        | 0.15         | 3,514                | 337.92           | 0.16          | 0.16          | 0.00            |
| 25.00        | 0.02         | 3,242                | 337.82           | 0.14          | 0.14          | 0.00            |
| 27.50        | 0.00         | 2,297                | 337.45           | 0.08          | 0.08          | 0.00            |
| 30.00        | 0.00         | 1,833                | 337.24           | 0.03          | 0.03          | 0.00            |
| 32.50        | 0.00         | 1,650                | 337.15           | 0.01          | 0.01          | 0.00            |
| 35.00        | 0.00         | 1,566                | 337.11           | 0.01          | 0.01          | 0.00            |
| 37.50        | 0.00         | 1,522                | 337.08           | 0.00          | 0.00          | 0.00            |
| 40.00        | 0.00         | 1,496                | 337.07           | 0.00          | 0.00          | 0.00            |
| 42.50        | 0.00         | 1,477                | 337.06           | 0.00          | 0.00          | 0.00            |
| 45.00        | 0.00         | 1,464                | 337.05           | 0.00          | 0.00          | 0.00            |
| 47.50        | 0.00         | 1,455                | 337.05           | 0.00          | 0.00          | 0.00            |
| 50.00        | 0.00         | 1,447                | 337.05           | 0.00          | 0.00          | 0.00            |
| 52.50        | 0.00         | 1,441                | 337.04           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,436                | 337.04           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,431                | 337.04           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,428                | 337.04           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,425                | 337.03           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,422                | 337.03           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,420                | 337.03           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,417                | 337.03           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,416                | 337.03           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,414                | 337.03           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,412                | 337.03           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,411                | 337.03           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,409                | 337.03           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,408                | 337.02           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,407                | 337.02           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,406                | 337.02           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,405                | 337.02           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,404                | 337.02           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,403                | 337.02           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,402                | 337.02           | 0.00          | 0.00          | 0.00            |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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**Stage-Discharge for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 334.50              | 0.00               | 0.00             | 0.00               | 337.15              | 0.04               | 0.04             | 0.00               |
| 334.55              | 0.00               | 0.00             | 0.00               | 337.20              | 0.06               | 0.06             | 0.00               |
| 334.60              | 0.00               | 0.00             | 0.00               | 337.25              | 0.08               | 0.08             | 0.00               |
| 334.65              | 0.00               | 0.00             | 0.00               | 337.30              | 0.10               | 0.10             | 0.00               |
| 334.70              | 0.00               | 0.00             | 0.00               | 337.35              | 0.11               | 0.11             | 0.00               |
| 334.75              | 0.00               | 0.00             | 0.00               | 337.40              | 0.12               | 0.12             | 0.00               |
| 334.80              | 0.00               | 0.00             | 0.00               | 337.45              | 0.13               | 0.13             | 0.00               |
| 334.85              | 0.00               | 0.00             | 0.00               | 337.50              | 0.14               | 0.14             | 0.00               |
| 334.90              | 0.00               | 0.00             | 0.00               | 337.55              | 0.15               | 0.15             | 0.00               |
| 334.95              | 0.00               | 0.00             | 0.00               | 337.60              | 0.16               | 0.16             | 0.00               |
| 335.00              | 0.00               | 0.00             | 0.00               | 337.65              | 0.17               | 0.17             | 0.00               |
| 335.05              | 0.00               | 0.00             | 0.00               | 337.70              | 0.18               | 0.18             | 0.00               |
| 335.10              | 0.00               | 0.00             | 0.00               | 337.75              | 0.19               | 0.19             | 0.00               |
| 335.15              | 0.00               | 0.00             | 0.00               | 337.80              | 0.19               | 0.19             | 0.00               |
| 335.20              | 0.00               | 0.00             | 0.00               | 337.85              | 0.20               | 0.20             | 0.00               |
| 335.25              | 0.00               | 0.00             | 0.00               | 337.90              | 0.21               | 0.21             | 0.00               |
| 335.30              | 0.00               | 0.00             | 0.00               | 337.95              | 0.24               | 0.24             | 0.00               |
| 335.35              | 0.00               | 0.00             | 0.00               | 338.00              | 0.28               | 0.28             | 0.00               |
| 335.40              | 0.00               | 0.00             | 0.00               | 338.05              | 0.33               | 0.33             | 0.00               |
| 335.45              | 0.00               | 0.00             | 0.00               | 338.10              | 0.39               | 0.39             | 0.00               |
| 335.50              | 0.00               | 0.00             | 0.00               | 338.15              | 0.46               | 0.46             | 0.00               |
| 335.55              | 0.00               | 0.00             | 0.00               | 338.20              | 0.53               | 0.53             | 0.00               |
| 335.60              | 0.00               | 0.00             | 0.00               | 338.25              | 0.60               | 0.60             | 0.00               |
| 335.65              | 0.00               | 0.00             | 0.00               | 338.30              | 0.67               | 0.67             | 0.00               |
| 335.70              | 0.00               | 0.00             | 0.00               | 338.35              | 0.73               | 0.73             | 0.00               |
| 335.75              | 0.00               | 0.00             | 0.00               | 338.40              | 0.78               | 0.78             | 0.00               |
| 335.80              | 0.00               | 0.00             | 0.00               | 338.45              | 0.82               | 0.82             | 0.00               |
| 335.85              | 0.00               | 0.00             | 0.00               | 338.50              | 0.87               | 0.87             | 0.00               |
| 335.90              | 0.00               | 0.00             | 0.00               | 338.55              | 1.80               | 1.02             | 0.78               |
| 335.95              | 0.00               | 0.00             | 0.00               | 338.60              | 3.48               | 1.27             | 2.20               |
| 336.00              | 0.00               | 0.00             | 0.00               | 338.65              | 5.63               | 1.58             | 4.05               |
| 336.05              | 0.00               | 0.00             | 0.00               | 338.70              | 8.17               | 1.94             | 6.23               |
| 336.10              | 0.00               | 0.00             | 0.00               | 338.75              | 11.07              | 2.34             | 8.73               |
| 336.15              | 0.00               | 0.00             | 0.00               | 338.80              | 14.27              | 2.78             | 11.49              |
| 336.20              | 0.00               | 0.00             | 0.00               | 338.85              | 17.76              | 3.25             | 14.51              |
| 336.25              | 0.00               | 0.00             | 0.00               | 338.90              | 21.31              | 3.55             | 17.76              |
| 336.30              | 0.00               | 0.00             | 0.00               | 338.95              | 24.91              | 3.72             | 21.19              |
| 336.35              | 0.00               | 0.00             | 0.00               | 339.00              | 28.71              | 3.89             | 24.82              |
| 336.40              | 0.00               | 0.00             | 0.00               | 339.05              | 32.68              | 4.05             | 28.63              |
| 336.45              | 0.00               | 0.00             | 0.00               | 339.10              | 36.83              | 4.20             | 32.63              |
| 336.50              | 0.00               | 0.00             | 0.00               | 339.15              | 40.93              | 4.35             | 36.58              |
| 336.55              | 0.00               | 0.00             | 0.00               | 339.20              | 45.15              | 4.49             | 40.66              |
| 336.60              | 0.00               | 0.00             | 0.00               | 339.25              | 49.47              | 4.63             | 44.84              |
| 336.65              | 0.00               | 0.00             | 0.00               | 339.30              | 53.88              | 4.76             | 49.11              |
| 336.70              | 0.00               | 0.00             | 0.00               | 339.35              | 58.63              | 4.89             | 53.74              |
| 336.75              | 0.00               | 0.00             | 0.00               | 339.40              | 63.51              | 5.02             | 58.49              |
| 336.80              | 0.00               | 0.00             | 0.00               | 339.45              | 68.52              | 5.14             | 63.38              |
| 336.85              | 0.00               | 0.00             | 0.00               | 339.50              | 73.64              | 5.26             | 68.38              |
| 336.90              | 0.00               | 0.00             | 0.00               | 339.55              | 79.02              | 5.38             | 73.64              |
| 336.95              | 0.00               | 0.00             | 0.00               | 339.60              | 84.53              | 5.49             | 79.04              |
| 337.00              | 0.00               | 0.00             | 0.00               | 339.65              | 90.17              | 5.60             | 84.57              |
| 337.05              | 0.01               | 0.01             | 0.00               | 339.70              | 95.94              | 5.71             | 90.23              |
| 337.10              | 0.02               | 0.02             | 0.00               | 339.75              | <b>101.75</b>      | <b>5.82</b>      | <b>95.93</b>       |

**Stage-Area-Storage for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 334.50              | 0                       | 337.15              | 1,652                   |
| 334.55              | 0                       | 337.20              | 1,754                   |
| 334.60              | 1                       | 337.25              | 1,859                   |
| 334.65              | 1                       | 337.30              | 1,966                   |
| 334.70              | 2                       | 337.35              | 2,076                   |
| 334.75              | 3                       | 337.40              | 2,188                   |
| 334.80              | 5                       | 337.45              | 2,303                   |
| 334.85              | 7                       | 337.50              | 2,421                   |
| 334.90              | 10                      | 337.55              | 2,542                   |
| 334.95              | 13                      | 337.60              | 2,665                   |
| 335.00              | 17                      | 337.65              | 2,791                   |
| 335.05              | 23                      | 337.70              | 2,920                   |
| 335.10              | 29                      | 337.75              | 3,052                   |
| 335.15              | 36                      | 337.80              | 3,187                   |
| 335.20              | 44                      | 337.85              | 3,325                   |
| 335.25              | 53                      | 337.90              | 3,466                   |
| 335.30              | 62                      | 337.95              | 3,610                   |
| 335.35              | 72                      | 338.00              | 3,757                   |
| 335.40              | 83                      | 338.05              | 3,907                   |
| 335.45              | 95                      | 338.10              | 4,060                   |
| 335.50              | 107                     | 338.15              | 4,216                   |
| 335.55              | 121                     | 338.20              | 4,375                   |
| 335.60              | 135                     | 338.25              | 4,538                   |
| 335.65              | 150                     | 338.30              | 4,703                   |
| 335.70              | 166                     | 338.35              | 4,872                   |
| 335.75              | 184                     | 338.40              | 5,044                   |
| 335.80              | 202                     | 338.45              | 5,220                   |
| 335.85              | 222                     | 338.50              | 5,399                   |
| 335.90              | 242                     | 338.55              | 5,580                   |
| 335.95              | 264                     | 338.60              | 5,764                   |
| 336.00              | 287                     | 338.65              | 5,951                   |
| 336.05              | 312                     | 338.70              | 6,140                   |
| 336.10              | 338                     | 338.75              | 6,332                   |
| 336.15              | 368                     | 338.80              | 6,527                   |
| 336.20              | 399                     | 338.85              | 6,724                   |
| 336.25              | 434                     | 338.90              | 6,923                   |
| 336.30              | 471                     | 338.95              | 7,126                   |
| 336.35              | 511                     | 339.00              | 7,331                   |
| 336.40              | 554                     | 339.05              | 7,539                   |
| 336.45              | 600                     | 339.10              | 7,749                   |
| 336.50              | 650                     | 339.15              | 7,962                   |
| 336.55              | 703                     | 339.20              | 8,178                   |
| 336.60              | 760                     | 339.25              | 8,397                   |
| 336.65              | 821                     | 339.30              | 8,619                   |
| 336.70              | 885                     | 339.35              | 8,843                   |
| 336.75              | 954                     | 339.40              | 9,070                   |
| 336.80              | 1,026                   | 339.45              | 9,300                   |
| 336.85              | 1,103                   | 339.50              | 9,533                   |
| 336.90              | 1,185                   | 339.55              | 9,769                   |
| 336.95              | 1,271                   | 339.60              | 10,008                  |
| 337.00              | 1,362                   | 339.65              | 10,250                  |
| 337.05              | 1,456                   | 339.70              | 10,494                  |
| 337.10              | 1,553                   | 339.75              | <b>10,742</b>           |

**Summary for Pond 5P: Proposed Infiltration Basin**

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=3)

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 1.69" for 10-yr event  
 Inflow = 13.84 cfs @ 12.14 hrs, Volume= 1.070 af  
 Outflow = 8.43 cfs @ 12.31 hrs, Volume= 1.070 af, Atten= 39%, Lag= 10.0 min  
 Discarded = 8.43 cfs @ 12.31 hrs, Volume= 1.070 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Primary area = Inflow area x 0.000  
 Peak Elev= 328.31' @ 12.31 hrs Surf.Area= 3,641 sf Storage= 6,516 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 4.8 min ( 848.7 - 843.9 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 330.50' | 10,455 cf     | <b>Upper Pond (Irregular)</b> Listed below (Recalc) -Impervious |
| #2     | 325.50' | 11,031 cf     | <b>Micropool (Irregular)</b> Listed below (Recalc)              |
| #3     | 325.50' | 6,296 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)                |
|        |         | 27,781 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 330.50           | 6,557             | 358.9         | 0                      | 0                      | 6,557            |
| 331.00           | 7,966             | 544.5         | 3,625                  | 3,625                  | 19,902           |
| 331.75           | 10,297            | 768.6         | 6,830                  | 10,455                 | 43,324           |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 906               | 129.8         | 0                      | 0                      | 906              |
| 326.00           | 1,122             | 143.2         | 506                    | 506                    | 1,205            |
| 327.00           | 1,594             | 165.7         | 1,351                  | 1,857                  | 1,779            |
| 328.00           | 2,135             | 187.0         | 1,858                  | 3,715                  | 2,403            |
| 329.00           | 2,732             | 208.0         | 2,427                  | 6,142                  | 3,092            |
| 330.00           | 3,382             | 226.7         | 3,051                  | 9,194                  | 3,774            |
| 330.50           | 3,974             | 250.8         | 1,837                  | 11,031                 | 4,697            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 295               | 81.6          | 0                      | 0                      | 295              |
| 326.00           | 426               | 92.6          | 179                    | 179                    | 454              |
| 327.00           | 755               | 119.2         | 583                    | 762                    | 914              |
| 328.00           | 1,185             | 151.4         | 962                    | 1,724                  | 1,621            |
| 329.00           | 1,678             | 173.2         | 1,424                  | 3,148                  | 2,207            |
| 330.00           | 2,227             | 192.4         | 1,946                  | 5,094                  | 2,794            |
| 330.50           | 2,583             | 209.3         | 1,201                  | 6,296                  | 3,344            |



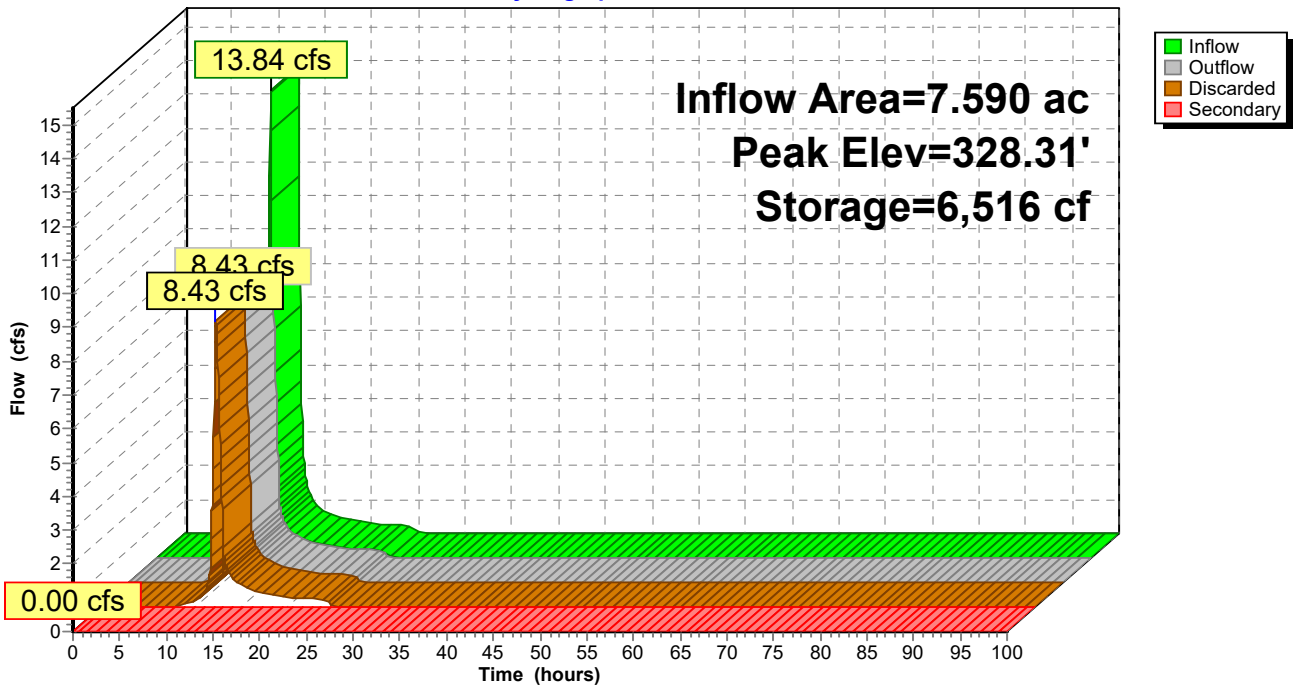
| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 331.25' | <b>10.0' long x 13.2' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.61 2.65 2.70 2.66 2.65 2.66 2.65 2.63 |
| #2     | Discarded | 325.50' | <b>100.000 in/hr Exfiltration over Horizontal area</b> Phase-In= 0.03'   |

**Discarded OutFlow** Max=8.42 cfs @ 12.31 hrs HW=328.31' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 8.42 cfs)

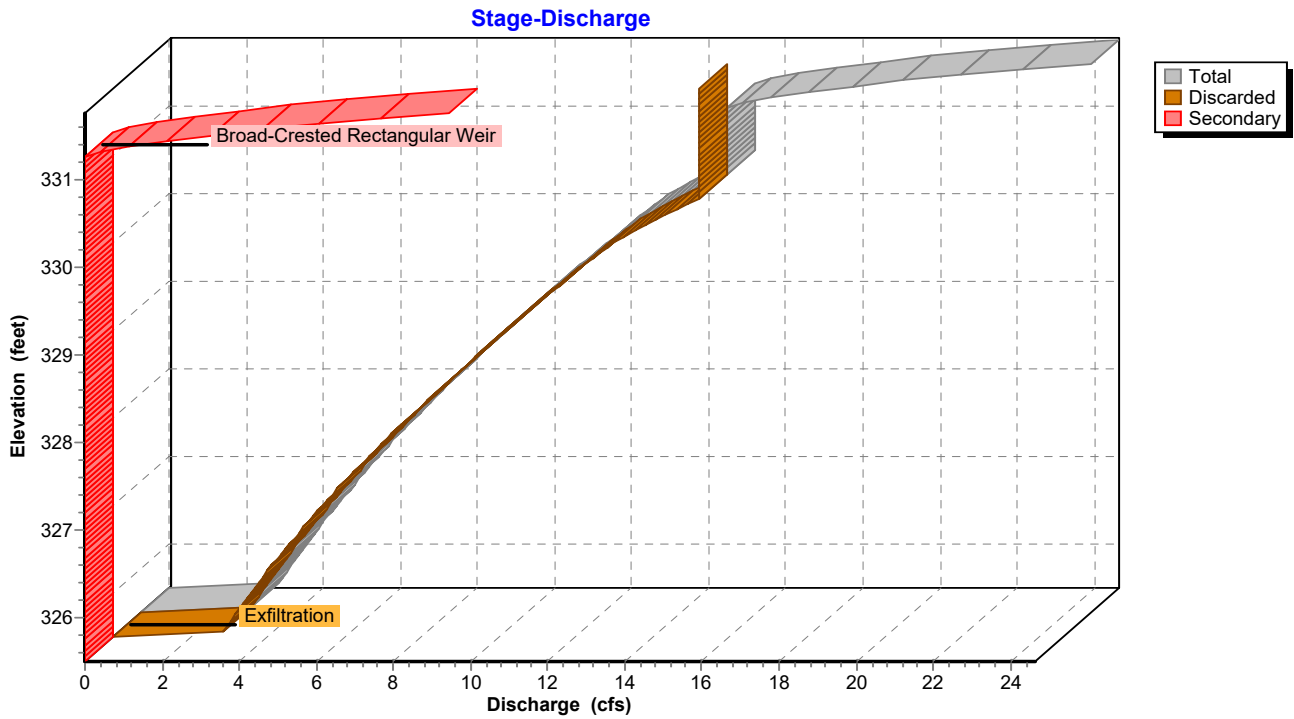
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=325.50' TW=0.00' (Dynamic Tailwater)  
 ↳1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond 5P: Proposed Infiltration Basin**

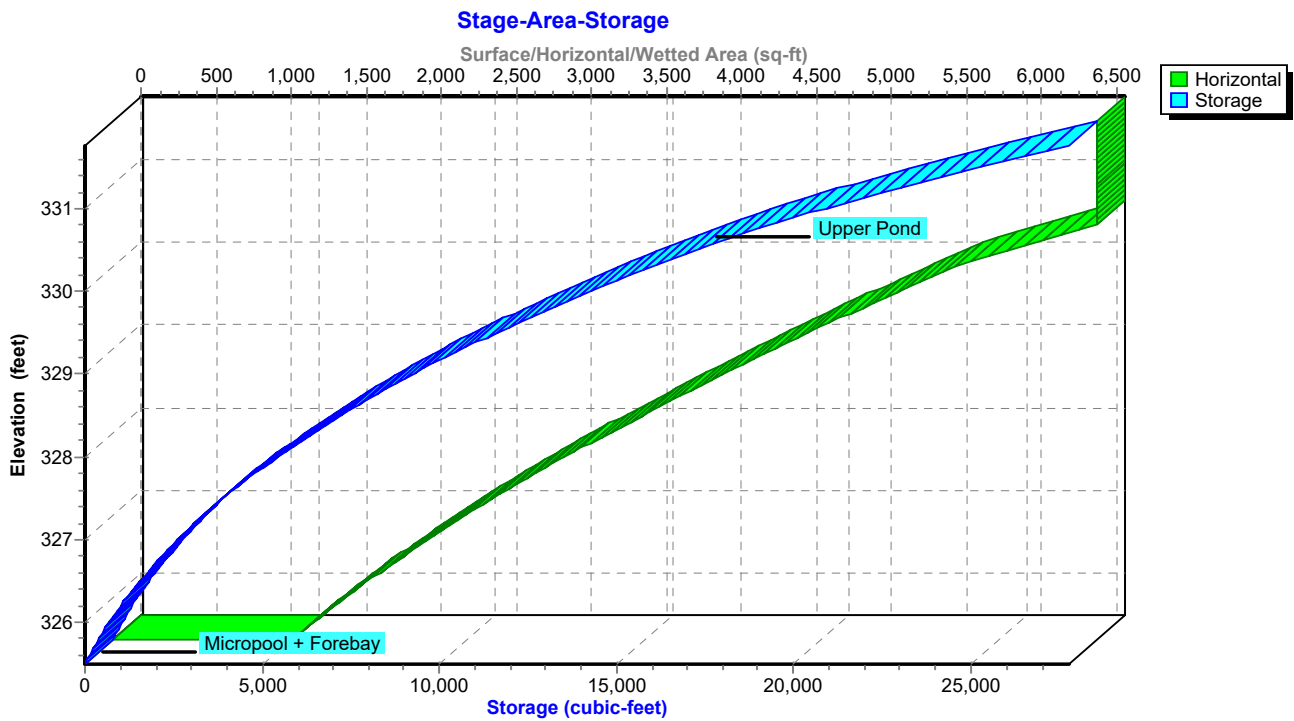
Hydrograph



### Pond 5P: Proposed Infiltration Basin



### Pond 5P: Proposed Infiltration Basin



**Hydrograph for Pond 5P: Proposed Infiltration Basin**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|-----------------|-----------------|
| 0.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | <b>0.00</b>     |
| 2.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 5.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 7.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 10.00        | <b>0.17</b>  | <b>2</b>             | <b>325.50</b>    | <b>0.17</b>   | <b>0.17</b>     | 0.00            |
| 12.50        | <b>3.82</b>  | <b>4,876</b>         | <b>327.83</b>    | <b>7.26</b>   | <b>7.26</b>     | 0.00            |
| 15.00        | 0.65         | 8                    | 325.51           | 0.65          | 0.65            | 0.00            |
| 17.50        | 0.41         | 5                    | 325.50           | 0.41          | 0.41            | 0.00            |
| 20.00        | 0.29         | 4                    | 325.50           | 0.29          | 0.29            | 0.00            |
| 22.50        | 0.25         | 3                    | 325.50           | 0.25          | 0.25            | 0.00            |
| 25.00        | 0.03         | 0                    | 325.50           | 0.03          | 0.03            | 0.00            |
| 27.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 30.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 32.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 35.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 37.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 40.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 42.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 45.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 47.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 50.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 52.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 55.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 57.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 60.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 62.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 65.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 67.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 70.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 72.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 75.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 77.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 80.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 82.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 85.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 87.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 90.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 92.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 95.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 97.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 100.00       | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

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**Stage-Discharge for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| 325.50              | 0.00               | 0.00               | 0.00               | 330.80              | 15.18              | 15.18              | 0.00               |
| 325.60              | 2.93               | 2.93               | 0.00               | 330.90              | 15.18              | 15.18              | 0.00               |
| 325.70              | 3.09               | 3.09               | 0.00               | 331.00              | 15.18              | 15.18              | 0.00               |
| 325.80              | 3.25               | 3.25               | 0.00               | 331.10              | 15.18              | 15.18              | 0.00               |
| 325.90              | 3.41               | 3.41               | 0.00               | 331.20              | 15.18              | 15.18              | 0.00               |
| 326.00              | 3.58               | 3.58               | 0.00               | 331.30              | 15.47              | 15.18              | 0.29               |
| 326.10              | 3.75               | 3.75               | 0.00               | 331.40              | 16.69              | 15.18              | 1.52               |
| 326.20              | 3.92               | 3.92               | 0.00               | 331.50              | 18.45              | 15.18              | 3.27               |
| 326.30              | 4.10               | 4.10               | 0.00               | 331.60              | 20.64              | 15.18              | 5.47               |
| 326.40              | 4.28               | 4.28               | 0.00               | 331.70              | <b>23.22</b>       | 15.18              | <b>8.04</b>        |
| 326.50              | 4.46               | 4.46               | 0.00               |                     |                    |                    |                    |
| 326.60              | 4.65               | 4.65               | 0.00               |                     |                    |                    |                    |
| 326.70              | 4.84               | 4.84               | 0.00               |                     |                    |                    |                    |
| 326.80              | 5.03               | 5.03               | 0.00               |                     |                    |                    |                    |
| 326.90              | 5.23               | 5.23               | 0.00               |                     |                    |                    |                    |
| 327.00              | 5.44               | 5.44               | 0.00               |                     |                    |                    |                    |
| 327.10              | 5.64               | 5.64               | 0.00               |                     |                    |                    |                    |
| 327.20              | 5.85               | 5.85               | 0.00               |                     |                    |                    |                    |
| 327.30              | 6.07               | 6.07               | 0.00               |                     |                    |                    |                    |
| 327.40              | 6.29               | 6.29               | 0.00               |                     |                    |                    |                    |
| 327.50              | 6.51               | 6.51               | 0.00               |                     |                    |                    |                    |
| 327.60              | 6.74               | 6.74               | 0.00               |                     |                    |                    |                    |
| 327.70              | 6.97               | 6.97               | 0.00               |                     |                    |                    |                    |
| 327.80              | 7.20               | 7.20               | 0.00               |                     |                    |                    |                    |
| 327.90              | 7.44               | 7.44               | 0.00               |                     |                    |                    |                    |
| 328.00              | 7.69               | 7.69               | 0.00               |                     |                    |                    |                    |
| 328.10              | 7.92               | 7.92               | 0.00               |                     |                    |                    |                    |
| 328.20              | 8.16               | 8.16               | 0.00               |                     |                    |                    |                    |
| 328.30              | 8.40               | 8.40               | 0.00               |                     |                    |                    |                    |
| 328.40              | 8.65               | 8.65               | 0.00               |                     |                    |                    |                    |
| 328.50              | 8.90               | 8.90               | 0.00               |                     |                    |                    |                    |
| 328.60              | 9.15               | 9.15               | 0.00               |                     |                    |                    |                    |
| 328.70              | 9.41               | 9.41               | 0.00               |                     |                    |                    |                    |
| 328.80              | 9.67               | 9.67               | 0.00               |                     |                    |                    |                    |
| 328.90              | 9.94               | 9.94               | 0.00               |                     |                    |                    |                    |
| 329.00              | 10.21              | 10.21              | 0.00               |                     |                    |                    |                    |
| 329.10              | 10.47              | 10.47              | 0.00               |                     |                    |                    |                    |
| 329.20              | 10.74              | 10.74              | 0.00               |                     |                    |                    |                    |
| 329.30              | 11.01              | 11.01              | 0.00               |                     |                    |                    |                    |
| 329.40              | 11.28              | 11.28              | 0.00               |                     |                    |                    |                    |
| 329.50              | 11.55              | 11.55              | 0.00               |                     |                    |                    |                    |
| 329.60              | 11.83              | 11.83              | 0.00               |                     |                    |                    |                    |
| 329.70              | 12.12              | 12.12              | 0.00               |                     |                    |                    |                    |
| 329.80              | 12.40              | 12.40              | 0.00               |                     |                    |                    |                    |
| 329.90              | 12.69              | 12.69              | 0.00               |                     |                    |                    |                    |
| 330.00              | 12.98              | 12.98              | 0.00               |                     |                    |                    |                    |
| 330.10              | 13.41              | 13.41              | 0.00               |                     |                    |                    |                    |
| 330.20              | 13.84              | 13.84              | 0.00               |                     |                    |                    |                    |
| 330.30              | 14.28              | 14.28              | 0.00               |                     |                    |                    |                    |
| 330.40              | 14.73              | 14.73              | 0.00               |                     |                    |                    |                    |
| 330.50              | 15.18              | <b>15.18</b>       | 0.00               |                     |                    |                    |                    |
| 330.60              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |
| 330.70              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |

**Stage-Area-Storage for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 325.50              | 1,201                 | 0                       | 330.80              | 6,557                 | 19,417                  |
| 325.60              | 1,267                 | 123                     | 330.90              | 6,557                 | 20,170                  |
| 325.70              | 1,334                 | 253                     | 331.00              | 6,557                 | 20,951                  |
| 325.80              | 1,404                 | 390                     | 331.10              | 6,557                 | 21,763                  |
| 325.90              | 1,475                 | 534                     | 331.20              | 6,557                 | 22,604                  |
| 326.00              | 1,548                 | 685                     | 331.30              | 6,557                 | 23,475                  |
| 326.10              | 1,620                 | 844                     | 331.40              | 6,557                 | 24,376                  |
| 326.20              | 1,694                 | 1,009                   | 331.50              | 6,557                 | 25,309                  |
| 326.30              | 1,770                 | 1,183                   | 331.60              | 6,557                 | 26,274                  |
| 326.40              | 1,847                 | 1,363                   | 331.70              | 6,557                 | <b>27,271</b>           |
| 326.50              | 1,926                 | 1,552                   |                     |                       |                         |
| 326.60              | 2,007                 | 1,749                   |                     |                       |                         |
| 326.70              | 2,090                 | 1,954                   |                     |                       |                         |
| 326.80              | 2,175                 | 2,167                   |                     |                       |                         |
| 326.90              | 2,261                 | 2,389                   |                     |                       |                         |
| 327.00              | 2,349                 | 2,619                   |                     |                       |                         |
| 327.10              | 2,438                 | 2,858                   |                     |                       |                         |
| 327.20              | 2,529                 | 3,107                   |                     |                       |                         |
| 327.30              | 2,622                 | 3,364                   |                     |                       |                         |
| 327.40              | 2,716                 | 3,631                   |                     |                       |                         |
| 327.50              | 2,813                 | 3,908                   |                     |                       |                         |
| 327.60              | 2,911                 | 4,194                   |                     |                       |                         |
| 327.70              | 3,010                 | 4,490                   |                     |                       |                         |
| 327.80              | 3,112                 | 4,796                   |                     |                       |                         |
| 327.90              | 3,215                 | 5,112                   |                     |                       |                         |
| 328.00              | 3,320                 | 5,439                   |                     |                       |                         |
| 328.10              | 3,422                 | 5,776                   |                     |                       |                         |
| 328.20              | 3,525                 | 6,123                   |                     |                       |                         |
| 328.30              | 3,630                 | 6,481                   |                     |                       |                         |
| 328.40              | 3,737                 | 6,850                   |                     |                       |                         |
| 328.50              | 3,845                 | 7,229                   |                     |                       |                         |
| 328.60              | 3,955                 | 7,619                   |                     |                       |                         |
| 328.70              | 4,066                 | 8,020                   |                     |                       |                         |
| 328.80              | 4,179                 | 8,432                   |                     |                       |                         |
| 328.90              | 4,294                 | 8,856                   |                     |                       |                         |
| 329.00              | 4,410                 | 9,291                   |                     |                       |                         |
| 329.10              | 4,523                 | 9,737                   |                     |                       |                         |
| 329.20              | 4,638                 | 10,195                  |                     |                       |                         |
| 329.30              | 4,754                 | 10,665                  |                     |                       |                         |
| 329.40              | 4,872                 | 11,146                  |                     |                       |                         |
| 329.50              | 4,991                 | 11,639                  |                     |                       |                         |
| 329.60              | 5,112                 | 12,145                  |                     |                       |                         |
| 329.70              | 5,234                 | 12,662                  |                     |                       |                         |
| 329.80              | 5,357                 | 13,191                  |                     |                       |                         |
| 329.90              | 5,482                 | 13,733                  |                     |                       |                         |
| 330.00              | 5,609                 | 14,288                  |                     |                       |                         |
| 330.10              | 5,793                 | 14,858                  |                     |                       |                         |
| 330.20              | 5,979                 | 15,447                  |                     |                       |                         |
| 330.30              | 6,169                 | 16,054                  |                     |                       |                         |
| 330.40              | 6,361                 | 16,681                  |                     |                       |                         |
| 330.50              | <b>6,557</b>          | 17,326                  |                     |                       |                         |
| 330.60              | 6,557                 | 17,996                  |                     |                       |                         |
| 330.70              | 6,557                 | 18,692                  |                     |                       |                         |

**Summary for Pond 6P: Proposed Stormwater Pond**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 2.21" for 10-yr event  
 Inflow = 2.68 cfs @ 12.11 hrs, Volume= 0.239 af  
 Outflow = 0.64 cfs @ 12.74 hrs, Volume= 0.239 af, Atten= 76%, Lag= 37.7 min  
 Primary = 0.64 cfs @ 12.74 hrs, Volume= 0.239 af  
 Routed to Reach R10 : 10" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP5 : Analysis Point 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 329.33' Surf.Area= 2,011 sf Storage= 1,574 cf  
 Peak Elev= 330.79' @ 12.74 hrs Surf.Area= 4,013 sf Storage= 6,053 cf (4,479 cf above start)

Plug-Flow detention time= 615.6 min calculated for 0.202 af (85% of inflow)  
 Center-of-Mass det. time= 445.9 min ( 1,294.5 - 848.6 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 331.75' | 6,028 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 327.75' | 8,305 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 327.50' | 2,269 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 16,603 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 331.75           | 5,523             | 306.7         | 0                      | 0                      | 5,523            |
| 332.00           | 5,830             | 312.4         | 1,419                  | 1,419                  | 5,814            |
| 332.75           | 6,467             | 324.9         | 4,609                  | 6,028                  | 6,492            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.75           | 200               | 93.4          | 0                      | 0                      | 200              |
| 328.00           | 271               | 98.0          | 59                     | 59                     | 274              |
| 329.00           | 1,297             | 155.9         | 720                    | 779                    | 1,451            |
| 330.00           | 2,476             | 197.8         | 1,855                  | 2,634                  | 2,643            |
| 331.00           | 3,318             | 222.9         | 2,887                  | 5,521                  | 3,510            |
| 331.75           | 4,121             | 250.8         | 2,784                  | 8,305                  | 4,576            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.50           | 29                | 23.3          | 0                      | 0                      | 29               |
| 328.00           | 88                | 35.9          | 28                     | 28                     | 90               |
| 329.00           | 282               | 61.1          | 176                    | 204                    | 291              |
| 330.00           | 574               | 85.9          | 419                    | 623                    | 590              |
| 331.00           | 968               | 111.0         | 762                    | 1,386                  | 995              |
| 331.75           | 1,402             | 143.0         | 884                    | 2,269                  | 1,649            |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

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| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.63' | <b>10.0' long x 7.8' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.42 2.53 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.67 2.68 2.71 2.75 |
| #2     | Primary   | 331.61' | <b>10.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads   |
| #3     | Primary   | 330.12' | <b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |
| #4     | Primary   | 329.33' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.64 cfs @ 12.74 hrs HW=330.79' TW=329.61' (Dynamic Tailwater)

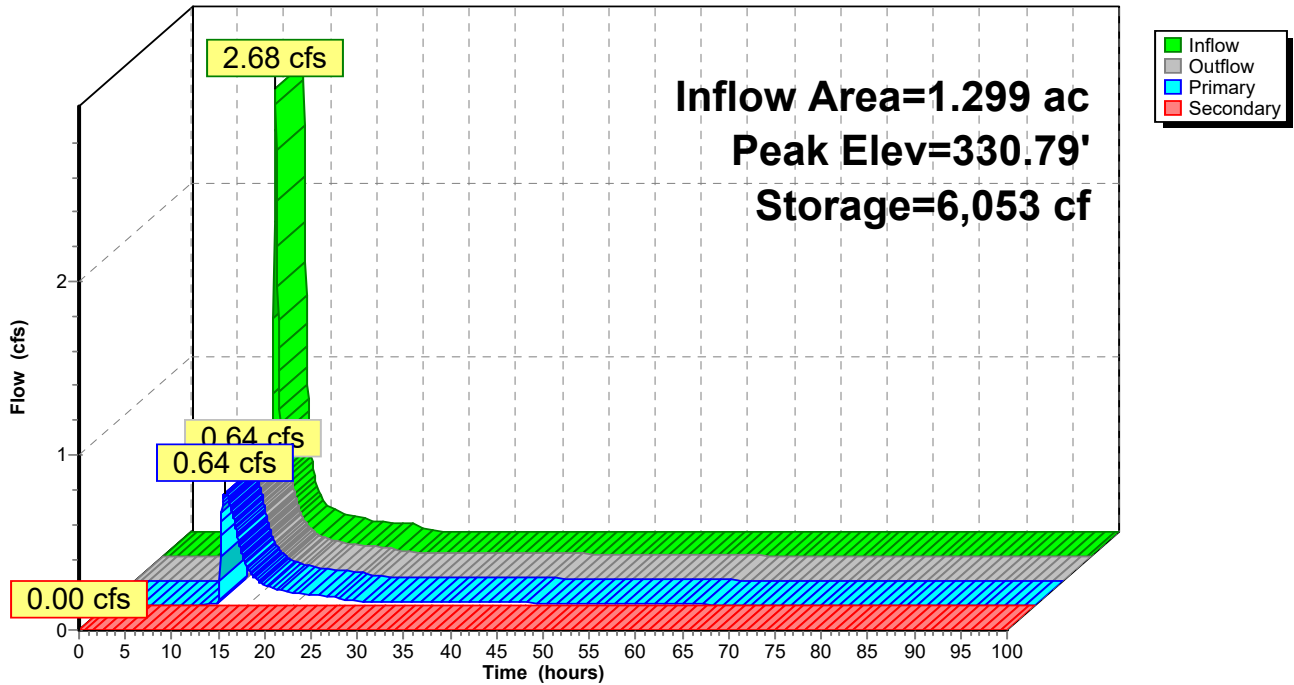
- ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)
- ↳ **3=Orifice/Grate** (Orifice Controls 0.62 cfs @ 3.14 fps)
- ↳ **4=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.24 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=329.33' TW=0.00' (Dynamic Tailwater)

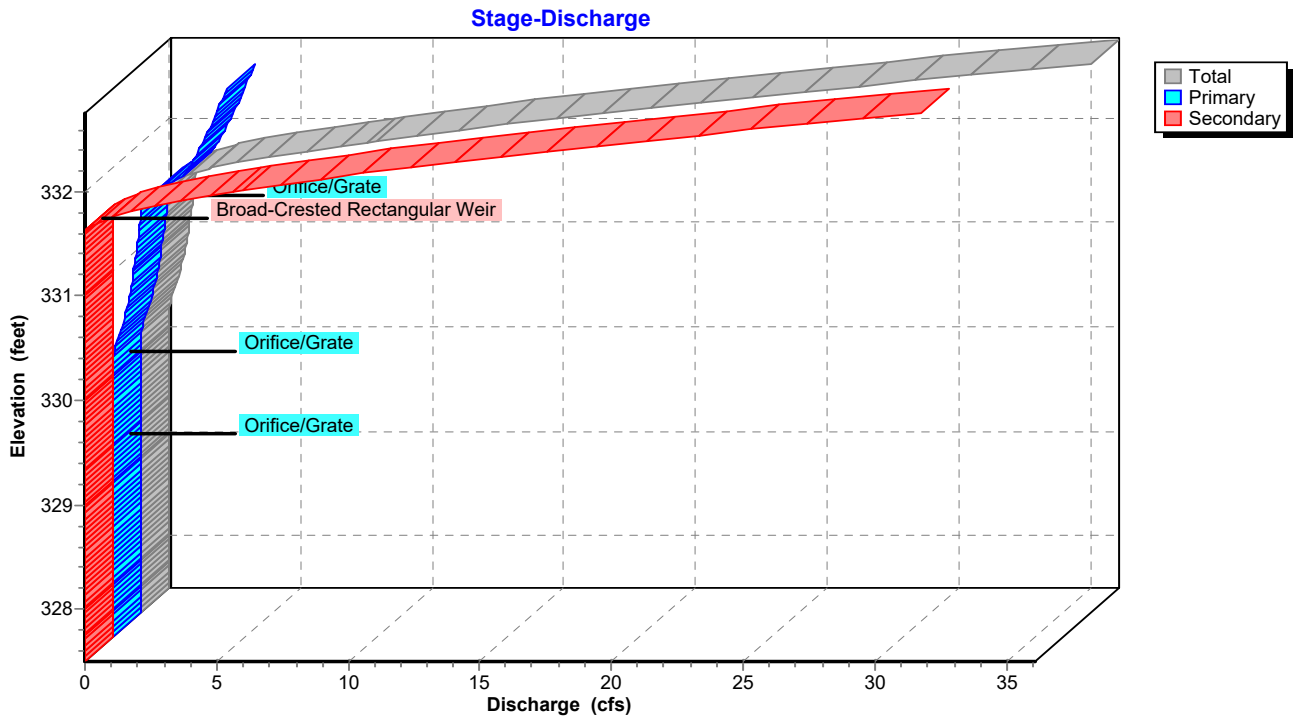
- ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Pond 6P: Proposed Stormwater Pond**

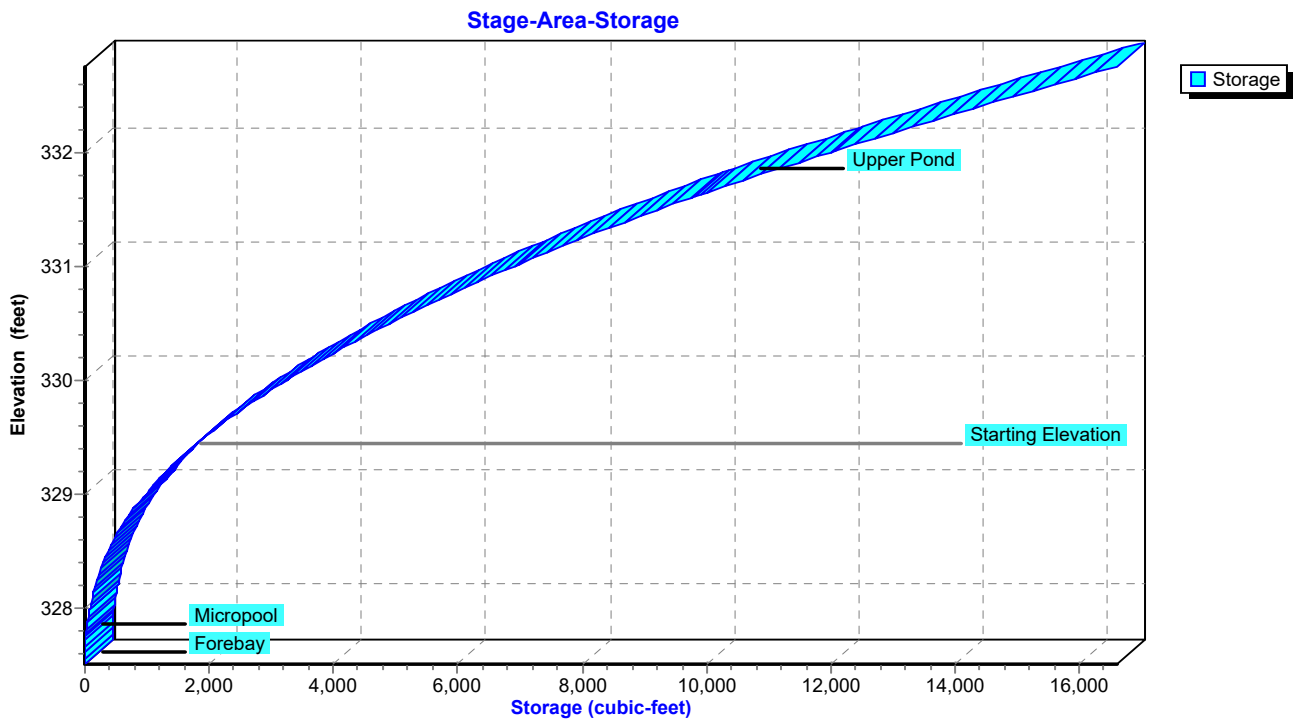
Hydrograph



### Pond 6P: Proposed Stormwater Pond



### Pond 6P: Proposed Stormwater Pond





**Hydrograph for Pond 6P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.03</b>  | 1,663                | 329.37           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>1.06</b>  | <b>5,888</b>         | <b>330.75</b>    | <b>0.61</b>   | <b>0.61</b>   | 0.00            |
| 15.00        | 0.14         | <b>4,566</b>         | <b>330.40</b>    | <b>0.23</b>   | <b>0.23</b>   | 0.00            |
| 17.50        | 0.09         | 4,192                | 330.29           | 0.11          | 0.11          | 0.00            |
| 20.00        | 0.06         | 4,060                | 330.25           | 0.07          | 0.07          | 0.00            |
| 22.50        | 0.05         | 3,976                | 330.23           | 0.06          | 0.06          | 0.00            |
| 25.00        | 0.01         | 3,883                | 330.20           | 0.04          | 0.04          | 0.00            |
| 27.50        | 0.00         | 3,663                | 330.13           | 0.02          | 0.02          | 0.00            |
| 30.00        | 0.00         | 3,474                | 330.07           | 0.02          | 0.02          | 0.00            |
| 32.50        | 0.00         | 3,287                | 330.01           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,106                | 329.95           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 2,934                | 329.89           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,770                | 329.83           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,616                | 329.78           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,472                | 329.72           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,338                | 329.67           | 0.01          | 0.01          | 0.00            |
| 50.00        | 0.00         | 2,215                | 329.62           | 0.01          | 0.01          | 0.00            |
| 52.50        | 0.00         | 2,103                | 329.57           | 0.01          | 0.01          | 0.00            |
| 55.00        | 0.00         | 2,003                | 329.53           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,916                | 329.49           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,840                | 329.46           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,778                | 329.43           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,728                | 329.40           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,692                | 329.39           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,667                | 329.38           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,650                | 329.37           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,638                | 329.36           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,629                | 329.36           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,622                | 329.35           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,617                | 329.35           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,612                | 329.35           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,609                | 329.35           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,606                | 329.35           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,603                | 329.34           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,601                | 329.34           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,599                | 329.34           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,597                | 329.34           | 0.00          | 0.00          | 0.00            |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 10-yr Rainfall=3.72"**

Prepared by CLA Site

Printed 12/13/2024

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**Stage-Discharge for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 327.50              | 0.00               | 0.00             | 0.00               | 330.15              | 0.03               | 0.03             | 0.00               |
| 327.55              | 0.00               | 0.00             | 0.00               | 330.20              | 0.04               | 0.04             | 0.00               |
| 327.60              | 0.00               | 0.00             | 0.00               | 330.25              | 0.07               | 0.07             | 0.00               |
| 327.65              | 0.00               | 0.00             | 0.00               | 330.30              | 0.12               | 0.12             | 0.00               |
| 327.70              | 0.00               | 0.00             | 0.00               | 330.35              | 0.17               | 0.17             | 0.00               |
| 327.75              | 0.00               | 0.00             | 0.00               | 330.40              | 0.23               | 0.23             | 0.00               |
| 327.80              | 0.00               | 0.00             | 0.00               | 330.45              | 0.30               | 0.30             | 0.00               |
| 327.85              | 0.00               | 0.00             | 0.00               | 330.50              | 0.36               | 0.36             | 0.00               |
| 327.90              | 0.00               | 0.00             | 0.00               | 330.55              | 0.43               | 0.43             | 0.00               |
| 327.95              | 0.00               | 0.00             | 0.00               | 330.60              | 0.49               | 0.49             | 0.00               |
| 328.00              | 0.00               | 0.00             | 0.00               | 330.65              | 0.53               | 0.53             | 0.00               |
| 328.05              | 0.00               | 0.00             | 0.00               | 330.70              | 0.57               | 0.57             | 0.00               |
| 328.10              | 0.00               | 0.00             | 0.00               | 330.75              | 0.61               | 0.61             | 0.00               |
| 328.15              | 0.00               | 0.00             | 0.00               | 330.80              | 0.65               | 0.65             | 0.00               |
| 328.20              | 0.00               | 0.00             | 0.00               | 330.85              | 0.69               | 0.69             | 0.00               |
| 328.25              | 0.00               | 0.00             | 0.00               | 330.90              | 0.72               | 0.72             | 0.00               |
| 328.30              | 0.00               | 0.00             | 0.00               | 330.95              | 0.75               | 0.75             | 0.00               |
| 328.35              | 0.00               | 0.00             | 0.00               | 331.00              | 0.78               | 0.78             | 0.00               |
| 328.40              | 0.00               | 0.00             | 0.00               | 331.05              | 0.81               | 0.81             | 0.00               |
| 328.45              | 0.00               | 0.00             | 0.00               | 331.10              | 0.84               | 0.84             | 0.00               |
| 328.50              | 0.00               | 0.00             | 0.00               | 331.15              | 0.87               | 0.87             | 0.00               |
| 328.55              | 0.00               | 0.00             | 0.00               | 331.20              | 0.90               | 0.90             | 0.00               |
| 328.60              | 0.00               | 0.00             | 0.00               | 331.25              | 0.92               | 0.92             | 0.00               |
| 328.65              | 0.00               | 0.00             | 0.00               | 331.30              | 0.95               | 0.95             | 0.00               |
| 328.70              | 0.00               | 0.00             | 0.00               | 331.35              | 0.97               | 0.97             | 0.00               |
| 328.75              | 0.00               | 0.00             | 0.00               | 331.40              | 1.00               | 1.00             | 0.00               |
| 328.80              | 0.00               | 0.00             | 0.00               | 331.45              | 1.02               | 1.02             | 0.00               |
| 328.85              | 0.00               | 0.00             | 0.00               | 331.50              | 1.04               | 1.04             | 0.00               |
| 328.90              | 0.00               | 0.00             | 0.00               | 331.55              | 1.07               | 1.07             | 0.00               |
| 328.95              | 0.00               | 0.00             | 0.00               | 331.60              | 1.09               | 1.09             | 0.00               |
| 329.00              | 0.00               | 0.00             | 0.00               | 331.65              | 1.25               | 1.18             | 0.07               |
| 329.05              | 0.00               | 0.00             | 0.00               | 331.70              | 1.81               | 1.36             | 0.45               |
| 329.10              | 0.00               | 0.00             | 0.00               | 331.75              | 2.61               | 1.60             | 1.01               |
| 329.15              | 0.00               | 0.00             | 0.00               | 331.80              | 3.58               | 1.88             | 1.70               |
| 329.20              | 0.00               | 0.00             | 0.00               | 331.85              | 4.71               | 2.20             | 2.51               |
| 329.25              | 0.00               | 0.00             | 0.00               | 331.90              | 6.00               | 2.55             | 3.45               |
| 329.30              | 0.00               | 0.00             | 0.00               | 331.95              | 7.26               | 2.76             | 4.50               |
| 329.35              | 0.00               | 0.00             | 0.00               | 332.00              | 8.55               | 2.89             | 5.66               |
| 329.40              | 0.00               | 0.00             | 0.00               | 332.05              | 9.94               | 3.01             | 6.93               |
| 329.45              | 0.01               | 0.01             | 0.00               | 332.10              | 11.47              | 3.13             | 8.34               |
| 329.50              | 0.01               | 0.01             | 0.00               | 332.15              | 13.10              | 3.23             | 9.87               |
| 329.55              | 0.01               | 0.01             | 0.00               | 332.20              | 14.85              | 3.34             | 11.51              |
| 329.60              | 0.01               | 0.01             | 0.00               | 332.25              | 16.62              | 3.44             | 13.18              |
| 329.65              | 0.01               | 0.01             | 0.00               | 332.30              | 18.33              | 3.54             | 14.79              |
| 329.70              | 0.02               | 0.02             | 0.00               | 332.35              | 20.09              | 3.63             | 16.46              |
| 329.75              | 0.02               | 0.02             | 0.00               | 332.40              | 21.91              | 3.73             | 18.19              |
| 329.80              | 0.02               | 0.02             | 0.00               | 332.45              | 23.78              | 3.82             | 19.97              |
| 329.85              | 0.02               | 0.02             | 0.00               | 332.50              | 25.70              | 3.90             | 21.80              |
| 329.90              | 0.02               | 0.02             | 0.00               | 332.55              | 27.67              | 3.99             | 23.68              |
| 329.95              | 0.02               | 0.02             | 0.00               | 332.60              | 29.69              | 4.07             | 25.62              |
| 330.00              | 0.02               | 0.02             | 0.00               | 332.65              | 31.76              | 4.15             | 27.61              |
| 330.05              | 0.02               | 0.02             | 0.00               | 332.70              | 33.90              | 4.23             | 29.66              |
| 330.10              | 0.02               | 0.02             | 0.00               | 332.75              | <b>36.08</b>       | <b>4.31</b>      | <b>31.77</b>       |

**Stage-Area-Storage for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 327.50              | 0                       | 330.15              | 3,727                   |
| 327.55              | 2                       | 330.20              | 3,890                   |
| 327.60              | 3                       | 330.25              | 4,055                   |
| 327.65              | 5                       | 330.30              | 4,224                   |
| 327.70              | 8                       | 330.35              | 4,395                   |
| 327.75              | 10                      | 330.40              | 4,569                   |
| 327.80              | 23                      | 330.45              | 4,747                   |
| 327.85              | 38                      | 330.50              | 4,927                   |
| 327.90              | 53                      | 330.55              | 5,111                   |
| 327.95              | 69                      | 330.60              | 5,297                   |
| 328.00              | 87                      | 330.65              | 5,487                   |
| 328.05              | 106                     | 330.70              | 5,680                   |
| 328.10              | 127                     | 330.75              | 5,876                   |
| 328.15              | 150                     | 330.80              | 6,076                   |
| 328.20              | 175                     | 330.85              | 6,279                   |
| 328.25              | 203                     | 330.90              | 6,484                   |
| 328.30              | 233                     | 330.95              | 6,694                   |
| 328.35              | 266                     | 331.00              | 6,906                   |
| 328.40              | 302                     | 331.05              | 7,123                   |
| 328.45              | 341                     | 331.10              | 7,343                   |
| 328.50              | 382                     | 331.15              | 7,567                   |
| 328.55              | 427                     | 331.20              | 7,795                   |
| 328.60              | 474                     | 331.25              | 8,027                   |
| 328.65              | 525                     | 331.30              | 8,263                   |
| 328.70              | 580                     | 331.35              | 8,503                   |
| 328.75              | 637                     | 331.40              | 8,747                   |
| 328.80              | 699                     | 331.45              | 8,995                   |
| 328.85              | 764                     | 331.50              | 9,248                   |
| 328.90              | 833                     | 331.55              | 9,505                   |
| 328.95              | 906                     | 331.60              | 9,765                   |
| 329.00              | 983                     | 331.65              | 10,031                  |
| 329.05              | 1,063                   | 331.70              | 10,300                  |
| 329.10              | 1,147                   | 331.75              | 10,574                  |
| 329.15              | 1,234                   | 331.80              | 10,852                  |
| 329.20              | 1,324                   | 331.85              | 11,133                  |
| 329.25              | 1,417                   | 331.90              | 11,416                  |
| 329.30              | 1,514                   | 331.95              | 11,703                  |
| 329.35              | 1,614                   | 332.00              | 11,993                  |
| 329.40              | 1,718                   | 332.05              | 12,286                  |
| 329.45              | 1,825                   | 332.10              | 12,580                  |
| 329.50              | 1,936                   | 332.15              | 12,877                  |
| 329.55              | 2,051                   | 332.20              | 13,176                  |
| 329.60              | 2,169                   | 332.25              | 13,477                  |
| 329.65              | 2,291                   | 332.30              | 13,780                  |
| 329.70              | 2,417                   | 332.35              | 14,085                  |
| 329.75              | 2,547                   | 332.40              | 14,392                  |
| 329.80              | 2,681                   | 332.45              | 14,701                  |
| 329.85              | 2,819                   | 332.50              | 15,013                  |
| 329.90              | 2,961                   | 332.55              | 15,327                  |
| 329.95              | 3,107                   | 332.60              | 15,642                  |
| 330.00              | 3,257                   | 332.65              | 15,960                  |
| 330.05              | 3,411                   | 332.70              | 16,280                  |
| 330.10              | 3,568                   | 332.75              | <b>16,603</b>           |

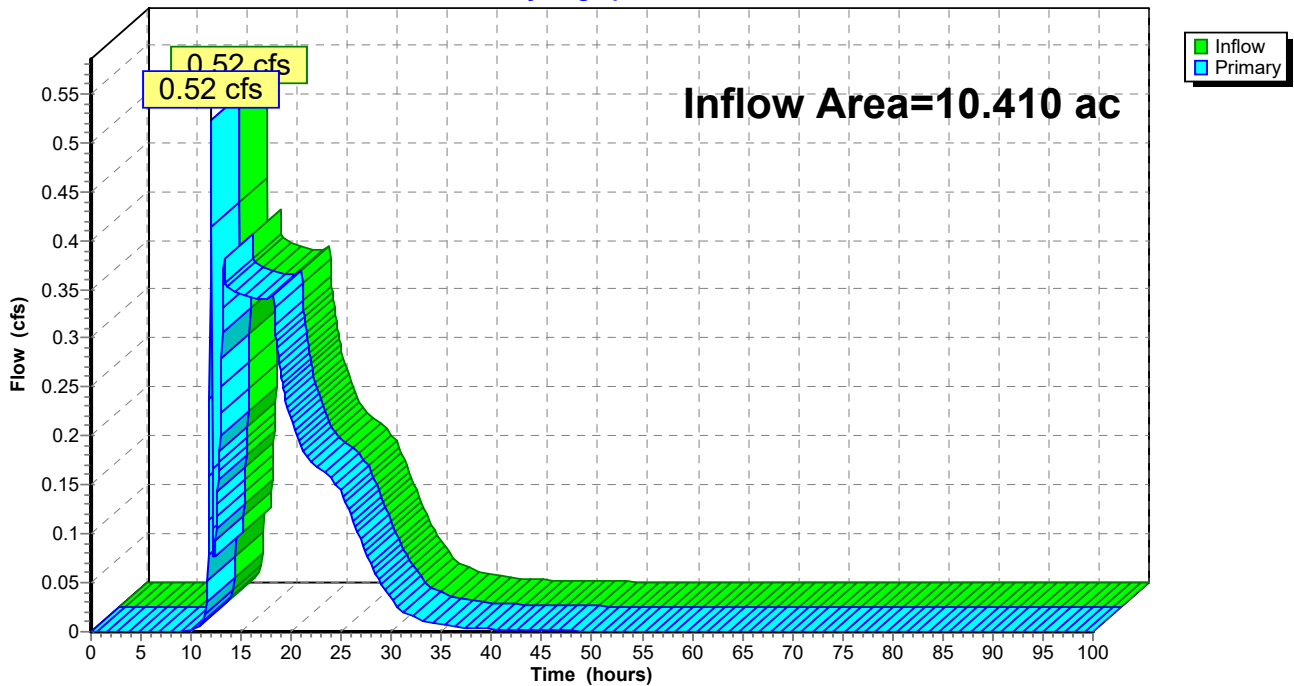
### Summary for Link AP3: Analysis Point 3

Inflow Area = 10.410 ac, 13.37% Impervious, Inflow Depth > 0.37" for 10-yr event  
Inflow = 0.52 cfs @ 11.98 hrs, Volume= 0.322 af  
Primary = 0.52 cfs @ 11.98 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3

Hydrograph



**Hydrograph for Link AP3: Analysis Point 3**

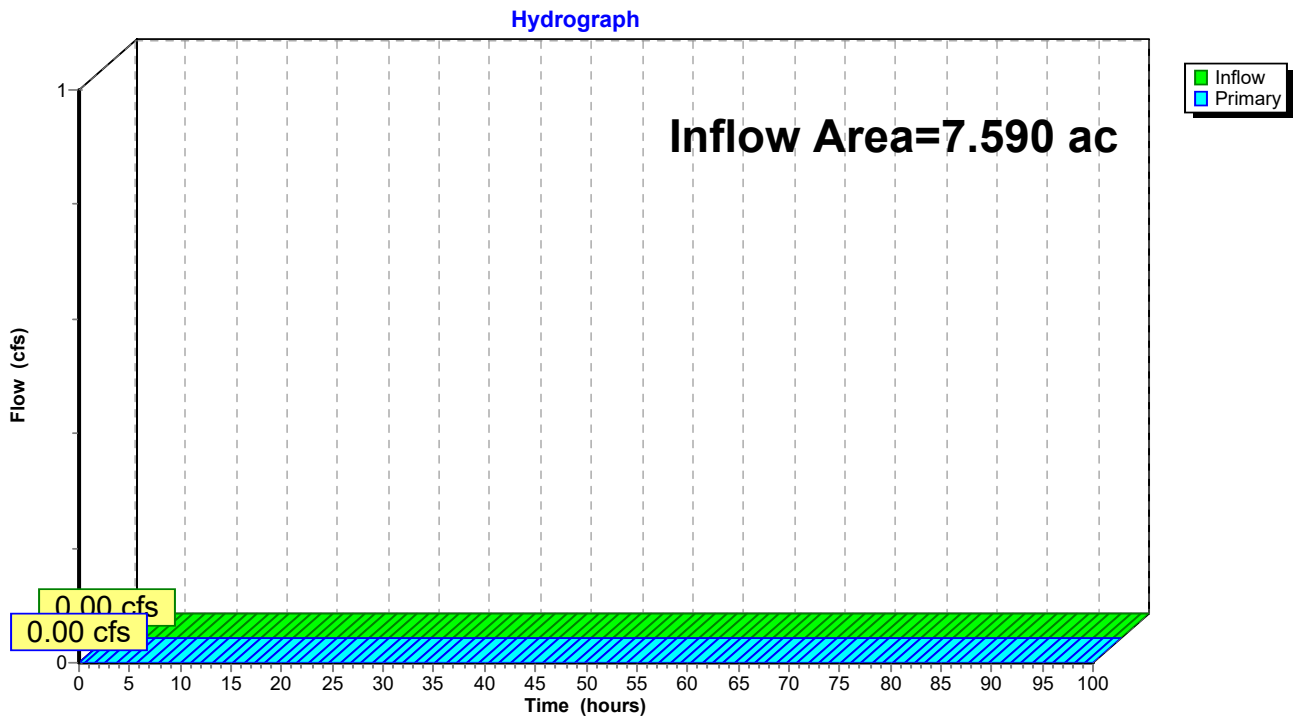
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.01         | 0.00             | 0.01          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.50</b>  | 0.00             | <b>0.50</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.25         | 0.00             | 0.25          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.35         | 0.00             | 0.35          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.35         | 0.00             | 0.35          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.34         | 0.00             | 0.34          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.34         | 0.00             | 0.34          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.34         | 0.00             | 0.34          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.26         | 0.00             | 0.26          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.21         | 0.00             | 0.21          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.19         | 0.00             | 0.19          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.17         | 0.00             | 0.17          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.16         | 0.00             | 0.16          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.16         | 0.00             | 0.16          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.14         | 0.00             | 0.14          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.12         | 0.00             | 0.12          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.09         | 0.00             | 0.09          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.07         | 0.00             | 0.07          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.05         | 0.00             | 0.05          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.03         | 0.00             | 0.03          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.02         | 0.00             | 0.02          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.01         | 0.00             | 0.01          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.01         | 0.00             | 0.01          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.01         | 0.00             | 0.01          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.01         | 0.00             | 0.01          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.00" for 10-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

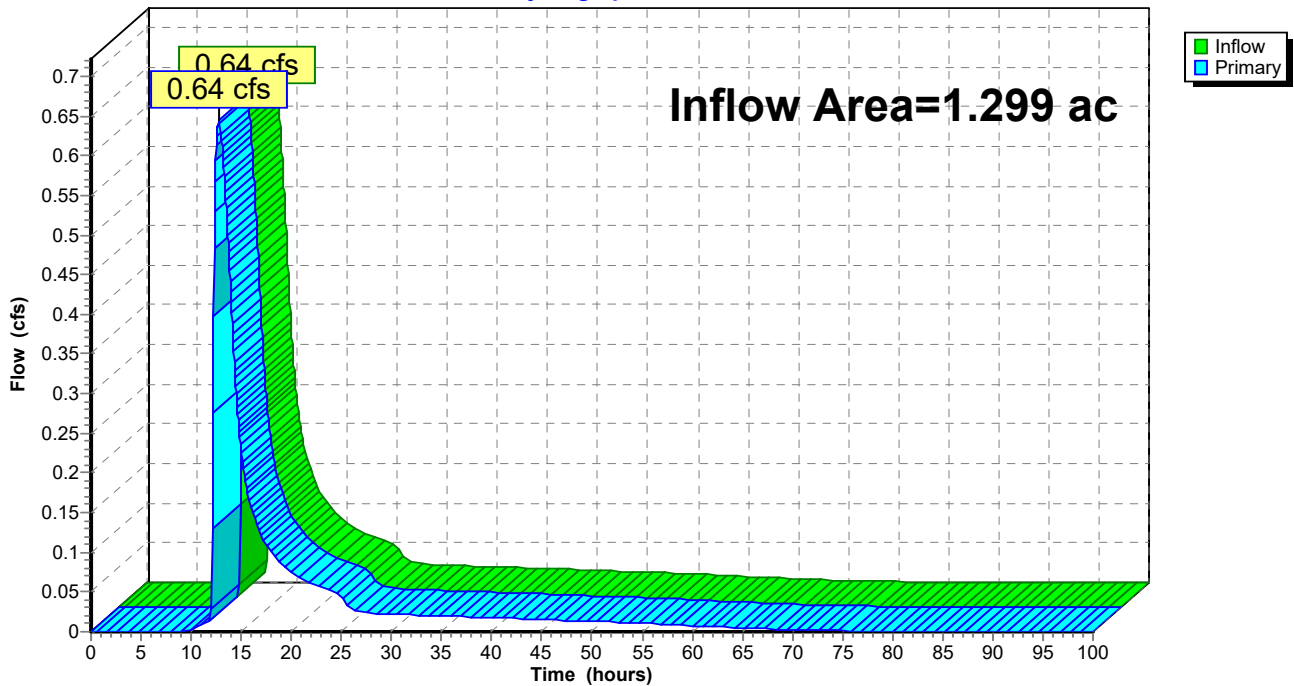
### Summary for Link AP5: Analysis Point 5

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 2.20" for 10-yr event  
Inflow = 0.64 cfs @ 12.72 hrs, Volume= 0.239 af  
Primary = 0.64 cfs @ 12.72 hrs, Volume= 0.239 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5

Hydrograph





**Hydrograph for Link AP5: Analysis Point 5**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.01         | 0.00             | 0.01          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.01         | 0.00             | 0.01          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | <b>0.02</b>  | 0.00             | <b>0.02</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.63</b>  | 0.00             | <b>0.63</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.41         | 0.00             | 0.41          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.23         | 0.00             | 0.23          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.15         | 0.00             | 0.15          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.12         | 0.00             | 0.12          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.10         | 0.00             | 0.10          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.09         | 0.00             | 0.09          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.07         | 0.00             | 0.07          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.07         | 0.00             | 0.07          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.06         | 0.00             | 0.06          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.06         | 0.00             | 0.06          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.05         | 0.00             | 0.05          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.04         | 0.00             | 0.04          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.03         | 0.00             | 0.03          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.02         | 0.00             | 0.02          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.02         | 0.00             | 0.02          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.02         | 0.00             | 0.02          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.02         | 0.00             | 0.02          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.02         | 0.00             | 0.02          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.02         | 0.00             | 0.02          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.01         | 0.00             | 0.01          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.01         | 0.00             | 0.01          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 49.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 50.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 51.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 52.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |

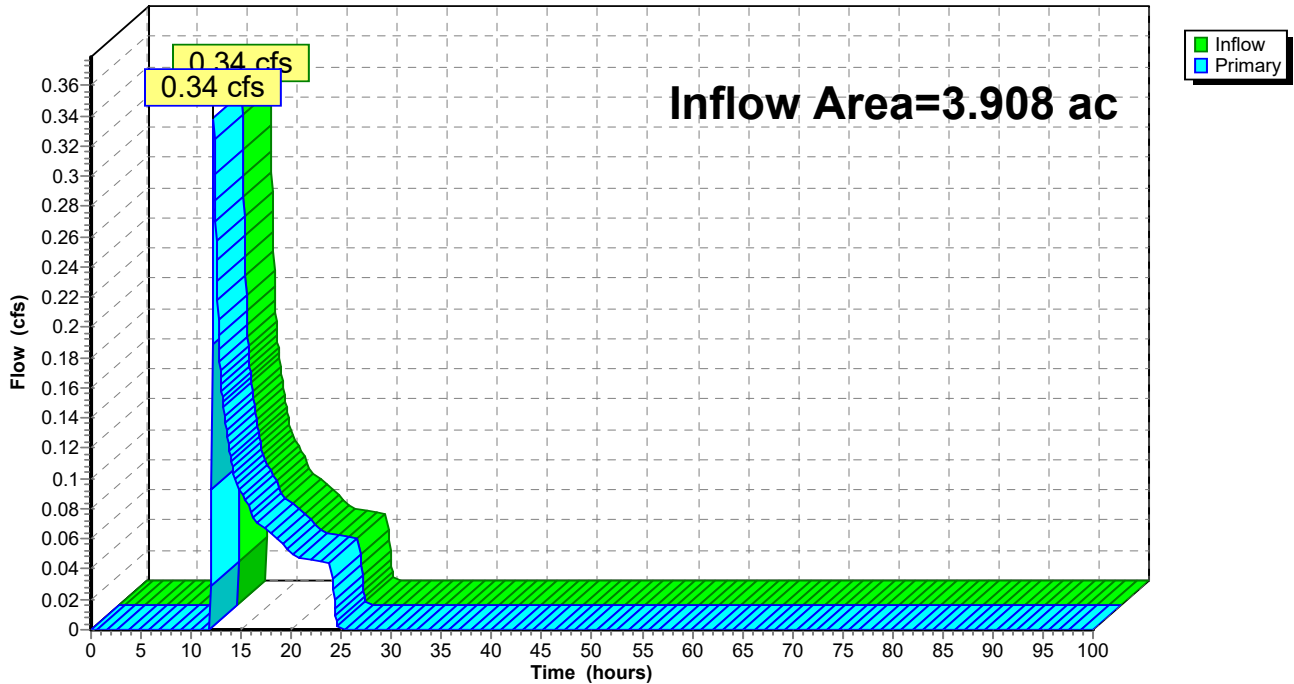
### Summary for Link AP6: Analysis Point 6

Inflow Area = 3.908 ac, 0.00% Impervious, Inflow Depth = 0.25" for 10-yr event  
Inflow = 0.34 cfs @ 12.25 hrs, Volume= 0.082 af  
Primary = 0.34 cfs @ 12.25 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6

Hydrograph



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.03</b>  | 0.00             | <b>0.03</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.16</b>  | 0.00             | <b>0.16</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.11         | 0.00             | 0.11          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.09         | 0.00             | 0.09          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.08         | 0.00             | 0.08          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.07         | 0.00             | 0.07          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.06         | 0.00             | 0.06          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.06         | 0.00             | 0.06          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.05         | 0.00             | 0.05          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.05         | 0.00             | 0.05          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.05         | 0.00             | 0.05          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.05         | 0.00             | 0.05          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.04         | 0.00             | 0.04          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

# 1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"

Prepared by CLA Site

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

|  |   |
|--|---|
| <b>Subcatchment 6S: Subcatchment 6</b>       | Runoff Area=1.299 ac 35.18% Impervious Runoff Depth=2.96"<br>Flow Length=73' Tc=9.6 min CN=85 Runoff=5.82 cfs 0.321 af  |
| <b>Subcatchment S4a: Subcatchment 4a</b>     | Runoff Area=10.222 ac 13.62% Impervious Runoff Depth=0.67"<br>Flow Length=907' Tc=38.7 min CN=53 Runoff=3.25 cfs 0.567 af                                     |
| <b>Subcatchment S4b: Subcatchment 4b</b>     | Runoff Area=0.188 ac 0.00% Impervious Runoff Depth=2.26"<br>Tc=6.0 min CN=77 Runoff=0.73 cfs 0.035 af   |
| <b>Subcatchment S5a: Subcatchment 5a</b>     | Runoff Area=5.515 ac 54.87% Impervious Runoff Depth=2.96"<br>Flow Length=634' Tc=17.7 min CN=85 Runoff=19.21 cfs 1.362 af                                     |
| <b>Subcatchment S5b: Subcatchment 5b</b>     | Runoff Area=2.075 ac 33.06% Impervious Runoff Depth=0.62"<br>Flow Length=207' Tc=68.8 min CN=52 Runoff=0.39 cfs 0.107 af                                      |
| <b>Subcatchment S7: Subcatchment 7</b>       | Runoff Area=3.908 ac 0.00% Impervious Runoff Depth=0.52"<br>Flow Length=531' Tc=19.9 min CN=50 Runoff=1.28 cfs 0.170 af                                       |
| <b>Reach R10: 10" Culvert Pond Discharge</b> | Avg. Flow Depth=0.33' Max Vel=4.33 fps Inflow=0.88 cfs 0.320 af<br>10.0" Round Pipe n=0.012 L=27.0' S=0.0122 '/' Capacity=2.62 cfs Outflow=0.88 cfs 0.320 af  |
| <b>Reach R11: Proposed RRv Swale - 268'</b>  | Avg. Flow Depth=0.57' Max Vel=1.52 fps Inflow=3.25 cfs 0.567 af<br>n=0.035 L=268.0' S=0.0047 '/' Capacity=16.83 cfs Outflow=3.22 cfs 0.567 af                 |
| <b>Reach R12: 12" Culvert Pond Discharge</b> | Avg. Flow Depth=1.00' Max Vel=0.47 fps Inflow=1.07 cfs 0.503 af<br>12.0" Round Pipe n=0.012 L=137.0' S=0.0001 '/' Capacity=0.33 cfs Outflow=0.33 cfs 0.503 af |
| <b>Reach R7: Proposed RRv Swale</b>          | Avg. Flow Depth=1.28' Max Vel=1.84 fps Inflow=19.21 cfs 1.362 af<br>n=0.080 L=318.0' S=0.0126 '/' Capacity=35.37 cfs Outflow=18.55 cfs 1.362 af               |
| <b>Reach R8: Proposed RRv Swale</b>          | Avg. Flow Depth=0.20' Max Vel=0.70 fps Inflow=0.39 cfs 0.107 af<br>n=0.080 L=568.0' S=0.0158 '/' Capacity=8.32 cfs Outflow=0.37 cfs 0.107 af                  |
| <b>Reach R9: Proposed RRV Swale</b>          | Avg. Flow Depth=0.88' Max Vel=0.92 fps Inflow=5.82 cfs 0.321 af<br>n=0.080 L=764.0' S=0.0056 '/' Capacity=8.04 cfs Outflow=3.72 cfs 0.321 af                  |
| <b>Pond 4P: Proposed Stormwater Pond</b>     | Peak Elev=338.58' Storage=5,697 cf Inflow=3.22 cfs 0.567 af<br>Primary=1.07 cfs 0.503 af Secondary=1.62 cfs 0.063 af Outflow=2.68 cfs 0.567 af                |
| <b>Pond 5P: Proposed Infiltration Basin</b>  | Peak Elev=329.16' Storage=9,999 cf Inflow=18.55 cfs 1.469 af<br>Discarded=10.62 cfs 1.469 af Secondary=0.00 cfs 0.000 af Outflow=10.62 cfs 1.469 af           |
| <b>Pond 6P: Proposed Stormwater Pond</b>     | Peak Elev=331.17' Storage=7,639 cf Inflow=3.72 cfs 0.321 af<br>Primary=0.88 cfs 0.320 af Secondary=0.00 cfs 0.000 af Outflow=0.88 cfs 0.320 af                |
| <b>Link AP3: Analysis Point 3</b>            | Inflow=2.00 cfs 0.602 af<br>Primary=2.00 cfs 0.602 af   |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

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**Link AP4: Analysis Point 4**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP5: Analysis Point 5**

Inflow=0.88 cfs 0.320 af  
Primary=0.88 cfs 0.320 af

**Link AP6: Analysis Point 6**

Inflow=1.28 cfs 0.170 af  
Primary=1.28 cfs 0.170 af

**Total Runoff Area = 23.207 ac   Runoff Volume = 2.562 af   Average Runoff Depth = 1.32"**  
**76.04% Pervious = 17.646 ac   23.96% Impervious = 5.561 ac**

**Summary for Subcatchment 6S: Subcatchment 6**

Runoff = 5.82 cfs @ 12.01 hrs, Volume= 0.321 af, Depth= 2.96"  
 Routed to Reach R9 : Proposed RRV Swale

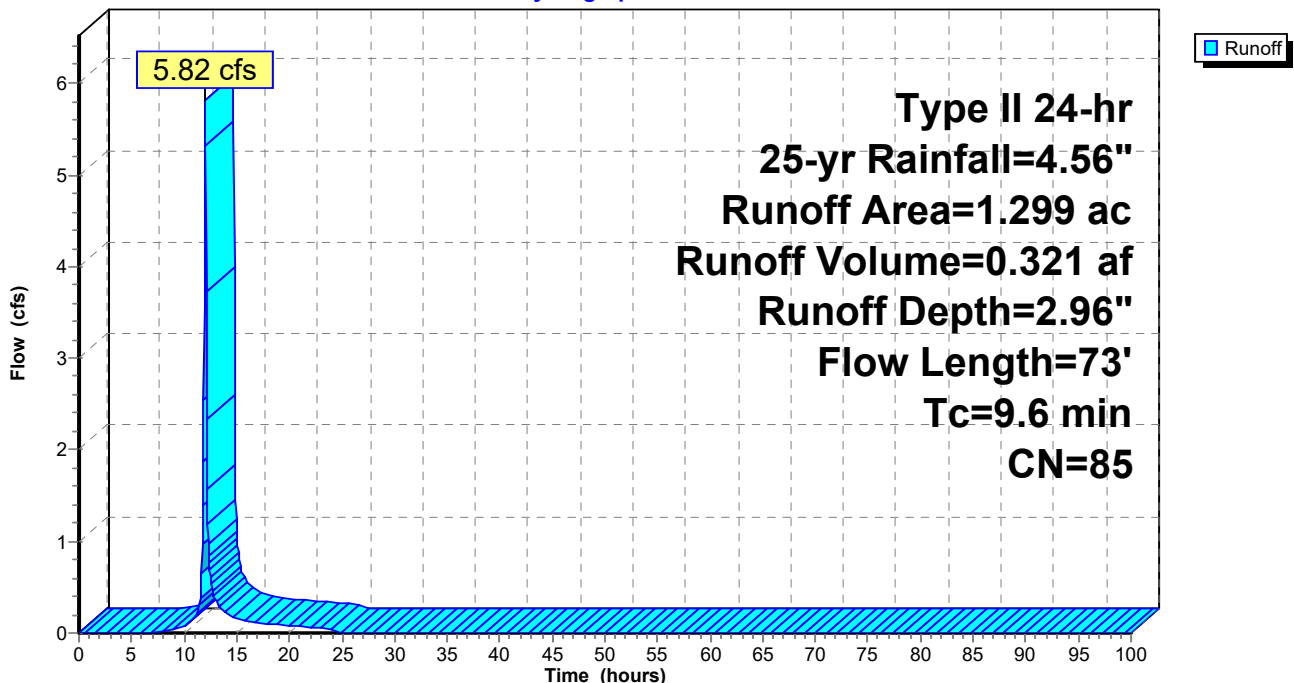
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.411     | 98 | Paved parking, HSG D      |
| 0.021     | 30 | Meadow, non-grazed, HSG A |
| 0.057     | 94 | Fallow, bare soil, HSG D  |
| 0.764     | 78 | Meadow, non-grazed, HSG D |
| * 0.046   | 98 | Water Surface, HSG D      |
| 1.299     | 85 | Weighted Average          |
| 0.842     |    | 64.82% Pervious Area      |
| 0.457     |    | 35.18% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.6      | 65            | 0.0154        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59" |
| 1.0      | 8             | 0.1328        | 0.14              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59" |
| 9.6      | 73            | Total         |                   |                |  |

**Subcatchment 6S: Subcatchment 6**

Hydrograph



**Hydrograph for Subcatchment 6S: Subcatchment 6**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.96            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.96            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.96            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.96            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.96            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.96            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.96            | 0.00         |
| 7.00         | 0.45             | 0.01            | 0.01         | 60.00        | 4.56             | 2.96            | 0.00         |
| 8.00         | 0.55             | 0.02            | 0.02         | 61.00        | 4.56             | 2.96            | 0.00         |
| 9.00         | 0.67             | 0.05            | 0.05         | 62.00        | 4.56             | 2.96            | 0.00         |
| 10.00        | 0.83             | 0.10            | 0.08         | 63.00        | 4.56             | 2.96            | 0.00         |
| 11.00        | 1.07             | 0.21            | 0.19         | 64.00        | 4.56             | 2.96            | 0.00         |
| 12.00        | 3.02             | 1.61            | <b>5.81</b>  | 65.00        | 4.56             | 2.96            | 0.00         |
| 13.00        | 3.52             | 2.03            | 0.36         | 66.00        | 4.56             | 2.96            | 0.00         |
| 14.00        | 3.74             | 2.23            | 0.21         | 67.00        | 4.56             | 2.96            | 0.00         |
| 15.00        | 3.89             | 2.36            | 0.16         | 68.00        | 4.56             | 2.96            | 0.00         |
| 16.00        | 4.01             | 2.47            | 0.13         | 69.00        | 4.56             | 2.96            | 0.00         |
| 17.00        | 4.11             | 2.56            | 0.11         | 70.00        | 4.56             | 2.96            | 0.00         |
| 18.00        | 4.20             | 2.64            | 0.10         | 71.00        | 4.56             | 2.96            | 0.00         |
| 19.00        | 4.28             | 2.71            | 0.09         | 72.00        | 4.56             | 2.96            | 0.00         |
| 20.00        | 4.34             | 2.76            | 0.07         | 73.00        | 4.56             | 2.96            | 0.00         |
| 21.00        | 4.40             | 2.82            | 0.07         | 74.00        | 4.56             | 2.96            | 0.00         |
| 22.00        | 4.46             | 2.87            | 0.07         | 75.00        | 4.56             | 2.96            | 0.00         |
| 23.00        | 4.51             | 2.92            | 0.06         | 76.00        | 4.56             | 2.96            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.96</b>     | 0.06         | 77.00        | 4.56             | 2.96            | 0.00         |
| 25.00        | 4.56             | 2.96            | 0.00         | 78.00        | 4.56             | 2.96            | 0.00         |
| 26.00        | 4.56             | 2.96            | 0.00         | 79.00        | 4.56             | 2.96            | 0.00         |
| 27.00        | 4.56             | 2.96            | 0.00         | 80.00        | 4.56             | 2.96            | 0.00         |
| 28.00        | 4.56             | 2.96            | 0.00         | 81.00        | 4.56             | 2.96            | 0.00         |
| 29.00        | 4.56             | 2.96            | 0.00         | 82.00        | 4.56             | 2.96            | 0.00         |
| 30.00        | 4.56             | 2.96            | 0.00         | 83.00        | 4.56             | 2.96            | 0.00         |
| 31.00        | 4.56             | 2.96            | 0.00         | 84.00        | 4.56             | 2.96            | 0.00         |
| 32.00        | 4.56             | 2.96            | 0.00         | 85.00        | 4.56             | 2.96            | 0.00         |
| 33.00        | 4.56             | 2.96            | 0.00         | 86.00        | 4.56             | 2.96            | 0.00         |
| 34.00        | 4.56             | 2.96            | 0.00         | 87.00        | 4.56             | 2.96            | 0.00         |
| 35.00        | 4.56             | 2.96            | 0.00         | 88.00        | 4.56             | 2.96            | 0.00         |
| 36.00        | 4.56             | 2.96            | 0.00         | 89.00        | 4.56             | 2.96            | 0.00         |
| 37.00        | 4.56             | 2.96            | 0.00         | 90.00        | 4.56             | 2.96            | 0.00         |
| 38.00        | 4.56             | 2.96            | 0.00         | 91.00        | 4.56             | 2.96            | 0.00         |
| 39.00        | 4.56             | 2.96            | 0.00         | 92.00        | 4.56             | 2.96            | 0.00         |
| 40.00        | 4.56             | 2.96            | 0.00         | 93.00        | 4.56             | 2.96            | 0.00         |
| 41.00        | 4.56             | 2.96            | 0.00         | 94.00        | 4.56             | 2.96            | 0.00         |
| 42.00        | 4.56             | 2.96            | 0.00         | 95.00        | 4.56             | 2.96            | 0.00         |
| 43.00        | 4.56             | 2.96            | 0.00         | 96.00        | 4.56             | 2.96            | 0.00         |
| 44.00        | 4.56             | 2.96            | 0.00         | 97.00        | 4.56             | 2.96            | 0.00         |
| 45.00        | 4.56             | 2.96            | 0.00         | 98.00        | 4.56             | 2.96            | 0.00         |
| 46.00        | 4.56             | 2.96            | 0.00         | 99.00        | 4.56             | 2.96            | 0.00         |
| 47.00        | 4.56             | 2.96            | 0.00         | 100.00       | 4.56             | 2.96            | 0.00         |
| 48.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 3.25 cfs @ 12.45 hrs, Volume= 0.567 af, Depth= 0.67"

Routed to Reach R11 : Proposed RRv Swale - 268' Prior to Stormwater Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| * 0.470   | 98 | Paved roads, HSG A            |
| 0.681     | 39 | >75% Grass cover, Good, HSG A |
| 0.818     | 30 | Meadow, non-grazed, HSG A     |
| 0.105     | 98 | Roofs, HSG A                  |
| 0.331     | 98 | Paved parking, HSG A          |
| 0.247     | 98 | Paved parking, HSG D          |
| 4.615     | 30 | Woods, Good, HSG A            |
| 0.519     | 77 | Woods, Good, HSG D            |
| 0.020     | 94 | Fallow, bare soil, HSG D      |
| 2.177     | 80 | >75% Grass cover, Good, HSG D |
| 0.118     | 98 | Roofs, HSG D                  |
| 0.079     | 98 | Paved parking, HSG D          |
| 0.042     | 98 | Water Surface, HSG D          |
| 10.222    | 53 | Weighted Average              |
| 8.830     |    | 86.38% Pervious Area          |
| 1.392     |    | 13.62% Impervious Area        |



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

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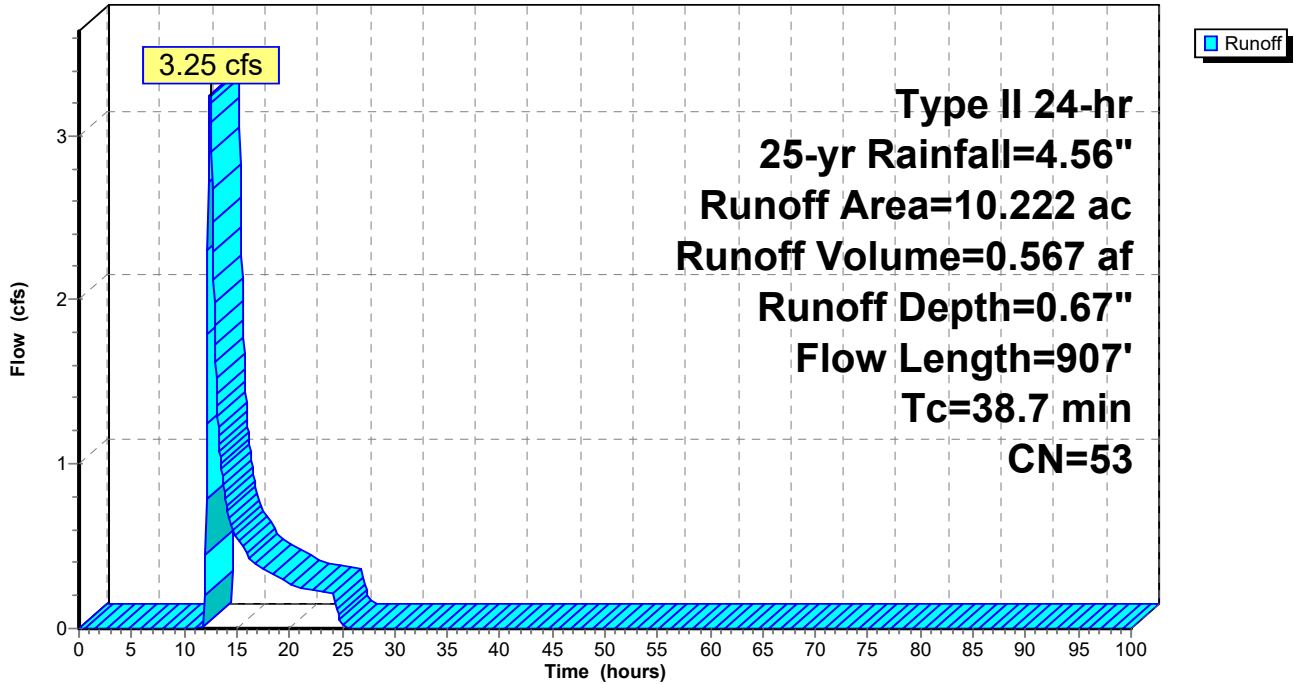
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.7         | 172              | 0.0028           | 0.37                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.4         | 46               | 0.0100           | 2.03                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1         | 9                | 0.0890           | 2.09                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2         | 17               | 0.0360           | 1.33                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 38.7        | 907              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

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**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 4.56                | 0.67               | 0.00            |
| 1.00            | 0.05                | 0.00               | 0.00            | 54.00           | 4.56                | 0.67               | 0.00            |
| 2.00            | 0.10                | 0.00               | 0.00            | 55.00           | 4.56                | 0.67               | 0.00            |
| 3.00            | 0.16                | 0.00               | 0.00            | 56.00           | 4.56                | 0.67               | 0.00            |
| 4.00            | 0.22                | 0.00               | 0.00            | 57.00           | 4.56                | 0.67               | 0.00            |
| 5.00            | 0.29                | 0.00               | 0.00            | 58.00           | 4.56                | 0.67               | 0.00            |
| 6.00            | 0.36                | 0.00               | 0.00            | 59.00           | 4.56                | 0.67               | 0.00            |
| 7.00            | 0.45                | 0.00               | 0.00            | 60.00           | 4.56                | 0.67               | 0.00            |
| 8.00            | 0.55                | 0.00               | 0.00            | 61.00           | 4.56                | 0.67               | 0.00            |
| 9.00            | 0.67                | 0.00               | 0.00            | 62.00           | 4.56                | 0.67               | 0.00            |
| 10.00           | 0.83                | 0.00               | 0.00            | 63.00           | 4.56                | 0.67               | 0.00            |
| 11.00           | 1.07                | 0.00               | 0.00            | 64.00           | 4.56                | 0.67               | 0.00            |
| 12.00           | 3.02                | 0.15               | <b>0.20</b>     | 65.00           | 4.56                | 0.67               | 0.00            |
| 13.00           | 3.52                | 0.29               | <b>1.62</b>     | 66.00           | 4.56                | 0.67               | 0.00            |
| 14.00           | 3.74                | 0.36               | 0.76            | 67.00           | 4.56                | 0.67               | 0.00            |
| 15.00           | 3.89                | 0.41               | 0.55            | 68.00           | 4.56                | 0.67               | 0.00            |
| 16.00           | 4.01                | 0.45               | 0.45            | 69.00           | 4.56                | 0.67               | 0.00            |
| 17.00           | 4.11                | 0.49               | 0.38            | 70.00           | 4.56                | 0.67               | 0.00            |
| 18.00           | 4.20                | 0.52               | 0.35            | 71.00           | 4.56                | 0.67               | 0.00            |
| 19.00           | 4.28                | 0.55               | 0.31            | 72.00           | 4.56                | 0.67               | 0.00            |
| 20.00           | 4.34                | 0.58               | 0.27            | 73.00           | 4.56                | 0.67               | 0.00            |
| 21.00           | 4.40                | 0.60               | 0.24            | 74.00           | 4.56                | 0.67               | 0.00            |
| 22.00           | 4.46                | 0.62               | 0.24            | 75.00           | 4.56                | 0.67               | 0.00            |
| 23.00           | 4.51                | 0.64               | 0.23            | 76.00           | 4.56                | 0.67               | 0.00            |
| 24.00           | <b>4.56</b>         | <b>0.67</b>        | 0.22            | 77.00           | 4.56                | 0.67               | 0.00            |
| 25.00           | 4.56                | 0.67               | 0.02            | 78.00           | 4.56                | 0.67               | 0.00            |
| 26.00           | 4.56                | 0.67               | 0.00            | 79.00           | 4.56                | 0.67               | 0.00            |
| 27.00           | 4.56                | 0.67               | 0.00            | 80.00           | 4.56                | 0.67               | 0.00            |
| 28.00           | 4.56                | 0.67               | 0.00            | 81.00           | 4.56                | 0.67               | 0.00            |
| 29.00           | 4.56                | 0.67               | 0.00            | 82.00           | 4.56                | 0.67               | 0.00            |
| 30.00           | 4.56                | 0.67               | 0.00            | 83.00           | 4.56                | 0.67               | 0.00            |
| 31.00           | 4.56                | 0.67               | 0.00            | 84.00           | 4.56                | 0.67               | 0.00            |
| 32.00           | 4.56                | 0.67               | 0.00            | 85.00           | 4.56                | 0.67               | 0.00            |
| 33.00           | 4.56                | 0.67               | 0.00            | 86.00           | 4.56                | 0.67               | 0.00            |
| 34.00           | 4.56                | 0.67               | 0.00            | 87.00           | 4.56                | 0.67               | 0.00            |
| 35.00           | 4.56                | 0.67               | 0.00            | 88.00           | 4.56                | 0.67               | 0.00            |
| 36.00           | 4.56                | 0.67               | 0.00            | 89.00           | 4.56                | 0.67               | 0.00            |
| 37.00           | 4.56                | 0.67               | 0.00            | 90.00           | 4.56                | 0.67               | 0.00            |
| 38.00           | 4.56                | 0.67               | 0.00            | 91.00           | 4.56                | 0.67               | 0.00            |
| 39.00           | 4.56                | 0.67               | 0.00            | 92.00           | 4.56                | 0.67               | 0.00            |
| 40.00           | 4.56                | 0.67               | 0.00            | 93.00           | 4.56                | 0.67               | 0.00            |
| 41.00           | 4.56                | 0.67               | 0.00            | 94.00           | 4.56                | 0.67               | 0.00            |
| 42.00           | 4.56                | 0.67               | 0.00            | 95.00           | 4.56                | 0.67               | 0.00            |
| 43.00           | 4.56                | 0.67               | 0.00            | 96.00           | 4.56                | 0.67               | 0.00            |
| 44.00           | 4.56                | 0.67               | 0.00            | 97.00           | 4.56                | 0.67               | 0.00            |
| 45.00           | 4.56                | 0.67               | 0.00            | 98.00           | 4.56                | 0.67               | 0.00            |
| 46.00           | 4.56                | 0.67               | 0.00            | 99.00           | 4.56                | 0.67               | 0.00            |
| 47.00           | 4.56                | 0.67               | 0.00            | 100.00          | 4.56                | 0.67               | 0.00            |
| 48.00           | 4.56                | 0.67               | 0.00            |                 |                     |                    |                 |
| 49.00           | 4.56                | 0.67               | 0.00            |                 |                     |                    |                 |
| 50.00           | 4.56                | 0.67               | 0.00            |                 |                     |                    |                 |
| 51.00           | 4.56                | 0.67               | 0.00            |                 |                     |                    |                 |
| 52.00           | 4.56                | 0.67               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 0.73 cfs @ 11.97 hrs, Volume= 0.035 af, Depth= 2.26"  
 Routed to Link AP3 : Analysis Point 3

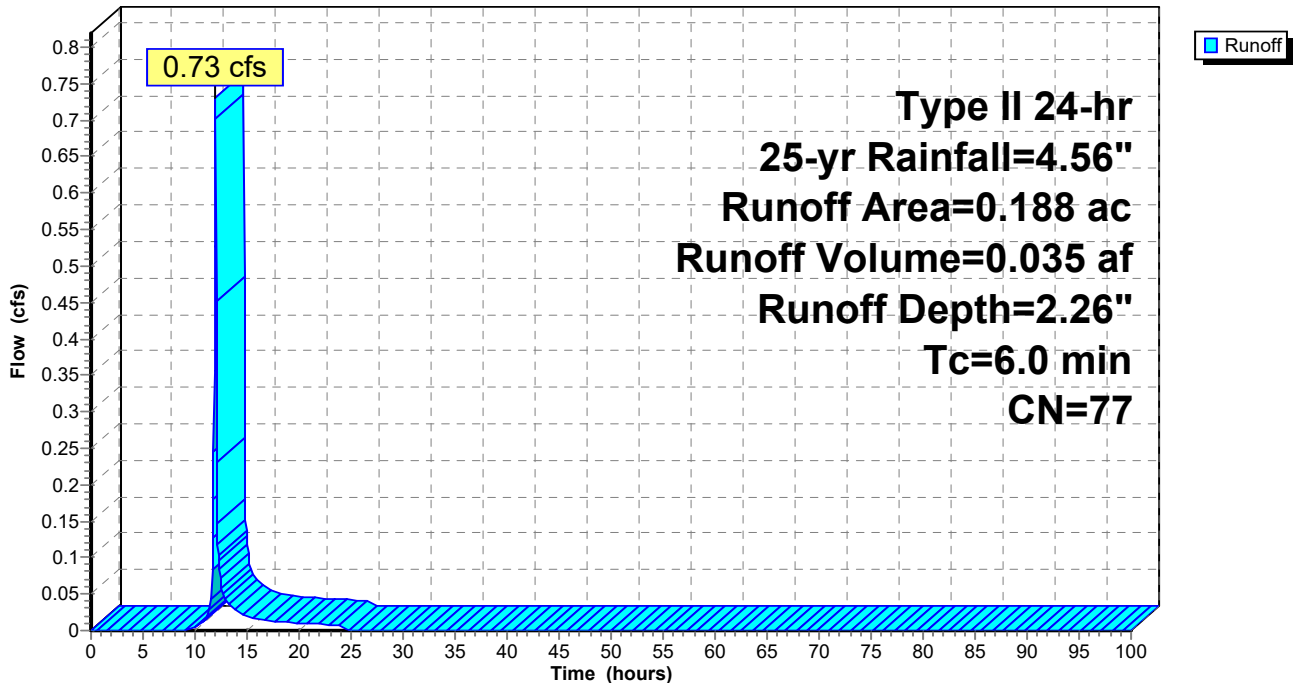
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.114     | 77 | Woods, Good, HSG D        |
| 0.074     | 78 | Meadow, non-grazed, HSG D |
| 0.188     | 77 | Weighted Average          |
| 0.188     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Hydro Flow |

**Subcatchment S4b: Subcatchment 4b**

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

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**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.26            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.26            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.26            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.26            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.26            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.26            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.26            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 2.26            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 2.26            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 2.26            | 0.00         |
| 10.00        | 0.83             | 0.02            | 0.00         | 63.00        | 4.56             | 2.26            | 0.00         |
| 11.00        | 1.07             | 0.06            | <b>0.01</b>  | 64.00        | 4.56             | 2.26            | 0.00         |
| 12.00        | 3.02             | 1.09            | <b>0.70</b>  | 65.00        | 4.56             | 2.26            | 0.00         |
| 13.00        | 3.52             | 1.45            | 0.04         | 66.00        | 4.56             | 2.26            | 0.00         |
| 14.00        | 3.74             | 1.61            | 0.03         | 67.00        | 4.56             | 2.26            | 0.00         |
| 15.00        | 3.89             | 1.73            | 0.02         | 68.00        | 4.56             | 2.26            | 0.00         |
| 16.00        | 4.01             | 1.82            | 0.02         | 69.00        | 4.56             | 2.26            | 0.00         |
| 17.00        | 4.11             | 1.90            | 0.01         | 70.00        | 4.56             | 2.26            | 0.00         |
| 18.00        | 4.20             | 1.97            | 0.01         | 71.00        | 4.56             | 2.26            | 0.00         |
| 19.00        | 4.28             | 2.03            | 0.01         | 72.00        | 4.56             | 2.26            | 0.00         |
| 20.00        | 4.34             | 2.08            | 0.01         | 73.00        | 4.56             | 2.26            | 0.00         |
| 21.00        | 4.40             | 2.13            | 0.01         | 74.00        | 4.56             | 2.26            | 0.00         |
| 22.00        | 4.46             | 2.17            | 0.01         | 75.00        | 4.56             | 2.26            | 0.00         |
| 23.00        | 4.51             | 2.22            | 0.01         | 76.00        | 4.56             | 2.26            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.26</b>     | 0.01         | 77.00        | 4.56             | 2.26            | 0.00         |
| 25.00        | 4.56             | 2.26            | 0.00         | 78.00        | 4.56             | 2.26            | 0.00         |
| 26.00        | 4.56             | 2.26            | 0.00         | 79.00        | 4.56             | 2.26            | 0.00         |
| 27.00        | 4.56             | 2.26            | 0.00         | 80.00        | 4.56             | 2.26            | 0.00         |
| 28.00        | 4.56             | 2.26            | 0.00         | 81.00        | 4.56             | 2.26            | 0.00         |
| 29.00        | 4.56             | 2.26            | 0.00         | 82.00        | 4.56             | 2.26            | 0.00         |
| 30.00        | 4.56             | 2.26            | 0.00         | 83.00        | 4.56             | 2.26            | 0.00         |
| 31.00        | 4.56             | 2.26            | 0.00         | 84.00        | 4.56             | 2.26            | 0.00         |
| 32.00        | 4.56             | 2.26            | 0.00         | 85.00        | 4.56             | 2.26            | 0.00         |
| 33.00        | 4.56             | 2.26            | 0.00         | 86.00        | 4.56             | 2.26            | 0.00         |
| 34.00        | 4.56             | 2.26            | 0.00         | 87.00        | 4.56             | 2.26            | 0.00         |
| 35.00        | 4.56             | 2.26            | 0.00         | 88.00        | 4.56             | 2.26            | 0.00         |
| 36.00        | 4.56             | 2.26            | 0.00         | 89.00        | 4.56             | 2.26            | 0.00         |
| 37.00        | 4.56             | 2.26            | 0.00         | 90.00        | 4.56             | 2.26            | 0.00         |
| 38.00        | 4.56             | 2.26            | 0.00         | 91.00        | 4.56             | 2.26            | 0.00         |
| 39.00        | 4.56             | 2.26            | 0.00         | 92.00        | 4.56             | 2.26            | 0.00         |
| 40.00        | 4.56             | 2.26            | 0.00         | 93.00        | 4.56             | 2.26            | 0.00         |
| 41.00        | 4.56             | 2.26            | 0.00         | 94.00        | 4.56             | 2.26            | 0.00         |
| 42.00        | 4.56             | 2.26            | 0.00         | 95.00        | 4.56             | 2.26            | 0.00         |
| 43.00        | 4.56             | 2.26            | 0.00         | 96.00        | 4.56             | 2.26            | 0.00         |
| 44.00        | 4.56             | 2.26            | 0.00         | 97.00        | 4.56             | 2.26            | 0.00         |
| 45.00        | 4.56             | 2.26            | 0.00         | 98.00        | 4.56             | 2.26            | 0.00         |
| 46.00        | 4.56             | 2.26            | 0.00         | 99.00        | 4.56             | 2.26            | 0.00         |
| 47.00        | 4.56             | 2.26            | 0.00         | 100.00       | 4.56             | 2.26            | 0.00         |
| 48.00        | 4.56             | 2.26            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.26            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.26            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.26            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.26            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S5a: Subcatchment 5a**

Runoff = 19.21 cfs @ 12.10 hrs, Volume= 1.362 af, Depth= 2.96"  
 Routed to Reach R7 : Proposed RRv Swale

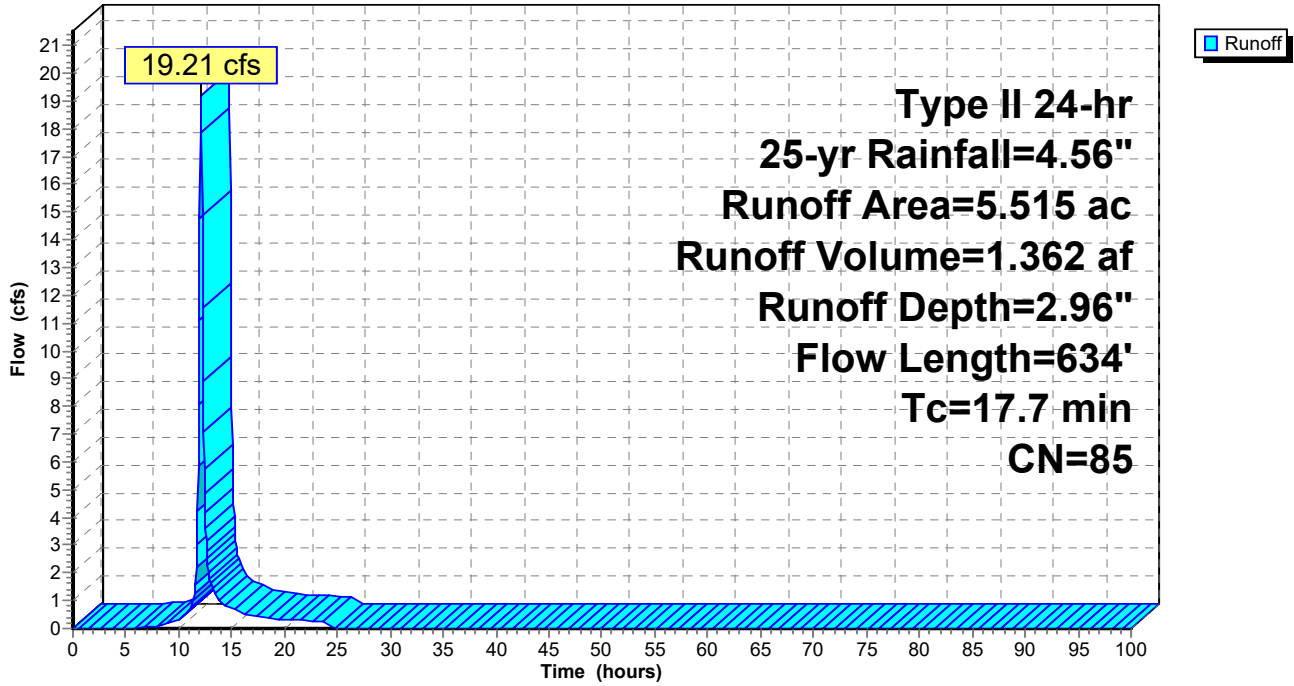
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.428     | 78 | Meadow, non-grazed, HSG D |
| 0.591     | 98 | Paved parking, HSG D      |
| 0.921     | 98 | Roofs, HSG A              |
| 0.035     | 98 | Roofs, HSG D              |
| 1.479     | 98 | Paved parking, HSG A      |
| 1.207     | 94 | Fallow, bare soil, HSG D  |
| 0.830     | 30 | Meadow, non-grazed, HSG A |
| 0.024     | 30 | Woods, Good, HSG A        |
| 5.515     | 85 | Weighted Average          |
| 2.489     |    | 45.13% Pervious Area      |
| 3.026     |    | 54.87% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 4.2      | 22            | 0.0080        | 0.09              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                           |
| 0.6      | 24            | 0.0080        | 0.64              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 3.9      | 53            | 0.0080        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.4      | 22            | 0.0080        | 0.89              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 7.9      | 473           | 0.0100        | 1.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.2      | 21            | 0.0100        | 2.03              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps                  |
| 0.5      | 19            | 0.0070        | 0.59              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 17.7     | 634           | Total         |                   |                |   |

### Subcatchment S5a: Subcatchment 5a

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

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**Hydrograph for Subcatchment S5a: Subcatchment 5a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 2.96            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 2.96            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 2.96            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 2.96            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 2.96            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 2.96            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 2.96            | 0.00         |
| 7.00         | 0.45             | 0.01            | 0.04         | 60.00        | 4.56             | 2.96            | 0.00         |
| 8.00         | 0.55             | 0.02            | 0.09         | 61.00        | 4.56             | 2.96            | 0.00         |
| 9.00         | 0.67             | 0.05            | 0.19         | 62.00        | 4.56             | 2.96            | 0.00         |
| 10.00        | 0.83             | 0.10            | 0.32         | 63.00        | 4.56             | 2.96            | 0.00         |
| 11.00        | 1.07             | 0.21            | 0.72         | 64.00        | 4.56             | 2.96            | 0.00         |
| 12.00        | 3.02             | 1.61            | <b>14.79</b> | 65.00        | 4.56             | 2.96            | 0.00         |
| 13.00        | 3.52             | 2.03            | <b>1.68</b>  | 66.00        | 4.56             | 2.96            | 0.00         |
| 14.00        | 3.74             | 2.23            | 0.95         | 67.00        | 4.56             | 2.96            | 0.00         |
| 15.00        | 3.89             | 2.36            | 0.72         | 68.00        | 4.56             | 2.96            | 0.00         |
| 16.00        | 4.01             | 2.47            | 0.56         | 69.00        | 4.56             | 2.96            | 0.00         |
| 17.00        | 4.11             | 2.56            | 0.48         | 70.00        | 4.56             | 2.96            | 0.00         |
| 18.00        | 4.20             | 2.64            | 0.43         | 71.00        | 4.56             | 2.96            | 0.00         |
| 19.00        | 4.28             | 2.71            | 0.37         | 72.00        | 4.56             | 2.96            | 0.00         |
| 20.00        | 4.34             | 2.76            | 0.31         | 73.00        | 4.56             | 2.96            | 0.00         |
| 21.00        | 4.40             | 2.82            | 0.29         | 74.00        | 4.56             | 2.96            | 0.00         |
| 22.00        | 4.46             | 2.87            | 0.28         | 75.00        | 4.56             | 2.96            | 0.00         |
| 23.00        | 4.51             | 2.92            | 0.27         | 76.00        | 4.56             | 2.96            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>2.96</b>     | 0.26         | 77.00        | 4.56             | 2.96            | 0.00         |
| 25.00        | 4.56             | 2.96            | 0.00         | 78.00        | 4.56             | 2.96            | 0.00         |
| 26.00        | 4.56             | 2.96            | 0.00         | 79.00        | 4.56             | 2.96            | 0.00         |
| 27.00        | 4.56             | 2.96            | 0.00         | 80.00        | 4.56             | 2.96            | 0.00         |
| 28.00        | 4.56             | 2.96            | 0.00         | 81.00        | 4.56             | 2.96            | 0.00         |
| 29.00        | 4.56             | 2.96            | 0.00         | 82.00        | 4.56             | 2.96            | 0.00         |
| 30.00        | 4.56             | 2.96            | 0.00         | 83.00        | 4.56             | 2.96            | 0.00         |
| 31.00        | 4.56             | 2.96            | 0.00         | 84.00        | 4.56             | 2.96            | 0.00         |
| 32.00        | 4.56             | 2.96            | 0.00         | 85.00        | 4.56             | 2.96            | 0.00         |
| 33.00        | 4.56             | 2.96            | 0.00         | 86.00        | 4.56             | 2.96            | 0.00         |
| 34.00        | 4.56             | 2.96            | 0.00         | 87.00        | 4.56             | 2.96            | 0.00         |
| 35.00        | 4.56             | 2.96            | 0.00         | 88.00        | 4.56             | 2.96            | 0.00         |
| 36.00        | 4.56             | 2.96            | 0.00         | 89.00        | 4.56             | 2.96            | 0.00         |
| 37.00        | 4.56             | 2.96            | 0.00         | 90.00        | 4.56             | 2.96            | 0.00         |
| 38.00        | 4.56             | 2.96            | 0.00         | 91.00        | 4.56             | 2.96            | 0.00         |
| 39.00        | 4.56             | 2.96            | 0.00         | 92.00        | 4.56             | 2.96            | 0.00         |
| 40.00        | 4.56             | 2.96            | 0.00         | 93.00        | 4.56             | 2.96            | 0.00         |
| 41.00        | 4.56             | 2.96            | 0.00         | 94.00        | 4.56             | 2.96            | 0.00         |
| 42.00        | 4.56             | 2.96            | 0.00         | 95.00        | 4.56             | 2.96            | 0.00         |
| 43.00        | 4.56             | 2.96            | 0.00         | 96.00        | 4.56             | 2.96            | 0.00         |
| 44.00        | 4.56             | 2.96            | 0.00         | 97.00        | 4.56             | 2.96            | 0.00         |
| 45.00        | 4.56             | 2.96            | 0.00         | 98.00        | 4.56             | 2.96            | 0.00         |
| 46.00        | 4.56             | 2.96            | 0.00         | 99.00        | 4.56             | 2.96            | 0.00         |
| 47.00        | 4.56             | 2.96            | 0.00         | 100.00       | 4.56             | 2.96            | 0.00         |
| 48.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 2.96            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment S5b: Subcatchment 5b**

Runoff = 0.39 cfs @ 12.93 hrs, Volume= 0.107 af, Depth= 0.62"  
 Routed to Reach R8 : Proposed RRv Swale

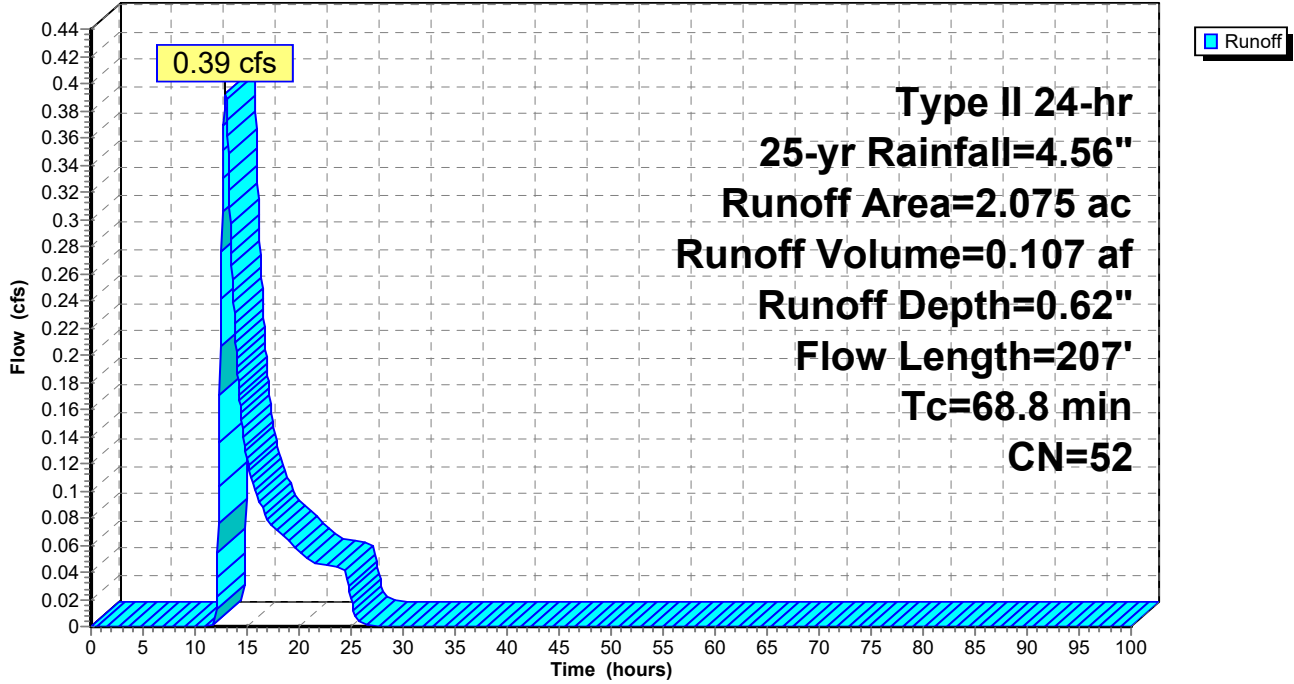
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.448     | 30 | Woods, Good, HSG A        |
| 0.120     | 98 | Roofs, HSG A              |
| 0.566     | 98 | Paved parking, HSG A      |
| 0.941     | 30 | Meadow, non-grazed, HSG A |
| 2.075     | 52 | Weighted Average          |
| 1.389     |    | 66.94% Pervious Area      |
| 0.686     |    | 33.06% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 22.3     | 46            | 0.0200        | 0.03              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 44.2     | 54            | 0.0050        | 0.02              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 1.0      | 21            | 0.0050        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.7      | 33            | 0.0130        | 0.80              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.6      | 53            | 0.0385        | 1.37              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 68.8     | 207           | Total         |                   |                |   |

### Subcatchment S5b: Subcatchment 5b

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

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**Hydrograph for Subcatchment S5b: Subcatchment 5b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 0.62            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 0.62            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 0.62            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 0.62            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 0.62            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 0.62            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 0.62            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 0.62            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 0.62            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 0.62            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 0.62            | 0.00         |
| 11.00        | 1.07             | 0.00            | 0.00         | 64.00        | 4.56             | 0.62            | 0.00         |
| 12.00        | 3.02             | 0.13            | <b>0.01</b>  | 65.00        | 4.56             | 0.62            | 0.00         |
| 13.00        | 3.52             | 0.26            | <b>0.39</b>  | 66.00        | 4.56             | 0.62            | 0.00         |
| 14.00        | 3.74             | 0.32            | 0.20         | 67.00        | 4.56             | 0.62            | 0.00         |
| 15.00        | 3.89             | 0.37            | 0.12         | 68.00        | 4.56             | 0.62            | 0.00         |
| 16.00        | 4.01             | 0.41            | 0.10         | 69.00        | 4.56             | 0.62            | 0.00         |
| 17.00        | 4.11             | 0.45            | 0.08         | 70.00        | 4.56             | 0.62            | 0.00         |
| 18.00        | 4.20             | 0.48            | 0.07         | 71.00        | 4.56             | 0.62            | 0.00         |
| 19.00        | 4.28             | 0.51            | 0.06         | 72.00        | 4.56             | 0.62            | 0.00         |
| 20.00        | 4.34             | 0.53            | 0.06         | 73.00        | 4.56             | 0.62            | 0.00         |
| 21.00        | 4.40             | 0.55            | 0.05         | 74.00        | 4.56             | 0.62            | 0.00         |
| 22.00        | 4.46             | 0.57            | 0.05         | 75.00        | 4.56             | 0.62            | 0.00         |
| 23.00        | 4.51             | 0.60            | 0.04         | 76.00        | 4.56             | 0.62            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>0.62</b>     | 0.04         | 77.00        | 4.56             | 0.62            | 0.00         |
| 25.00        | 4.56             | 0.62            | 0.02         | 78.00        | 4.56             | 0.62            | 0.00         |
| 26.00        | 4.56             | 0.62            | 0.00         | 79.00        | 4.56             | 0.62            | 0.00         |
| 27.00        | 4.56             | 0.62            | 0.00         | 80.00        | 4.56             | 0.62            | 0.00         |
| 28.00        | 4.56             | 0.62            | 0.00         | 81.00        | 4.56             | 0.62            | 0.00         |
| 29.00        | 4.56             | 0.62            | 0.00         | 82.00        | 4.56             | 0.62            | 0.00         |
| 30.00        | 4.56             | 0.62            | 0.00         | 83.00        | 4.56             | 0.62            | 0.00         |
| 31.00        | 4.56             | 0.62            | 0.00         | 84.00        | 4.56             | 0.62            | 0.00         |
| 32.00        | 4.56             | 0.62            | 0.00         | 85.00        | 4.56             | 0.62            | 0.00         |
| 33.00        | 4.56             | 0.62            | 0.00         | 86.00        | 4.56             | 0.62            | 0.00         |
| 34.00        | 4.56             | 0.62            | 0.00         | 87.00        | 4.56             | 0.62            | 0.00         |
| 35.00        | 4.56             | 0.62            | 0.00         | 88.00        | 4.56             | 0.62            | 0.00         |
| 36.00        | 4.56             | 0.62            | 0.00         | 89.00        | 4.56             | 0.62            | 0.00         |
| 37.00        | 4.56             | 0.62            | 0.00         | 90.00        | 4.56             | 0.62            | 0.00         |
| 38.00        | 4.56             | 0.62            | 0.00         | 91.00        | 4.56             | 0.62            | 0.00         |
| 39.00        | 4.56             | 0.62            | 0.00         | 92.00        | 4.56             | 0.62            | 0.00         |
| 40.00        | 4.56             | 0.62            | 0.00         | 93.00        | 4.56             | 0.62            | 0.00         |
| 41.00        | 4.56             | 0.62            | 0.00         | 94.00        | 4.56             | 0.62            | 0.00         |
| 42.00        | 4.56             | 0.62            | 0.00         | 95.00        | 4.56             | 0.62            | 0.00         |
| 43.00        | 4.56             | 0.62            | 0.00         | 96.00        | 4.56             | 0.62            | 0.00         |
| 44.00        | 4.56             | 0.62            | 0.00         | 97.00        | 4.56             | 0.62            | 0.00         |
| 45.00        | 4.56             | 0.62            | 0.00         | 98.00        | 4.56             | 0.62            | 0.00         |
| 46.00        | 4.56             | 0.62            | 0.00         | 99.00        | 4.56             | 0.62            | 0.00         |
| 47.00        | 4.56             | 0.62            | 0.00         | 100.00       | 4.56             | 0.62            | 0.00         |
| 48.00        | 4.56             | 0.62            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 0.62            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 0.62            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 0.62            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 0.62            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S7: Subcatchment 7**

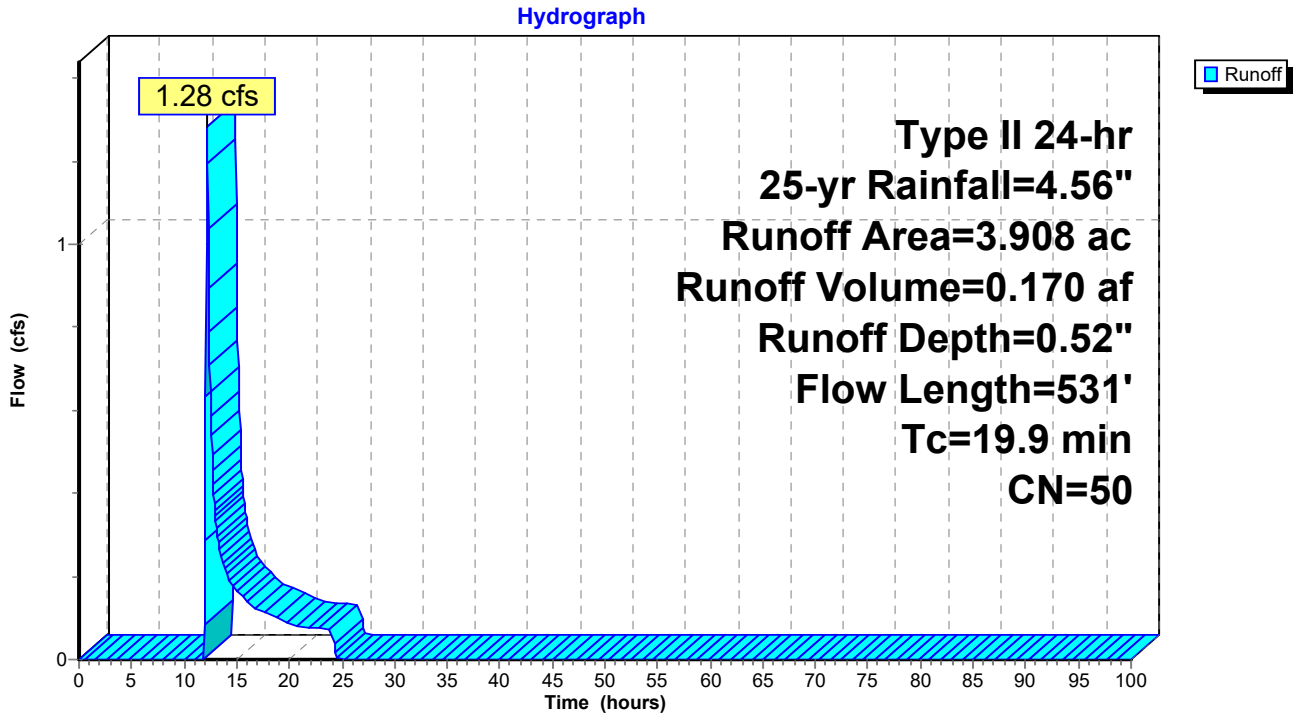
Runoff = 1.28 cfs @ 12.19 hrs, Volume= 0.170 af, Depth= 0.52"  
 Routed to Link AP6 : Analysis Point 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25-yr Rainfall=4.56"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 2.301     | 30 | Meadow, non-grazed, HSG A |
| 1.607     | 78 | Meadow, non-grazed, HSG D |
| 3.908     | 50 | Weighted Average          |
| 3.908     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.8      | 12            | 0.0195        | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 8.6      | 88            | 0.0209        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0209        | 1.01              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.2      | 150           | 0.0126        | 0.79              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.8      | 50            | 0.0221        | 1.04              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 91            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.2      | 84            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 19.9     | 531           | Total         |                   |                |   |

Subcatchment S7: Subcatchment 7



**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 4.56             | 0.52            | 0.00         |
| 1.00         | 0.05             | 0.00            | 0.00         | 54.00        | 4.56             | 0.52            | 0.00         |
| 2.00         | 0.10             | 0.00            | 0.00         | 55.00        | 4.56             | 0.52            | 0.00         |
| 3.00         | 0.16             | 0.00            | 0.00         | 56.00        | 4.56             | 0.52            | 0.00         |
| 4.00         | 0.22             | 0.00            | 0.00         | 57.00        | 4.56             | 0.52            | 0.00         |
| 5.00         | 0.29             | 0.00            | 0.00         | 58.00        | 4.56             | 0.52            | 0.00         |
| 6.00         | 0.36             | 0.00            | 0.00         | 59.00        | 4.56             | 0.52            | 0.00         |
| 7.00         | 0.45             | 0.00            | 0.00         | 60.00        | 4.56             | 0.52            | 0.00         |
| 8.00         | 0.55             | 0.00            | 0.00         | 61.00        | 4.56             | 0.52            | 0.00         |
| 9.00         | 0.67             | 0.00            | 0.00         | 62.00        | 4.56             | 0.52            | 0.00         |
| 10.00        | 0.83             | 0.00            | 0.00         | 63.00        | 4.56             | 0.52            | 0.00         |
| 11.00        | 1.07             | 0.00            | 0.00         | 64.00        | 4.56             | 0.52            | 0.00         |
| 12.00        | 3.02             | 0.09            | <b>0.29</b>  | 65.00        | 4.56             | 0.52            | 0.00         |
| 13.00        | 3.52             | 0.20            | <b>0.33</b>  | 66.00        | 4.56             | 0.52            | 0.00         |
| 14.00        | 3.74             | 0.26            | 0.21         | 67.00        | 4.56             | 0.52            | 0.00         |
| 15.00        | 3.89             | 0.30            | 0.17         | 68.00        | 4.56             | 0.52            | 0.00         |
| 16.00        | 4.01             | 0.34            | 0.14         | 69.00        | 4.56             | 0.52            | 0.00         |
| 17.00        | 4.11             | 0.37            | 0.12         | 70.00        | 4.56             | 0.52            | 0.00         |
| 18.00        | 4.20             | 0.40            | 0.11         | 71.00        | 4.56             | 0.52            | 0.00         |
| 19.00        | 4.28             | 0.42            | 0.10         | 72.00        | 4.56             | 0.52            | 0.00         |
| 20.00        | 4.34             | 0.44            | 0.08         | 73.00        | 4.56             | 0.52            | 0.00         |
| 21.00        | 4.40             | 0.46            | 0.08         | 74.00        | 4.56             | 0.52            | 0.00         |
| 22.00        | 4.46             | 0.48            | 0.08         | 75.00        | 4.56             | 0.52            | 0.00         |
| 23.00        | 4.51             | 0.50            | 0.08         | 76.00        | 4.56             | 0.52            | 0.00         |
| 24.00        | <b>4.56</b>      | <b>0.52</b>     | 0.07         | 77.00        | 4.56             | 0.52            | 0.00         |
| 25.00        | 4.56             | 0.52            | 0.00         | 78.00        | 4.56             | 0.52            | 0.00         |
| 26.00        | 4.56             | 0.52            | 0.00         | 79.00        | 4.56             | 0.52            | 0.00         |
| 27.00        | 4.56             | 0.52            | 0.00         | 80.00        | 4.56             | 0.52            | 0.00         |
| 28.00        | 4.56             | 0.52            | 0.00         | 81.00        | 4.56             | 0.52            | 0.00         |
| 29.00        | 4.56             | 0.52            | 0.00         | 82.00        | 4.56             | 0.52            | 0.00         |
| 30.00        | 4.56             | 0.52            | 0.00         | 83.00        | 4.56             | 0.52            | 0.00         |
| 31.00        | 4.56             | 0.52            | 0.00         | 84.00        | 4.56             | 0.52            | 0.00         |
| 32.00        | 4.56             | 0.52            | 0.00         | 85.00        | 4.56             | 0.52            | 0.00         |
| 33.00        | 4.56             | 0.52            | 0.00         | 86.00        | 4.56             | 0.52            | 0.00         |
| 34.00        | 4.56             | 0.52            | 0.00         | 87.00        | 4.56             | 0.52            | 0.00         |
| 35.00        | 4.56             | 0.52            | 0.00         | 88.00        | 4.56             | 0.52            | 0.00         |
| 36.00        | 4.56             | 0.52            | 0.00         | 89.00        | 4.56             | 0.52            | 0.00         |
| 37.00        | 4.56             | 0.52            | 0.00         | 90.00        | 4.56             | 0.52            | 0.00         |
| 38.00        | 4.56             | 0.52            | 0.00         | 91.00        | 4.56             | 0.52            | 0.00         |
| 39.00        | 4.56             | 0.52            | 0.00         | 92.00        | 4.56             | 0.52            | 0.00         |
| 40.00        | 4.56             | 0.52            | 0.00         | 93.00        | 4.56             | 0.52            | 0.00         |
| 41.00        | 4.56             | 0.52            | 0.00         | 94.00        | 4.56             | 0.52            | 0.00         |
| 42.00        | 4.56             | 0.52            | 0.00         | 95.00        | 4.56             | 0.52            | 0.00         |
| 43.00        | 4.56             | 0.52            | 0.00         | 96.00        | 4.56             | 0.52            | 0.00         |
| 44.00        | 4.56             | 0.52            | 0.00         | 97.00        | 4.56             | 0.52            | 0.00         |
| 45.00        | 4.56             | 0.52            | 0.00         | 98.00        | 4.56             | 0.52            | 0.00         |
| 46.00        | 4.56             | 0.52            | 0.00         | 99.00        | 4.56             | 0.52            | 0.00         |
| 47.00        | 4.56             | 0.52            | 0.00         | 100.00       | 4.56             | 0.52            | 0.00         |
| 48.00        | 4.56             | 0.52            | 0.00         |              |                  |                 |              |
| 49.00        | 4.56             | 0.52            | 0.00         |              |                  |                 |              |
| 50.00        | 4.56             | 0.52            | 0.00         |              |                  |                 |              |
| 51.00        | 4.56             | 0.52            | 0.00         |              |                  |                 |              |
| 52.00        | 4.56             | 0.52            | 0.00         |              |                  |                 |              |

### Summary for Reach R10: 10" Culvert Pond Discharge

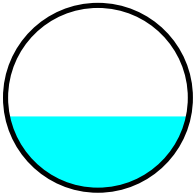
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 2.96" for 25-yr event  
Inflow = 0.88 cfs @ 12.70 hrs, Volume= 0.320 af  
Outflow = 0.88 cfs @ 12.70 hrs, Volume= 0.320 af, Atten= 0%, Lag= 0.1 min  
Routed to Link AP5 : Analysis Point 5

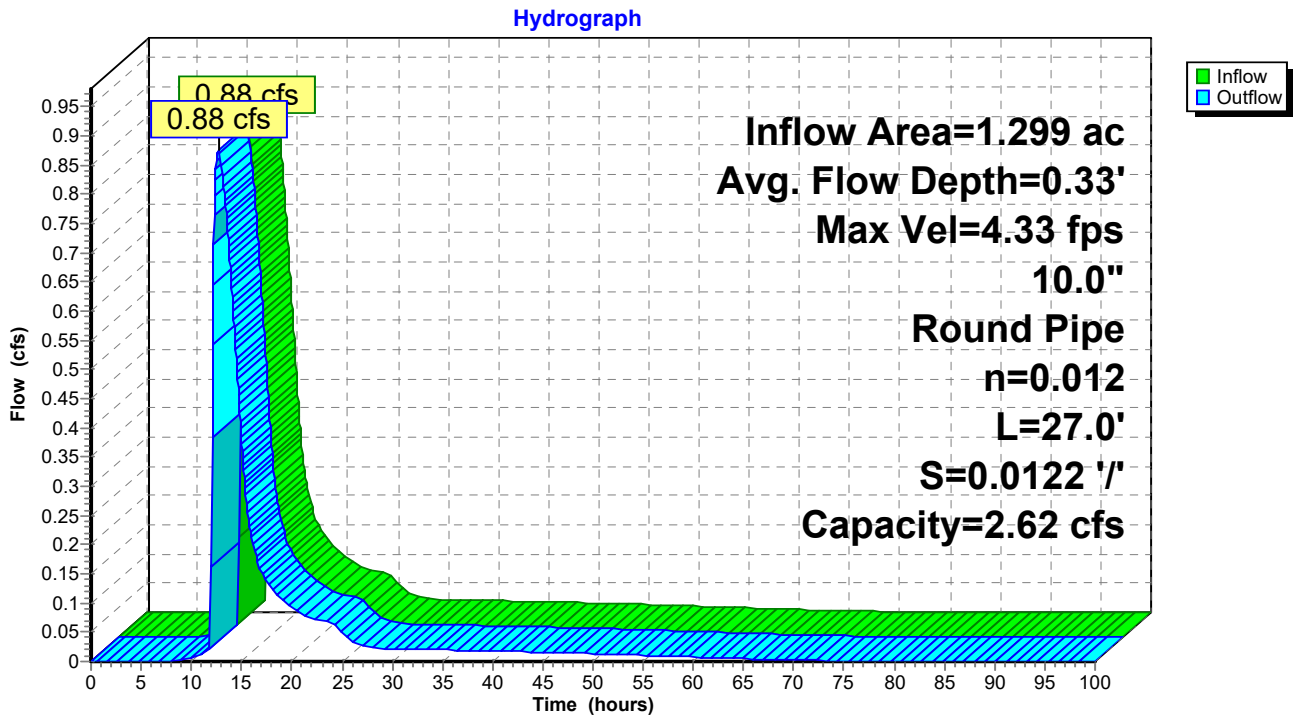
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 4.33 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.20 fps, Avg. Travel Time= 0.4 min

Peak Storage= 5 cf @ 12.70 hrs  
Average Depth at Peak Storage= 0.33' , Surface Width= 0.82'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.62 cfs

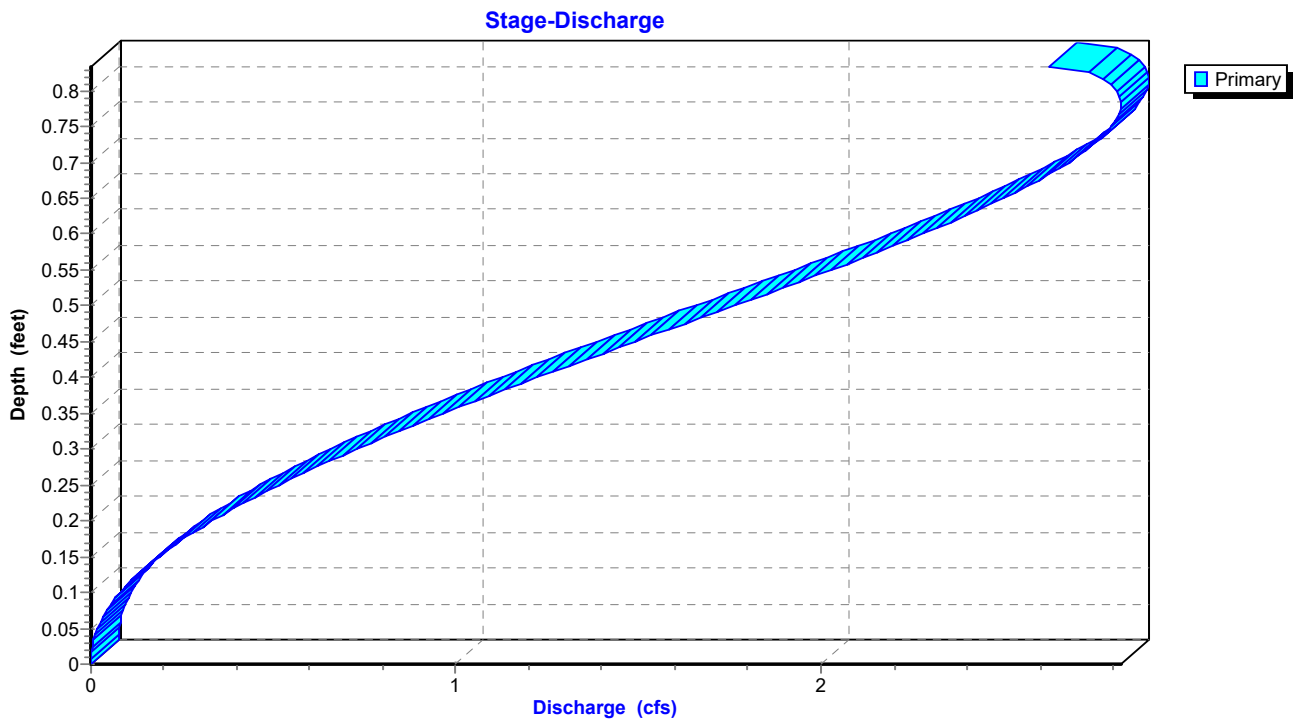
10.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 27.0' Slope= 0.0122 '/'  
Inlet Invert= 329.33', Outlet Invert= 329.00'



**Reach R10: 10" Culvert Pond Discharge**

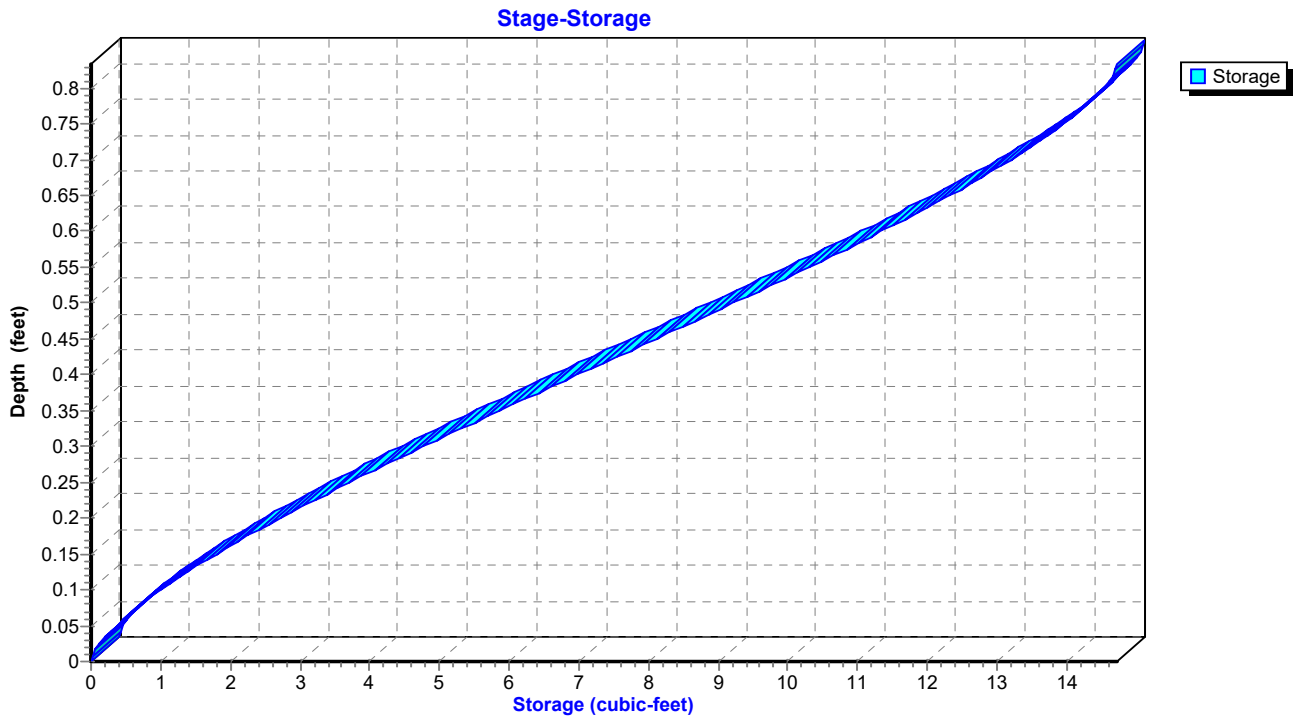


**Reach R10: 10" Culvert Pond Discharge**





### Reach R10: 10" Culvert Pond Discharge



**Hydrograph for Reach R10: 10" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 329.33           | 0.00          |
| 2.50         | 0.00         | 0                    | 329.33           | 0.00          |
| 5.00         | 0.00         | 0                    | 329.33           | 0.00          |
| 7.50         | 0.00         | 0                    | 329.33           | 0.00          |
| 10.00        | 0.01         | 0                    | 329.36           | 0.01          |
| 12.50        | <b>0.86</b>  | <b>5</b>             | <b>329.66</b>    | <b>0.86</b>   |
| 15.00        | <b>0.37</b>  | <b>3</b>             | <b>329.54</b>    | <b>0.37</b>   |
| 17.50        | 0.14         | 1                    | 329.46           | 0.14          |
| 20.00        | 0.09         | 1                    | 329.44           | 0.09          |
| 22.50        | 0.07         | 1                    | 329.42           | 0.07          |
| 25.00        | 0.05         | 1                    | 329.41           | 0.05          |
| 27.50        | 0.02         | 0                    | 329.39           | 0.02          |
| 30.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 32.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 35.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 37.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 40.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 42.50        | 0.02         | 0                    | 329.38           | 0.02          |
| 45.00        | 0.02         | 0                    | 329.38           | 0.02          |
| 47.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 50.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 52.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 55.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 57.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 60.00        | 0.01         | 0                    | 329.36           | 0.01          |
| 62.50        | 0.01         | 0                    | 329.36           | 0.01          |
| 65.00        | 0.01         | 0                    | 329.36           | 0.01          |
| 67.50        | 0.00         | 0                    | 329.35           | 0.00          |
| 70.00        | 0.00         | 0                    | 329.35           | 0.00          |
| 72.50        | 0.00         | 0                    | 329.35           | 0.00          |
| 75.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 77.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 80.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 82.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 85.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 87.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 90.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 92.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 95.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 97.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 100.00       | 0.00         | 0                    | 329.33           | 0.00          |

**Stage-Discharge for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 329.33              | 0.00                 | 0.00               | 329.86              | 5.26                 | 1.92               |
| 329.34              | 0.48                 | 0.00               | 329.87              | 5.28                 | 1.98               |
| 329.35              | 0.76                 | 0.00               | 329.88              | 5.31                 | 2.03               |
| 329.36              | 1.00                 | 0.01               | 329.89              | 5.34                 | 2.08               |
| 329.37              | 1.20                 | 0.01               | 329.90              | 5.36                 | 2.13               |
| 329.38              | 1.39                 | 0.02               | 329.91              | 5.38                 | 2.18               |
| 329.39              | 1.56                 | 0.03               | 329.92              | 5.40                 | 2.23               |
| 329.40              | 1.73                 | 0.04               | 329.93              | 5.42                 | 2.28               |
| 329.41              | 1.88                 | 0.05               | 329.94              | 5.43                 | 2.32               |
| 329.42              | 2.03                 | 0.06               | 329.95              | 5.45                 | 2.37               |
| 329.43              | 2.16                 | 0.08               | 329.96              | 5.46                 | 2.41               |
| 329.44              | 2.30                 | 0.10               | 329.97              | 5.47                 | 2.46               |
| 329.45              | 2.42                 | 0.12               | 329.98              | 5.48                 | 2.50               |
| 329.46              | 2.55                 | 0.14               | 329.99              | 5.48                 | 2.54               |
| 329.47              | 2.66                 | 0.16               | 330.00              | 5.48                 | 2.58               |
| 329.48              | 2.78                 | 0.19               | 330.01              | <b>5.48</b>          | 2.61               |
| 329.49              | 2.89                 | 0.21               | 330.02              | 5.48                 | 2.65               |
| 329.50              | 2.99                 | 0.24               | 330.03              | 5.48                 | 2.68               |
| 329.51              | 3.10                 | 0.27               | 330.04              | 5.47                 | 2.71               |
| 329.52              | 3.20                 | 0.30               | 330.05              | 5.46                 | 2.74               |
| 329.53              | 3.29                 | 0.33               | 330.06              | 5.45                 | 2.76               |
| 329.54              | 3.39                 | 0.37               | 330.07              | 5.43                 | 2.78               |
| 329.55              | 3.48                 | 0.40               | 330.08              | 5.41                 | 2.80               |
| 329.56              | 3.57                 | 0.44               | 330.09              | 5.38                 | 2.81               |
| 329.57              | 3.65                 | 0.47               | 330.10              | 5.35                 | 2.82               |
| 329.58              | 3.73                 | 0.51               | 330.11              | 5.32                 | <b>2.82</b>        |
| 329.59              | 3.81                 | 0.55               | 330.12              | 5.28                 | 2.82               |
| 329.60              | 3.89                 | 0.60               | 330.13              | 5.22                 | 2.81               |
| 329.61              | 3.97                 | 0.64               | 330.14              | 5.16                 | 2.79               |
| 329.62              | 4.04                 | 0.68               | 330.15              | 5.07                 | 2.76               |
| 329.63              | 4.12                 | 0.73               | 330.16              | 4.90                 | 2.67               |
| 329.64              | 4.19                 | 0.77               |                     |                      |                    |
| 329.65              | 4.25                 | 0.82               |                     |                      |                    |
| 329.66              | 4.32                 | 0.87               |                     |                      |                    |
| 329.67              | 4.38                 | 0.92               |                     |                      |                    |
| 329.68              | 4.44                 | 0.97               |                     |                      |                    |
| 329.69              | 4.50                 | 1.02               |                     |                      |                    |
| 329.70              | 4.56                 | 1.07               |                     |                      |                    |
| 329.71              | 4.62                 | 1.12               |                     |                      |                    |
| 329.72              | 4.67                 | 1.17               |                     |                      |                    |
| 329.73              | 4.73                 | 1.22               |                     |                      |                    |
| 329.74              | 4.78                 | 1.28               |                     |                      |                    |
| 329.75              | 4.83                 | 1.33               |                     |                      |                    |
| 329.76              | 4.87                 | 1.38               |                     |                      |                    |
| 329.77              | 4.92                 | 1.44               |                     |                      |                    |
| 329.78              | 4.96                 | 1.49               |                     |                      |                    |
| 329.79              | 5.01                 | 1.55               |                     |                      |                    |
| 329.80              | 5.05                 | 1.60               |                     |                      |                    |
| 329.81              | 5.09                 | 1.65               |                     |                      |                    |
| 329.82              | 5.12                 | 1.71               |                     |                      |                    |
| 329.83              | 5.16                 | 1.76               |                     |                      |                    |
| 329.84              | 5.19                 | 1.82               |                     |                      |                    |
| 329.85              | 5.23                 | 1.87               |                     |                      |                    |

**Stage-Area-Storage for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 329.33              | 0.0                 | 0                       | 329.86              | 0.4                 | 10                      |
| 329.34              | 0.0                 | 0                       | 329.87              | 0.4                 | 10                      |
| 329.35              | 0.0                 | 0                       | 329.88              | 0.4                 | 10                      |
| 329.36              | 0.0                 | 0                       | 329.89              | 0.4                 | 11                      |
| 329.37              | 0.0                 | 0                       | 329.90              | 0.4                 | 11                      |
| 329.38              | 0.0                 | 0                       | 329.91              | 0.4                 | 11                      |
| 329.39              | 0.0                 | 0                       | 329.92              | 0.4                 | 11                      |
| 329.40              | 0.0                 | 1                       | 329.93              | 0.4                 | 11                      |
| 329.41              | 0.0                 | 1                       | 329.94              | 0.4                 | 12                      |
| 329.42              | 0.0                 | 1                       | 329.95              | 0.4                 | 12                      |
| 329.43              | 0.0                 | 1                       | 329.96              | 0.4                 | 12                      |
| 329.44              | 0.0                 | 1                       | 329.97              | 0.4                 | 12                      |
| 329.45              | 0.0                 | 1                       | 329.98              | 0.5                 | 12                      |
| 329.46              | 0.1                 | 1                       | 329.99              | 0.5                 | 13                      |
| 329.47              | 0.1                 | 2                       | 330.00              | 0.5                 | 13                      |
| 329.48              | 0.1                 | 2                       | 330.01              | 0.5                 | 13                      |
| 329.49              | 0.1                 | 2                       | 330.02              | 0.5                 | 13                      |
| 329.50              | 0.1                 | 2                       | 330.03              | 0.5                 | 13                      |
| 329.51              | 0.1                 | 2                       | 330.04              | 0.5                 | 13                      |
| 329.52              | 0.1                 | 3                       | 330.05              | 0.5                 | 14                      |
| 329.53              | 0.1                 | 3                       | 330.06              | 0.5                 | 14                      |
| 329.54              | 0.1                 | 3                       | 330.07              | 0.5                 | 14                      |
| 329.55              | 0.1                 | 3                       | 330.08              | 0.5                 | 14                      |
| 329.56              | 0.1                 | 3                       | 330.09              | 0.5                 | 14                      |
| 329.57              | 0.1                 | 4                       | 330.10              | 0.5                 | 14                      |
| 329.58              | 0.1                 | 4                       | 330.11              | 0.5                 | 14                      |
| 329.59              | 0.1                 | 4                       | 330.12              | 0.5                 | 14                      |
| 329.60              | 0.2                 | 4                       | 330.13              | 0.5                 | 15                      |
| 329.61              | 0.2                 | 4                       | 330.14              | 0.5                 | 15                      |
| 329.62              | 0.2                 | 5                       | 330.15              | 0.5                 | 15                      |
| 329.63              | 0.2                 | 5                       | 330.16              | <b>0.5</b>          | <b>15</b>               |
| 329.64              | 0.2                 | 5                       |                     |                     |                         |
| 329.65              | 0.2                 | 5                       |                     |                     |                         |
| 329.66              | 0.2                 | 5                       |                     |                     |                         |
| 329.67              | 0.2                 | 6                       |                     |                     |                         |
| 329.68              | 0.2                 | 6                       |                     |                     |                         |
| 329.69              | 0.2                 | 6                       |                     |                     |                         |
| 329.70              | 0.2                 | 6                       |                     |                     |                         |
| 329.71              | 0.2                 | 7                       |                     |                     |                         |
| 329.72              | 0.3                 | 7                       |                     |                     |                         |
| 329.73              | 0.3                 | 7                       |                     |                     |                         |
| 329.74              | 0.3                 | 7                       |                     |                     |                         |
| 329.75              | 0.3                 | 7                       |                     |                     |                         |
| 329.76              | 0.3                 | 8                       |                     |                     |                         |
| 329.77              | 0.3                 | 8                       |                     |                     |                         |
| 329.78              | 0.3                 | 8                       |                     |                     |                         |
| 329.79              | 0.3                 | 8                       |                     |                     |                         |
| 329.80              | 0.3                 | 9                       |                     |                     |                         |
| 329.81              | 0.3                 | 9                       |                     |                     |                         |
| 329.82              | 0.3                 | 9                       |                     |                     |                         |
| 329.83              | 0.3                 | 9                       |                     |                     |                         |
| 329.84              | 0.3                 | 9                       |                     |                     |                         |
| 329.85              | 0.4                 | 10                      |                     |                     |                         |

**Summary for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.67" for 25-yr event  
 Inflow = 3.25 cfs @ 12.45 hrs, Volume= 0.567 af  
 Outflow = 3.22 cfs @ 12.49 hrs, Volume= 0.567 af, Atten= 1%, Lag= 2.3 min  
 Routed to Pond 4P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.52 fps, Min. Travel Time= 2.9 min  
 Avg. Velocity = 0.68 fps, Avg. Travel Time= 6.5 min

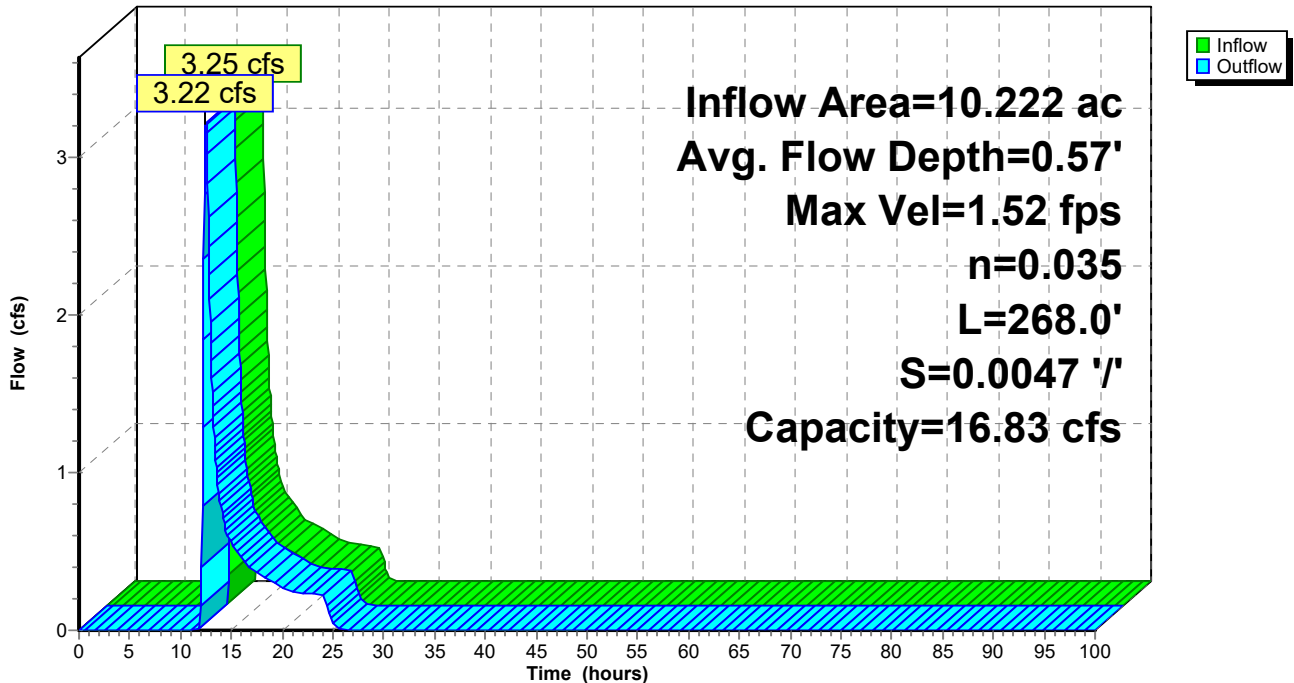
Peak Storage= 569 cf @ 12.49 hrs  
 Average Depth at Peak Storage= 0.57' , Surface Width= 5.43'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 16.83 cfs

2.00' x 1.25' deep channel, n= 0.035  
 Side Slope Z-value= 3.0 '/ Top Width= 9.50'  
 Length= 268.0' Slope= 0.0047 '/  
 Inlet Invert= 341.00', Outlet Invert= 339.75'

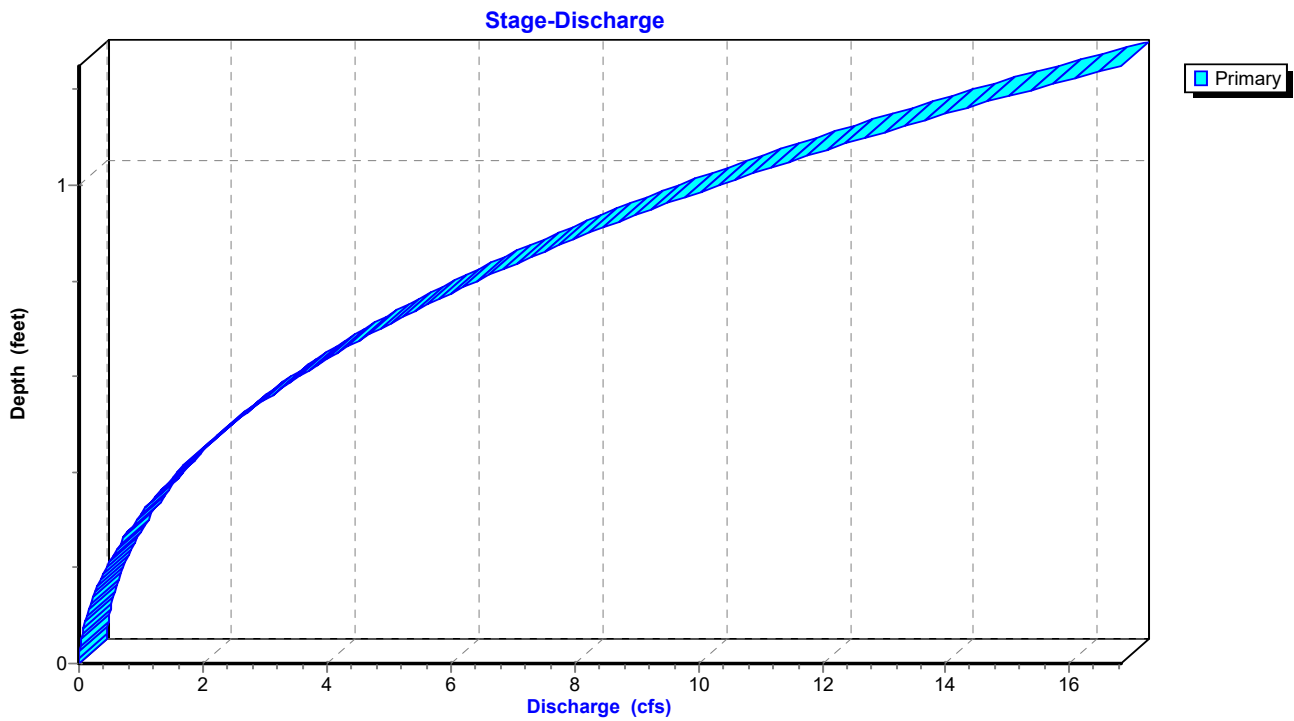


**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

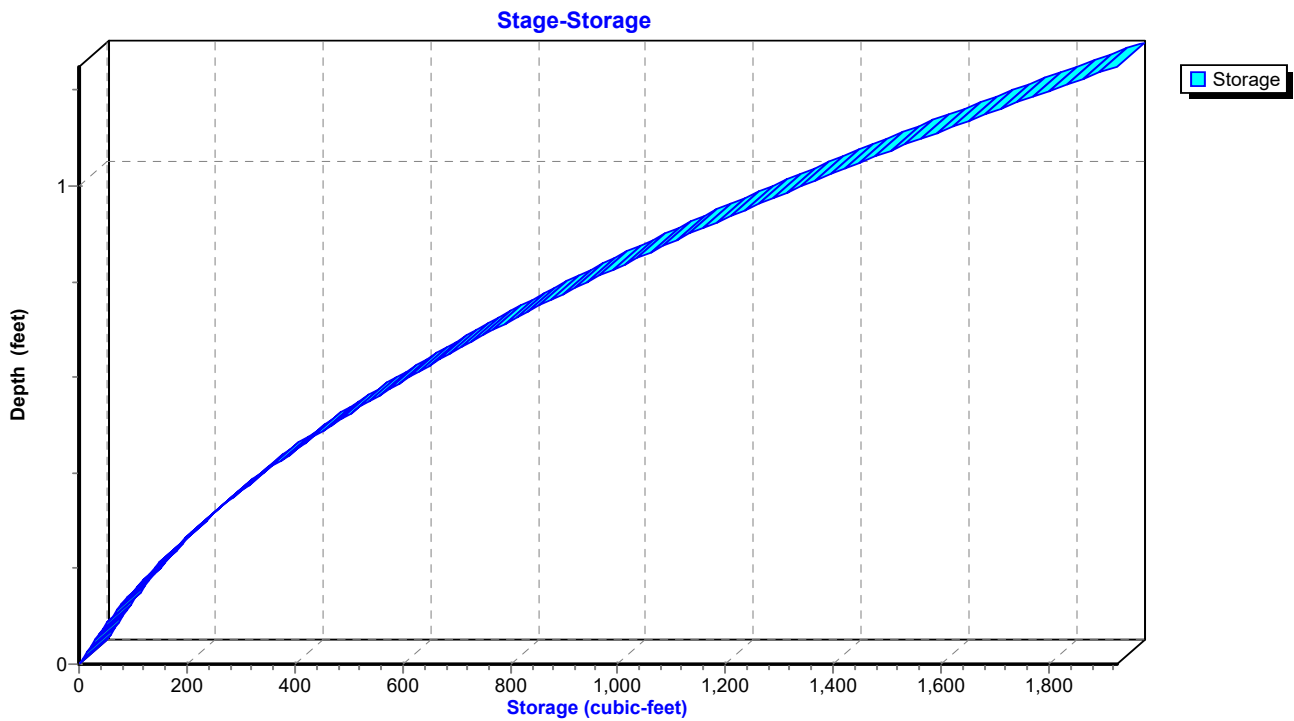
Hydrograph



### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



**Hydrograph for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 341.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 341.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 341.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 341.00           | 0.00          |
| 10.00        | <b>0.00</b>  | 0                    | 341.00           | 0.00          |
| 12.50        | <b>3.20</b>  | <b>569</b>           | <b>341.57</b>    | <b>3.22</b>   |
| 15.00        | 0.55         | 162                  | 341.23           | 0.55          |
| 17.50        | 0.36         | 122                  | 341.18           | 0.37          |
| 20.00        | 0.27         | 100                  | 341.15           | 0.27          |
| 22.50        | 0.23         | 90                   | 341.14           | 0.23          |
| 25.00        | 0.02         | 26                   | 341.05           | 0.03          |
| 27.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 30.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 341.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 341.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 341.00           | 0.00          |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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**Stage-Discharge for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 341.00              | 0.00                 | 0.00               | 341.53              | 1.46                 | 2.77               | 342.06              | 2.13                 | 11.71              |
| 341.01              | 0.12                 | 0.00               | 341.54              | 1.47                 | 2.87               | 342.07              | 2.14                 | 11.95              |
| 341.02              | 0.21                 | 0.01               | 341.55              | 1.48                 | 2.98               | 342.08              | 2.16                 | 12.20              |
| 341.03              | 0.27                 | 0.02               | 341.56              | 1.50                 | 3.09               | 342.09              | 2.17                 | 12.45              |
| 341.04              | 0.33                 | 0.03               | 341.57              | 1.51                 | 3.20               | 342.10              | 2.18                 | 12.70              |
| 341.05              | 0.37                 | 0.04               | 341.58              | 1.53                 | 3.32               | 342.11              | 2.19                 | 12.95              |
| 341.06              | 0.42                 | 0.06               | 341.59              | 1.54                 | 3.43               | 342.12              | 2.20                 | 13.21              |
| 341.07              | 0.46                 | 0.07               | 341.60              | 1.56                 | 3.55               | 342.13              | 2.21                 | 13.47              |
| 341.08              | 0.50                 | 0.09               | 341.61              | 1.57                 | 3.67               | 342.14              | 2.22                 | 13.73              |
| 341.09              | 0.54                 | 0.11               | 341.62              | 1.59                 | 3.79               | 342.15              | 2.23                 | 14.00              |
| 341.10              | 0.57                 | 0.13               | 341.63              | 1.60                 | 3.92               | 342.16              | 2.24                 | 14.27              |
| 341.11              | 0.60                 | 0.16               | 341.64              | 1.61                 | 4.05               | 342.17              | 2.26                 | 14.54              |
| 341.12              | 0.64                 | 0.18               | 341.65              | 1.63                 | 4.18               | 342.18              | 2.27                 | 14.81              |
| 341.13              | 0.67                 | 0.21               | 341.66              | 1.64                 | 4.31               | 342.19              | 2.28                 | 15.09              |
| 341.14              | 0.70                 | 0.24               | 341.67              | 1.65                 | 4.44               | 342.20              | 2.29                 | 15.37              |
| 341.15              | 0.72                 | 0.27               | 341.68              | 1.67                 | 4.58               | 342.21              | 2.30                 | 15.66              |
| 341.16              | 0.75                 | 0.30               | 341.69              | 1.68                 | 4.72               | 342.22              | 2.31                 | 15.95              |
| 341.17              | 0.78                 | 0.33               | 341.70              | 1.69                 | 4.86               | 342.23              | 2.32                 | 16.24              |
| 341.18              | 0.80                 | 0.37               | 341.71              | 1.71                 | 5.01               | 342.24              | 2.33                 | 16.53              |
| 341.19              | 0.83                 | 0.40               | 341.72              | 1.72                 | 5.15               | 342.25              | <b>2.34</b>          | <b>16.83</b>       |
| 341.20              | 0.85                 | 0.44               | 341.73              | 1.73                 | 5.30               |                     |                      |                    |
| 341.21              | 0.88                 | 0.48               | 341.74              | 1.75                 | 5.45               |                     |                      |                    |
| 341.22              | 0.90                 | 0.53               | 341.75              | 1.76                 | 5.61               |                     |                      |                    |
| 341.23              | 0.92                 | 0.57               | 341.76              | 1.77                 | 5.77               |                     |                      |                    |
| 341.24              | 0.94                 | 0.62               | 341.77              | 1.79                 | 5.92               |                     |                      |                    |
| 341.25              | 0.96                 | 0.66               | 341.78              | 1.80                 | 6.09               |                     |                      |                    |
| 341.26              | 0.99                 | 0.71               | 341.79              | 1.81                 | 6.25               |                     |                      |                    |
| 341.27              | 1.01                 | 0.76               | 341.80              | 1.82                 | 6.42               |                     |                      |                    |
| 341.28              | 1.03                 | 0.82               | 341.81              | 1.84                 | 6.59               |                     |                      |                    |
| 341.29              | 1.05                 | 0.87               | 341.82              | 1.85                 | 6.76               |                     |                      |                    |
| 341.30              | 1.07                 | 0.93               | 341.83              | 1.86                 | 6.93               |                     |                      |                    |
| 341.31              | 1.09                 | 0.99               | 341.84              | 1.87                 | 7.11               |                     |                      |                    |
| 341.32              | 1.11                 | 1.05               | 341.85              | 1.89                 | 7.29               |                     |                      |                    |
| 341.33              | 1.12                 | 1.11               | 341.86              | 1.90                 | 7.48               |                     |                      |                    |
| 341.34              | 1.14                 | 1.17               | 341.87              | 1.91                 | 7.66               |                     |                      |                    |
| 341.35              | 1.16                 | 1.24               | 341.88              | 1.92                 | 7.85               |                     |                      |                    |
| 341.36              | 1.18                 | 1.31               | 341.89              | 1.93                 | 8.04               |                     |                      |                    |
| 341.37              | 1.20                 | 1.38               | 341.90              | 1.95                 | 8.23               |                     |                      |                    |
| 341.38              | 1.21                 | 1.45               | 341.91              | 1.96                 | 8.43               |                     |                      |                    |
| 341.39              | 1.23                 | 1.52               | 341.92              | 1.97                 | 8.63               |                     |                      |                    |
| 341.40              | 1.25                 | 1.60               | 341.93              | 1.98                 | 8.83               |                     |                      |                    |
| 341.41              | 1.27                 | 1.68               | 341.94              | 1.99                 | 9.03               |                     |                      |                    |
| 341.42              | 1.28                 | 1.76               | 341.95              | 2.01                 | 9.24               |                     |                      |                    |
| 341.43              | 1.30                 | 1.84               | 341.96              | 2.02                 | 9.45               |                     |                      |                    |
| 341.44              | 1.32                 | 1.92               | 341.97              | 2.03                 | 9.67               |                     |                      |                    |
| 341.45              | 1.33                 | 2.01               | 341.98              | 2.04                 | 9.88               |                     |                      |                    |
| 341.46              | 1.35                 | 2.09               | 341.99              | 2.05                 | 10.10              |                     |                      |                    |
| 341.47              | 1.36                 | 2.18               | 342.00              | 2.06                 | 10.32              |                     |                      |                    |
| 341.48              | 1.38                 | 2.28               | 342.01              | 2.08                 | 10.55              |                     |                      |                    |
| 341.49              | 1.39                 | 2.37               | 342.02              | 2.09                 | 10.77              |                     |                      |                    |
| 341.50              | 1.41                 | 2.47               | 342.03              | 2.10                 | 11.00              |                     |                      |                    |
| 341.51              | 1.42                 | 2.57               | 342.04              | 2.11                 | 11.24              |                     |                      |                    |
| 341.52              | 1.44                 | 2.67               | 342.05              | 2.12                 | 11.47              |                     |                      |                    |



**Stage-Area-Storage for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 341.00              | 0.0                 | 0                       | 342.06              | 5.5                 | 1,472                   |
| 341.02              | 0.0                 | 11                      | 342.08              | 5.7                 | 1,517                   |
| 341.04              | 0.1                 | 23                      | 342.10              | 5.8                 | 1,562                   |
| 341.06              | 0.1                 | 35                      | 342.12              | 6.0                 | 1,609                   |
| 341.08              | 0.2                 | 48                      | 342.14              | 6.2                 | 1,656                   |
| 341.10              | 0.2                 | 62                      | 342.16              | 6.4                 | 1,704                   |
| 341.12              | 0.3                 | 76                      | 342.18              | 6.5                 | 1,752                   |
| 341.14              | 0.3                 | 91                      | 342.20              | 6.7                 | 1,801                   |
| 341.16              | 0.4                 | 106                     | 342.22              | 6.9                 | 1,851                   |
| 341.18              | 0.5                 | 123                     | 342.24              | <b>7.1</b>          | <b>1,901</b>            |
| 341.20              | 0.5                 | 139                     |                     |                     |                         |
| 341.22              | 0.6                 | 157                     |                     |                     |                         |
| 341.24              | 0.7                 | 175                     |                     |                     |                         |
| 341.26              | 0.7                 | 194                     |                     |                     |                         |
| 341.28              | 0.8                 | 213                     |                     |                     |                         |
| 341.30              | 0.9                 | 233                     |                     |                     |                         |
| 341.32              | 0.9                 | 254                     |                     |                     |                         |
| 341.34              | 1.0                 | 275                     |                     |                     |                         |
| 341.36              | 1.1                 | 297                     |                     |                     |                         |
| 341.38              | 1.2                 | 320                     |                     |                     |                         |
| 341.40              | 1.3                 | 343                     |                     |                     |                         |
| 341.42              | 1.4                 | 367                     |                     |                     |                         |
| 341.44              | 1.5                 | 392                     |                     |                     |                         |
| 341.46              | 1.6                 | 417                     |                     |                     |                         |
| 341.48              | 1.7                 | 443                     |                     |                     |                         |
| 341.50              | 1.8                 | 469                     |                     |                     |                         |
| 341.52              | 1.9                 | 496                     |                     |                     |                         |
| 341.54              | 2.0                 | 524                     |                     |                     |                         |
| 341.56              | 2.1                 | 552                     |                     |                     |                         |
| 341.58              | 2.2                 | 581                     |                     |                     |                         |
| 341.60              | 2.3                 | 611                     |                     |                     |                         |
| 341.62              | 2.4                 | 641                     |                     |                     |                         |
| 341.64              | 2.5                 | 672                     |                     |                     |                         |
| 341.66              | 2.6                 | 704                     |                     |                     |                         |
| 341.68              | 2.7                 | 736                     |                     |                     |                         |
| 341.70              | 2.9                 | 769                     |                     |                     |                         |
| 341.72              | 3.0                 | 803                     |                     |                     |                         |
| 341.74              | 3.1                 | 837                     |                     |                     |                         |
| 341.76              | 3.3                 | 872                     |                     |                     |                         |
| 341.78              | 3.4                 | 907                     |                     |                     |                         |
| 341.80              | 3.5                 | 943                     |                     |                     |                         |
| 341.82              | 3.7                 | 980                     |                     |                     |                         |
| 341.84              | 3.8                 | 1,018                   |                     |                     |                         |
| 341.86              | 3.9                 | 1,056                   |                     |                     |                         |
| 341.88              | 4.1                 | 1,094                   |                     |                     |                         |
| 341.90              | 4.2                 | 1,134                   |                     |                     |                         |
| 341.92              | 4.4                 | 1,174                   |                     |                     |                         |
| 341.94              | 4.5                 | 1,214                   |                     |                     |                         |
| 341.96              | 4.7                 | 1,256                   |                     |                     |                         |
| 341.98              | 4.8                 | 1,297                   |                     |                     |                         |
| 342.00              | 5.0                 | 1,340                   |                     |                     |                         |
| 342.02              | 5.2                 | 1,383                   |                     |                     |                         |
| 342.04              | 5.3                 | 1,427                   |                     |                     |                         |

### Summary for Reach R12: 12" Culvert Pond Discharge

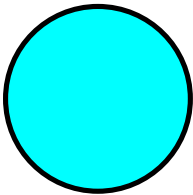
[52] Hint: Inlet/Outlet conditions not evaluated  
[55] Hint: Peak inflow is 323% of Manning's capacity  
[76] Warning: Detained 0.140 af (Pond w/culvert advised)  
[80] Warning: Exceeded Pond 4P by 0.01' @ 0.00 hrs (0.00 cfs 0.005 af)

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth > 0.59" for 25-yr event  
Inflow = 1.07 cfs @ 12.72 hrs, Volume= 0.503 af  
Outflow = 0.33 cfs @ 12.55 hrs, Volume= 0.503 af, Atten= 69%, Lag= 0.0 min  
Routed to Link AP3 : Analysis Point 3

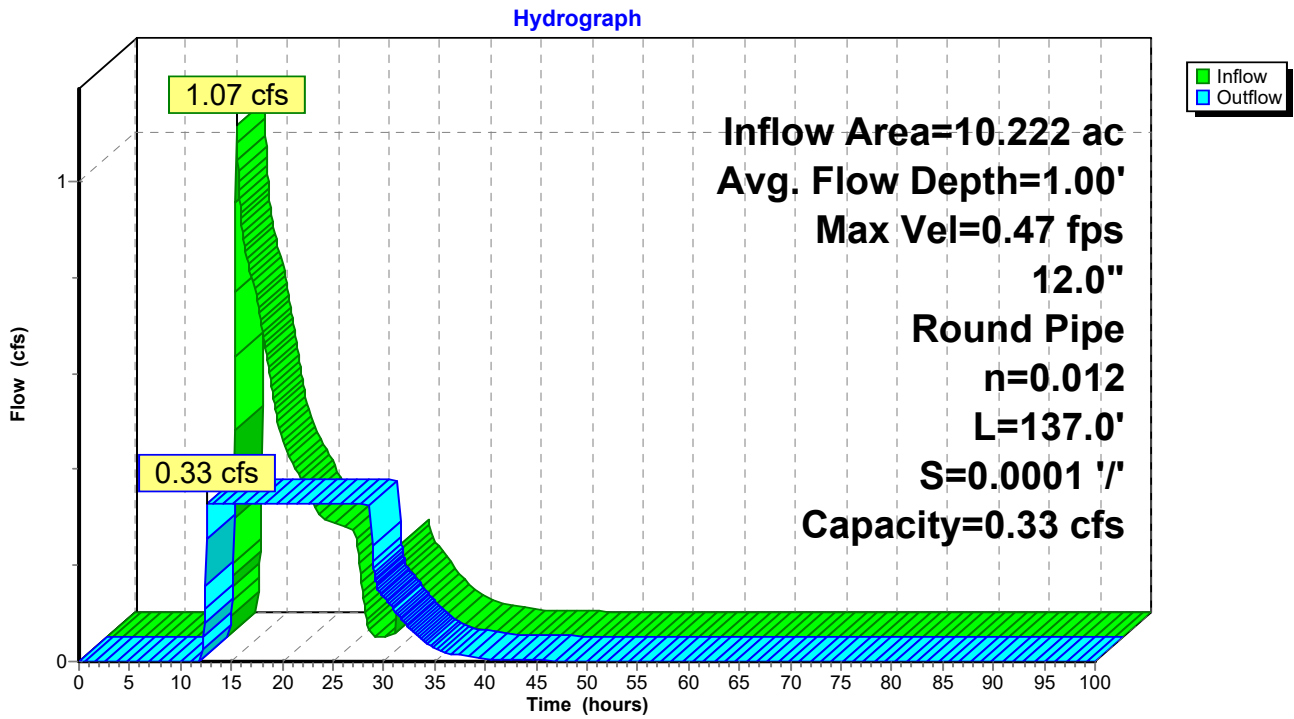
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.47 fps, Min. Travel Time= 4.8 min  
Avg. Velocity = 0.17 fps, Avg. Travel Time= 13.7 min

Peak Storage= 108 cf @ 12.55 hrs  
Average Depth at Peak Storage= 1.00'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 0.33 cfs

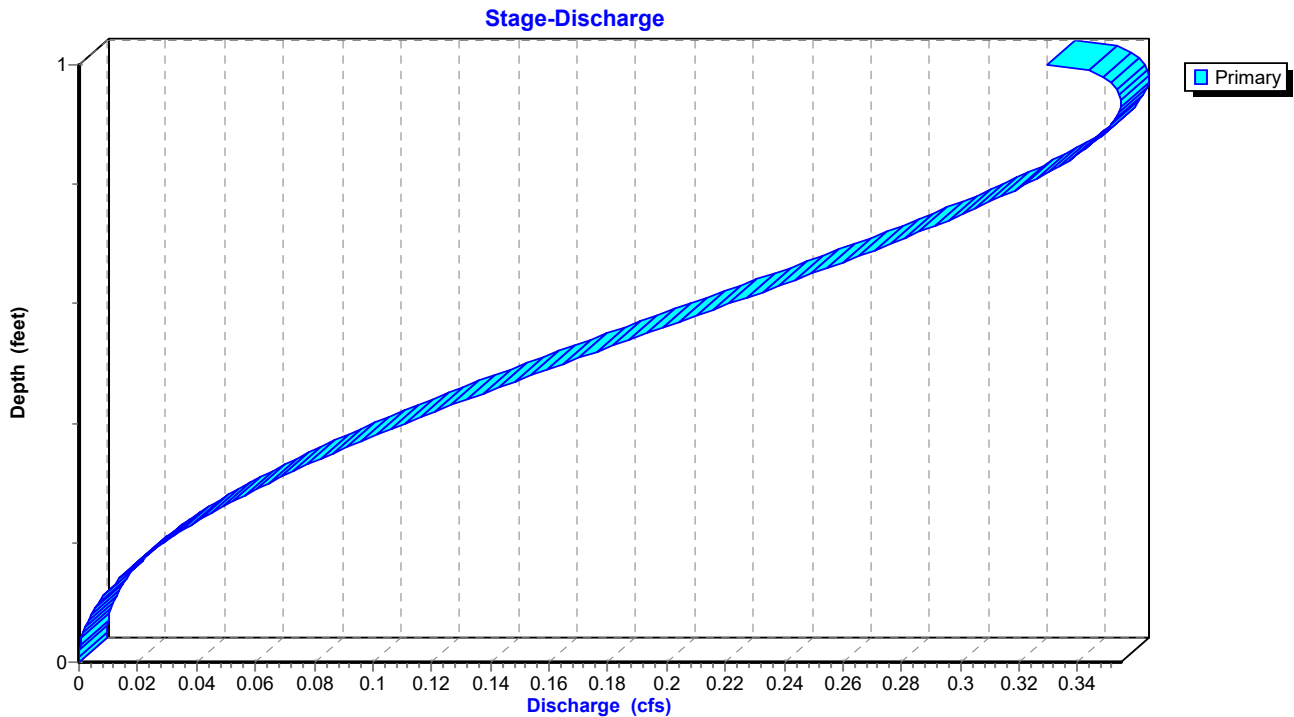
12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 137.0' Slope= 0.0001 '/'  
Inlet Invert= 337.01', Outlet Invert= 337.00'



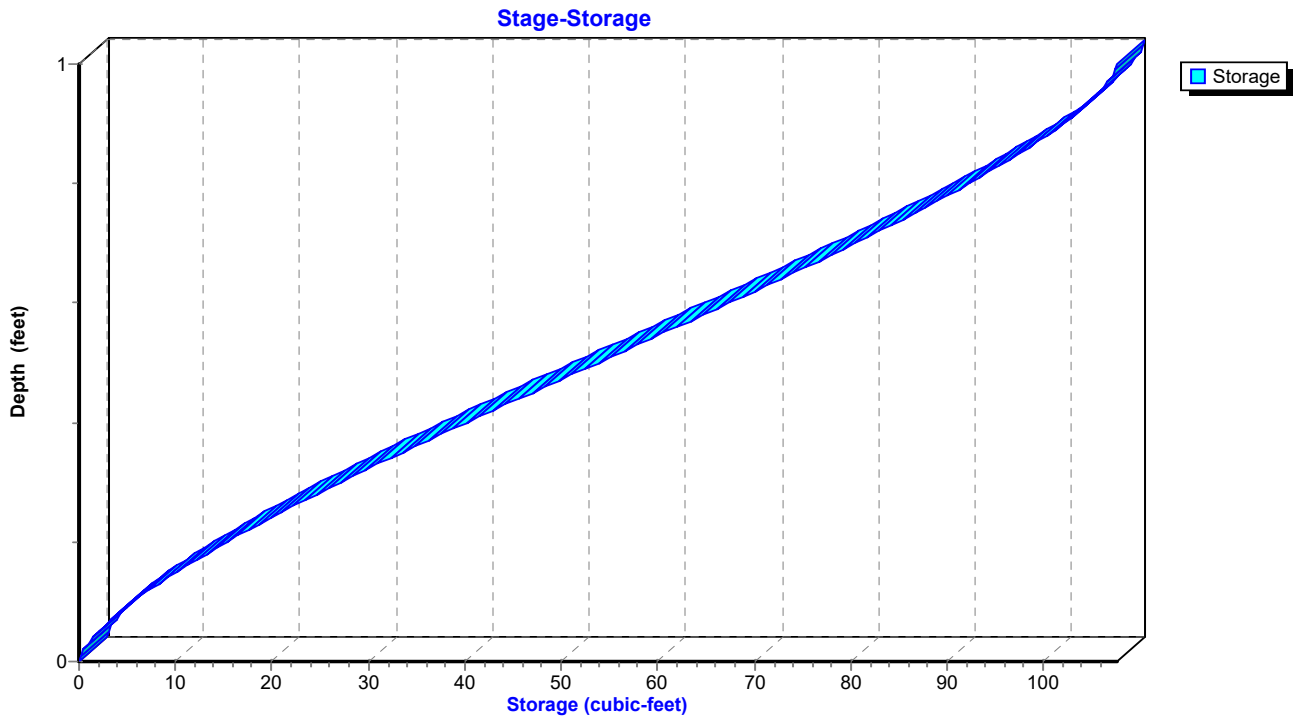
**Reach R12: 12" Culvert Pond Discharge**



**Reach R12: 12" Culvert Pond Discharge**



### Reach R12: 12" Culvert Pond Discharge



**Hydrograph for Reach R12: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 337.01           | 0.00          |
| 2.50         | 0.00         | 0                    | 337.01           | 0.00          |
| 5.00         | 0.00         | 0                    | 337.01           | 0.00          |
| 7.50         | 0.00         | 0                    | 337.01           | 0.00          |
| 10.00        | 0.00         | 0                    | 337.01           | 0.00          |
| 12.50        | <b>0.43</b>  | <b>76</b>            | <b>337.67</b>    | <b>0.26</b>   |
| 15.00        | <b>0.67</b>  | <b>108</b>           | <b>338.01</b>    | <b>0.33</b>   |
| 17.50        | 0.40         | 108                  | 338.01           | 0.33          |
| 20.00        | 0.29         | 108                  | 338.01           | 0.33          |
| 22.50        | 0.24         | 108                  | 338.01           | 0.33          |
| 25.00        | 0.12         | 108                  | 338.01           | 0.33          |
| 27.50        | 0.00         | 108                  | 338.01           | 0.33          |
| 30.00        | 0.13         | 46                   | 337.45           | 0.13          |
| 32.50        | 0.07         | 29                   | 337.32           | 0.07          |
| 35.00        | 0.03         | 15                   | 337.21           | 0.03          |
| 37.50        | 0.01         | 9                    | 337.14           | 0.01          |
| 40.00        | 0.01         | 5                    | 337.10           | 0.01          |
| 42.50        | 0.00         | 4                    | 337.08           | 0.00          |
| 45.00        | 0.00         | 3                    | 337.07           | 0.00          |
| 47.50        | 0.00         | 2                    | 337.06           | 0.00          |
| 50.00        | 0.00         | 2                    | 337.05           | 0.00          |
| 52.50        | 0.00         | 1                    | 337.05           | 0.00          |
| 55.00        | 0.00         | 1                    | 337.05           | 0.00          |
| 57.50        | 0.00         | 1                    | 337.04           | 0.00          |
| 60.00        | 0.00         | 1                    | 337.04           | 0.00          |
| 62.50        | 0.00         | 1                    | 337.04           | 0.00          |
| 65.00        | 0.00         | 1                    | 337.04           | 0.00          |
| 67.50        | 0.00         | 1                    | 337.03           | 0.00          |
| 70.00        | 0.00         | 1                    | 337.03           | 0.00          |
| 72.50        | 0.00         | 1                    | 337.03           | 0.00          |
| 75.00        | 0.00         | 1                    | 337.03           | 0.00          |
| 77.50        | 0.00         | 0                    | 337.03           | 0.00          |
| 80.00        | 0.00         | 0                    | 337.03           | 0.00          |
| 82.50        | 0.00         | 0                    | 337.03           | 0.00          |
| 85.00        | 0.00         | 0                    | 337.03           | 0.00          |
| 87.50        | 0.00         | 0                    | 337.03           | 0.00          |
| 90.00        | 0.00         | 0                    | 337.02           | 0.00          |
| 92.50        | 0.00         | 0                    | 337.02           | 0.00          |
| 95.00        | 0.00         | 0                    | 337.02           | 0.00          |
| 97.50        | 0.00         | 0                    | 337.02           | 0.00          |
| 100.00       | 0.00         | 0                    | 337.02           | 0.00          |

**Stage-Discharge for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.01              | 0.00                 | 0.00               | 337.54              | 0.43                 | 0.18               |
| 337.02              | 0.04                 | 0.00               | 337.55              | 0.43                 | 0.19               |
| 337.03              | 0.06                 | 0.00               | 337.56              | 0.44                 | 0.19               |
| 337.04              | 0.08                 | 0.00               | 337.57              | 0.44                 | 0.20               |
| 337.05              | 0.09                 | 0.00               | 337.58              | 0.44                 | 0.20               |
| 337.06              | 0.11                 | 0.00               | 337.59              | 0.45                 | 0.21               |
| 337.07              | 0.12                 | 0.00               | 337.60              | 0.45                 | 0.22               |
| 337.08              | 0.13                 | 0.00               | 337.61              | 0.45                 | 0.22               |
| 337.09              | 0.15                 | 0.00               | 337.62              | 0.45                 | 0.23               |
| 337.10              | 0.16                 | 0.01               | 337.63              | 0.46                 | 0.23               |
| 337.11              | 0.17                 | 0.01               | 337.64              | 0.46                 | 0.24               |
| 337.12              | 0.18                 | 0.01               | 337.65              | 0.46                 | 0.24               |
| 337.13              | 0.19                 | 0.01               | 337.66              | 0.46                 | 0.25               |
| 337.14              | 0.20                 | 0.01               | 337.67              | 0.46                 | 0.25               |
| 337.15              | 0.21                 | 0.01               | 337.68              | 0.47                 | 0.26               |
| 337.16              | 0.22                 | 0.02               | 337.69              | 0.47                 | 0.27               |
| 337.17              | 0.23                 | 0.02               | 337.70              | 0.47                 | 0.27               |
| 337.18              | 0.23                 | 0.02               | 337.71              | 0.47                 | 0.28               |
| 337.19              | 0.24                 | 0.02               | 337.72              | 0.47                 | 0.28               |
| 337.20              | 0.25                 | 0.03               | 337.73              | 0.47                 | 0.29               |
| 337.21              | 0.26                 | 0.03               | 337.74              | 0.47                 | 0.29               |
| 337.22              | 0.27                 | 0.03               | 337.75              | 0.47                 | 0.30               |
| 337.23              | 0.27                 | 0.03               | 337.76              | 0.48                 | 0.30               |
| 337.24              | 0.28                 | 0.04               | 337.77              | 0.48                 | 0.31               |
| 337.25              | 0.29                 | 0.04               | 337.78              | 0.48                 | 0.31               |
| 337.26              | 0.29                 | 0.05               | 337.79              | 0.48                 | 0.31               |
| 337.27              | 0.30                 | 0.05               | 337.80              | 0.48                 | 0.32               |
| 337.28              | 0.31                 | 0.05               | 337.81              | 0.48                 | 0.32               |
| 337.29              | 0.31                 | 0.06               | 337.82              | <b>0.48</b>          | 0.33               |
| 337.30              | 0.32                 | 0.06               | 337.83              | 0.48                 | 0.33               |
| 337.31              | 0.33                 | 0.06               | 337.84              | 0.48                 | 0.33               |
| 337.32              | 0.33                 | 0.07               | 337.85              | 0.48                 | 0.34               |
| 337.33              | 0.34                 | 0.07               | 337.86              | 0.48                 | 0.34               |
| 337.34              | 0.34                 | 0.08               | 337.87              | 0.48                 | 0.34               |
| 337.35              | 0.35                 | 0.08               | 337.88              | 0.48                 | 0.35               |
| 337.36              | 0.35                 | 0.09               | 337.89              | 0.47                 | 0.35               |
| 337.37              | 0.36                 | 0.09               | 337.90              | 0.47                 | 0.35               |
| 337.38              | 0.36                 | 0.10               | 337.91              | 0.47                 | 0.35               |
| 337.39              | 0.37                 | 0.10               | 337.92              | 0.47                 | 0.35               |
| 337.40              | 0.37                 | 0.11               | 337.93              | 0.47                 | 0.35               |
| 337.41              | 0.38                 | 0.11               | 337.94              | 0.47                 | 0.35               |
| 337.42              | 0.38                 | 0.12               | 337.95              | 0.46                 | <b>0.35</b>        |
| 337.43              | 0.39                 | 0.12               | 337.96              | 0.46                 | 0.35               |
| 337.44              | 0.39                 | 0.13               | 337.97              | 0.46                 | 0.35               |
| 337.45              | 0.40                 | 0.13               | 337.98              | 0.45                 | 0.35               |
| 337.46              | 0.40                 | 0.14               | 337.99              | 0.45                 | 0.35               |
| 337.47              | 0.40                 | 0.14               | 338.00              | 0.44                 | 0.34               |
| 337.48              | 0.41                 | 0.15               | 338.01              | 0.42                 | 0.33               |
| 337.49              | 0.41                 | 0.15               |                     |                      |                    |
| 337.50              | 0.42                 | 0.16               |                     |                      |                    |
| 337.51              | 0.42                 | 0.16               |                     |                      |                    |
| 337.52              | 0.42                 | 0.17               |                     |                      |                    |
| 337.53              | 0.43                 | 0.18               |                     |                      |                    |

**Stage-Area-Storage for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.01              | 0.0                 | 0                       | 337.54              | 0.4                 | 58                      |
| 337.02              | 0.0                 | 0                       | 337.55              | 0.4                 | 59                      |
| 337.03              | 0.0                 | 1                       | 337.56              | 0.4                 | 61                      |
| 337.04              | 0.0                 | 1                       | 337.57              | 0.5                 | 62                      |
| 337.05              | 0.0                 | 1                       | 337.58              | 0.5                 | 63                      |
| 337.06              | 0.0                 | 2                       | 337.59              | 0.5                 | 65                      |
| 337.07              | 0.0                 | 3                       | 337.60              | 0.5                 | 66                      |
| 337.08              | 0.0                 | 3                       | 337.61              | 0.5                 | 67                      |
| 337.09              | 0.0                 | 4                       | 337.62              | 0.5                 | 69                      |
| 337.10              | 0.0                 | 5                       | 337.63              | 0.5                 | 70                      |
| 337.11              | 0.0                 | 6                       | 337.64              | 0.5                 | 71                      |
| 337.12              | 0.0                 | 6                       | 337.65              | 0.5                 | 73                      |
| 337.13              | 0.1                 | 7                       | 337.66              | 0.5                 | 74                      |
| 337.14              | 0.1                 | 8                       | 337.67              | 0.5                 | 75                      |
| 337.15              | 0.1                 | 9                       | 337.68              | 0.6                 | 77                      |
| 337.16              | 0.1                 | 10                      | 337.69              | 0.6                 | 78                      |
| 337.17              | 0.1                 | 11                      | 337.70              | 0.6                 | 79                      |
| 337.18              | 0.1                 | 12                      | 337.71              | 0.6                 | 80                      |
| 337.19              | 0.1                 | 13                      | 337.72              | 0.6                 | 82                      |
| 337.20              | 0.1                 | 14                      | 337.73              | 0.6                 | 83                      |
| 337.21              | 0.1                 | 15                      | 337.74              | 0.6                 | 84                      |
| 337.22              | 0.1                 | 16                      | 337.75              | 0.6                 | 85                      |
| 337.23              | 0.1                 | 18                      | 337.76              | 0.6                 | 87                      |
| 337.24              | 0.1                 | 19                      | 337.77              | 0.6                 | 88                      |
| 337.25              | 0.1                 | 20                      | 337.78              | 0.6                 | 89                      |
| 337.26              | 0.2                 | 21                      | 337.79              | 0.7                 | 90                      |
| 337.27              | 0.2                 | 22                      | 337.80              | 0.7                 | 91                      |
| 337.28              | 0.2                 | 23                      | 337.81              | 0.7                 | 92                      |
| 337.29              | 0.2                 | 25                      | 337.82              | 0.7                 | 93                      |
| 337.30              | 0.2                 | 26                      | 337.83              | 0.7                 | 94                      |
| 337.31              | 0.2                 | 27                      | 337.84              | 0.7                 | 95                      |
| 337.32              | 0.2                 | 28                      | 337.85              | 0.7                 | 96                      |
| 337.33              | 0.2                 | 30                      | 337.86              | 0.7                 | 97                      |
| 337.34              | 0.2                 | 31                      | 337.87              | 0.7                 | 98                      |
| 337.35              | 0.2                 | 32                      | 337.88              | 0.7                 | 99                      |
| 337.36              | 0.2                 | 34                      | 337.89              | 0.7                 | 100                     |
| 337.37              | 0.3                 | 35                      | 337.90              | 0.7                 | 101                     |
| 337.38              | 0.3                 | 36                      | 337.91              | 0.7                 | 102                     |
| 337.39              | 0.3                 | 38                      | 337.92              | 0.8                 | 103                     |
| 337.40              | 0.3                 | 39                      | 337.93              | 0.8                 | 104                     |
| 337.41              | 0.3                 | 40                      | 337.94              | 0.8                 | 104                     |
| 337.42              | 0.3                 | 42                      | 337.95              | 0.8                 | 105                     |
| 337.43              | 0.3                 | 43                      | 337.96              | 0.8                 | 106                     |
| 337.44              | 0.3                 | 44                      | 337.97              | 0.8                 | 106                     |
| 337.45              | 0.3                 | 46                      | 337.98              | 0.8                 | 107                     |
| 337.46              | 0.3                 | 47                      | 337.99              | 0.8                 | 107                     |
| 337.47              | 0.4                 | 48                      | 338.00              | 0.8                 | 107                     |
| 337.48              | 0.4                 | 50                      | 338.01              | <b>0.8</b>          | <b>108</b>              |
| 337.49              | 0.4                 | 51                      |                     |                     |                         |
| 337.50              | 0.4                 | 52                      |                     |                     |                         |
| 337.51              | 0.4                 | 54                      |                     |                     |                         |
| 337.52              | 0.4                 | 55                      |                     |                     |                         |
| 337.53              | 0.4                 | 57                      |                     |                     |                         |

**Summary for Reach R7: Proposed RRv Swale**

Inflow Area = 5.515 ac, 54.87% Impervious, Inflow Depth = 2.96" for 25-yr event  
 Inflow = 19.21 cfs @ 12.10 hrs, Volume= 1.362 af  
 Outflow = 18.55 cfs @ 12.13 hrs, Volume= 1.362 af, Atten= 3%, Lag= 2.2 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 1.84 fps, Min. Travel Time= 2.9 min  
 Avg. Velocity = 0.50 fps, Avg. Travel Time= 10.7 min

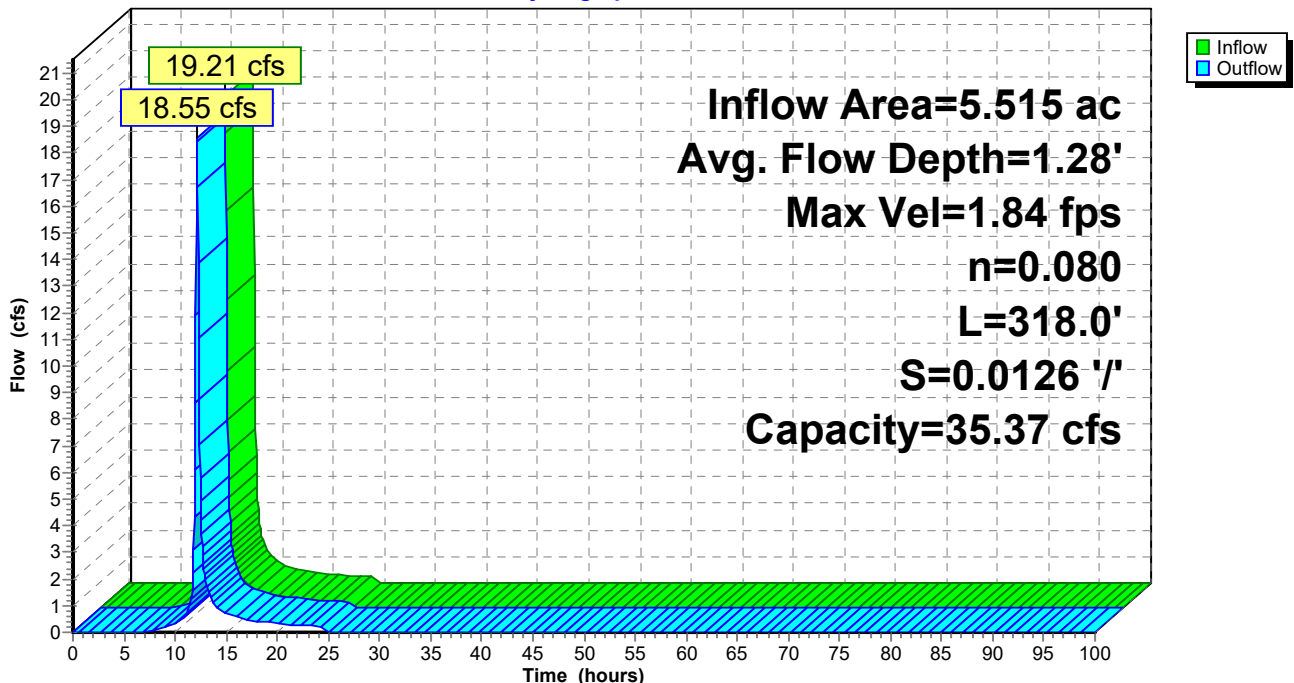
Peak Storage= 3,203 cf @ 12.13 hrs  
 Average Depth at Peak Storage= 1.28' , Surface Width= 11.70'  
 Bank-Full Depth= 1.75' Flow Area= 16.2 sf, Capacity= 35.37 cfs

4.00' x 1.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 14.50'  
 Length= 318.0' Slope= 0.0126 '/  
 Inlet Invert= 335.00', Outlet Invert= 331.00'



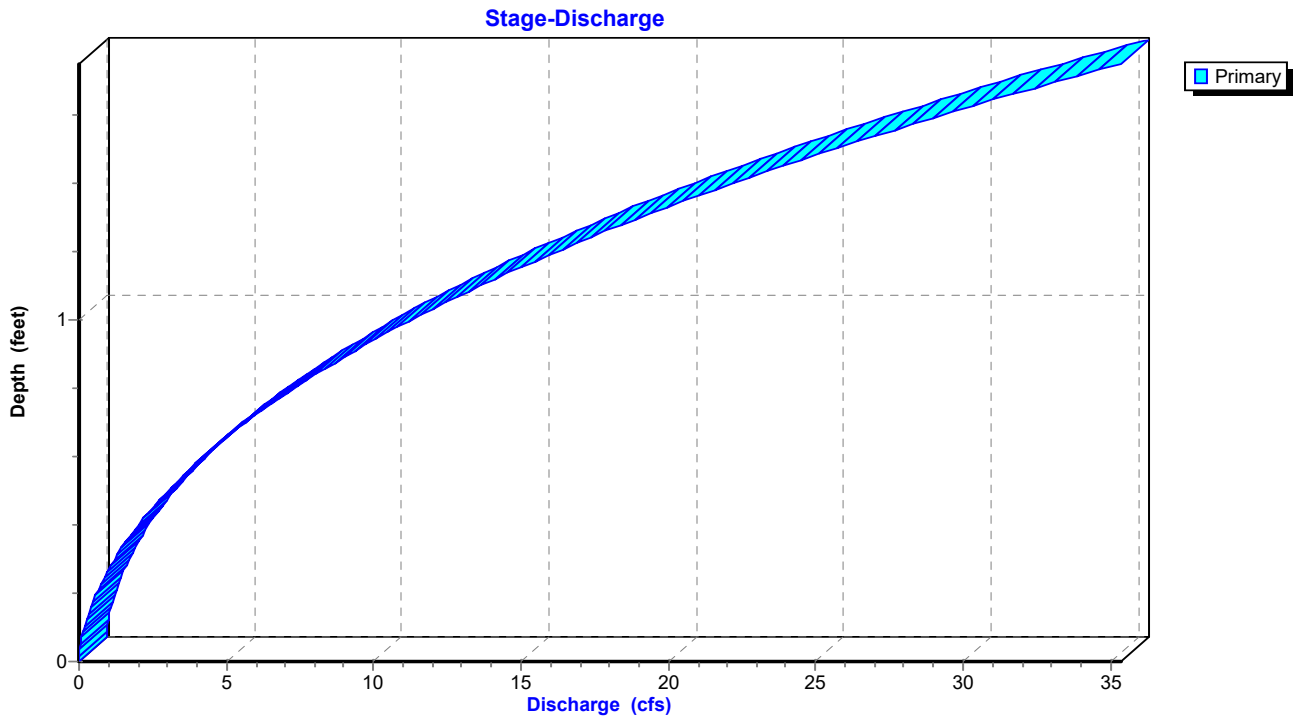
**Reach R7: Proposed RRv Swale**

Hydrograph

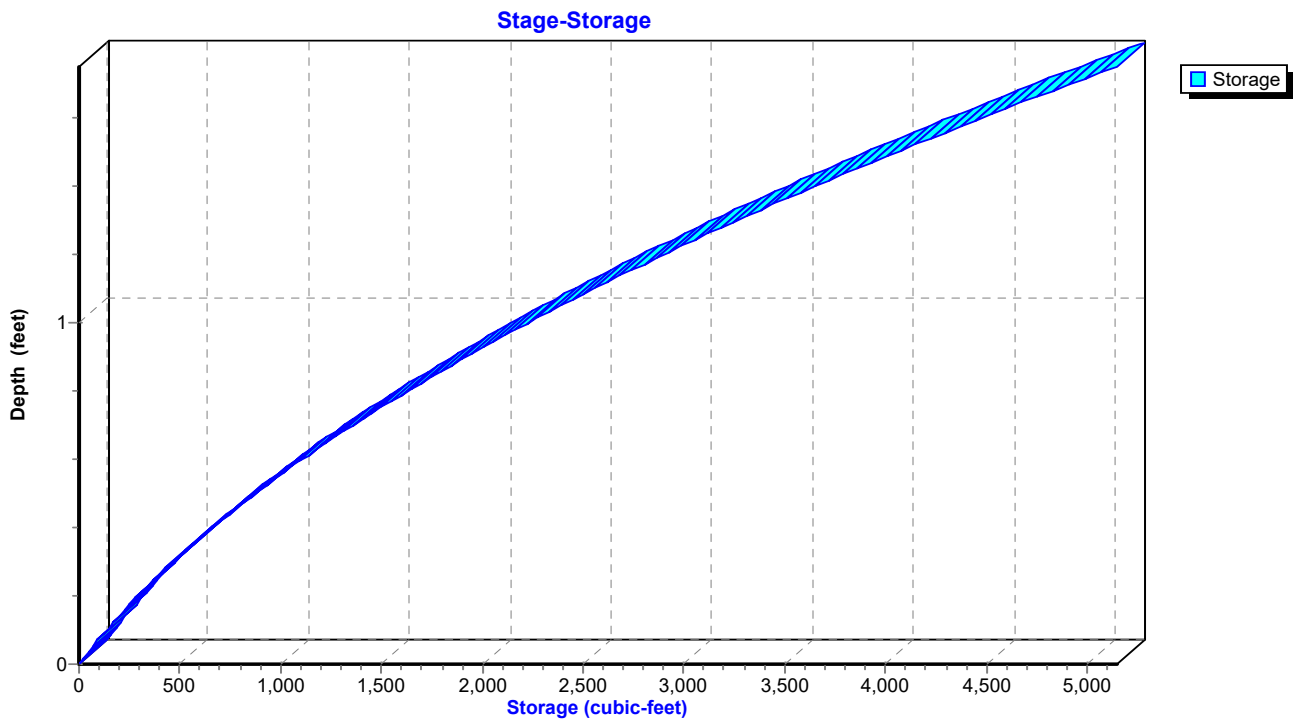




**Reach R7: Proposed RRv Swale**



**Reach R7: Proposed RRv Swale**



**Hydrograph for Reach R7: Proposed RRv Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 335.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 7.50            | 0.06            | 62                      | 335.05              | 0.05             |
| 10.00           | <b>0.32</b>     | <b>185</b>              | <b>335.13</b>       | <b>0.30</b>      |
| 12.50           | <b>4.14</b>     | <b>1,228</b>            | <b>335.65</b>       | <b>4.91</b>      |
| 15.00           | 0.72            | 333                     | 335.22              | 0.73             |
| 17.50           | 0.45            | 246                     | 335.17              | 0.46             |
| 20.00           | 0.31            | 195                     | 335.14              | 0.32             |
| 22.50           | 0.27            | 177                     | 335.13              | 0.28             |
| 25.00           | 0.00            | 25                      | 335.02              | 0.01             |
| 27.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 30.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 335.00              | 0.00             |

**Stage-Discharge for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 335.00              | 0.00                 | 0.00               | 336.06              | 1.66                 | 12.63              |
| 335.02              | 0.15                 | 0.01               | 336.08              | 1.68                 | 13.11              |
| 335.04              | 0.24                 | 0.04               | 336.10              | 1.69                 | 13.60              |
| 335.06              | 0.31                 | 0.08               | 336.12              | 1.71                 | 14.10              |
| 335.08              | 0.37                 | 0.13               | 336.14              | 1.73                 | 14.61              |
| 335.10              | 0.43                 | 0.18               | 336.16              | 1.74                 | 15.13              |
| 335.12              | 0.48                 | 0.25               | 336.18              | 1.76                 | 15.66              |
| 335.14              | 0.53                 | 0.33               | 336.20              | 1.78                 | 16.20              |
| 335.16              | 0.57                 | 0.41               | 336.22              | 1.79                 | 16.75              |
| 335.18              | 0.61                 | 0.50               | 336.24              | 1.81                 | 17.31              |
| 335.20              | 0.65                 | 0.60               | 336.26              | 1.82                 | 17.88              |
| 335.22              | 0.69                 | 0.71               | 336.28              | 1.84                 | 18.46              |
| 335.24              | 0.72                 | 0.82               | 336.30              | 1.86                 | 19.05              |
| 335.26              | 0.76                 | 0.94               | 336.32              | 1.87                 | 19.66              |
| 335.28              | 0.79                 | 1.07               | 336.34              | 1.89                 | 20.27              |
| 335.30              | 0.83                 | 1.21               | 336.36              | 1.90                 | 20.90              |
| 335.32              | 0.86                 | 1.36               | 336.38              | 1.92                 | 21.53              |
| 335.34              | 0.89                 | 1.51               | 336.40              | 1.93                 | 22.18              |
| 335.36              | 0.92                 | 1.68               | 336.42              | 1.95                 | 22.84              |
| 335.38              | 0.94                 | 1.84               | 336.44              | 1.96                 | 23.51              |
| 335.40              | 0.97                 | 2.02               | 336.46              | 1.98                 | 24.19              |
| 335.42              | 1.00                 | 2.21               | 336.48              | 1.99                 | 24.88              |
| 335.44              | 1.02                 | 2.40               | 336.50              | 2.01                 | 25.59              |
| 335.46              | 1.05                 | 2.60               | 336.52              | 2.02                 | 26.30              |
| 335.48              | 1.08                 | 2.81               | 336.54              | 2.04                 | 27.03              |
| 335.50              | 1.10                 | 3.03               | 336.56              | 2.05                 | 27.77              |
| 335.52              | 1.12                 | 3.25               | 336.58              | 2.07                 | 28.52              |
| 335.54              | 1.15                 | 3.49               | 336.60              | 2.08                 | 29.28              |
| 335.56              | 1.17                 | 3.73               | 336.62              | 2.09                 | 30.05              |
| 335.58              | 1.19                 | 3.98               | 336.64              | 2.11                 | 30.84              |
| 335.60              | 1.22                 | 4.24               | 336.66              | 2.12                 | 31.64              |
| 335.62              | 1.24                 | 4.50               | 336.68              | 2.14                 | 32.44              |
| 335.64              | 1.26                 | 4.78               | 336.70              | 2.15                 | 33.27              |
| 335.66              | 1.28                 | 5.06               | 336.72              | 2.16                 | 34.10              |
| 335.68              | 1.30                 | 5.35               | 336.74              | <b>2.18</b>          | <b>34.95</b>       |
| 335.70              | 1.32                 | 5.65               |                     |                      |                    |
| 335.72              | 1.34                 | 5.96               |                     |                      |                    |
| 335.74              | 1.36                 | 6.28               |                     |                      |                    |
| 335.76              | 1.38                 | 6.61               |                     |                      |                    |
| 335.78              | 1.40                 | 6.95               |                     |                      |                    |
| 335.80              | 1.42                 | 7.29               |                     |                      |                    |
| 335.82              | 1.44                 | 7.65               |                     |                      |                    |
| 335.84              | 1.46                 | 8.01               |                     |                      |                    |
| 335.86              | 1.48                 | 8.38               |                     |                      |                    |
| 335.88              | 1.50                 | 8.76               |                     |                      |                    |
| 335.90              | 1.52                 | 9.16               |                     |                      |                    |
| 335.92              | 1.54                 | 9.56               |                     |                      |                    |
| 335.94              | 1.55                 | 9.97               |                     |                      |                    |
| 335.96              | 1.57                 | 10.39              |                     |                      |                    |
| 335.98              | 1.59                 | 10.82              |                     |                      |                    |
| 336.00              | 1.61                 | 11.25              |                     |                      |                    |
| 336.02              | 1.63                 | 11.70              |                     |                      |                    |
| 336.04              | 1.64                 | 12.16              |                     |                      |                    |

**Stage-Area-Storage for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 335.00              | 0.0                 | 0                       | 336.06              | 7.6                 | 2,420                   |
| 335.02              | 0.1                 | 26                      | 336.08              | 7.8                 | 2,487                   |
| 335.04              | 0.2                 | 52                      | 336.10              | 8.0                 | 2,554                   |
| 335.06              | 0.3                 | 80                      | 336.12              | 8.2                 | 2,621                   |
| 335.08              | 0.3                 | 108                     | 336.14              | 8.5                 | 2,690                   |
| 335.10              | 0.4                 | 137                     | 336.16              | 8.7                 | 2,759                   |
| 335.12              | 0.5                 | 166                     | 336.18              | 8.9                 | 2,829                   |
| 335.14              | 0.6                 | 197                     | 336.20              | 9.1                 | 2,900                   |
| 335.16              | 0.7                 | 228                     | 336.22              | 9.3                 | 2,972                   |
| 335.18              | 0.8                 | 260                     | 336.24              | 9.6                 | 3,044                   |
| 335.20              | 0.9                 | 293                     | 336.26              | 9.8                 | 3,117                   |
| 335.22              | 1.0                 | 326                     | 336.28              | 10.0                | 3,191                   |
| 335.24              | 1.1                 | 360                     | 336.30              | 10.3                | 3,266                   |
| 335.26              | 1.2                 | 395                     | 336.32              | 10.5                | 3,341                   |
| 335.28              | 1.4                 | 431                     | 336.34              | 10.7                | 3,418                   |
| 335.30              | 1.5                 | 467                     | 336.36              | 11.0                | 3,494                   |
| 335.32              | 1.6                 | 505                     | 336.38              | 11.2                | 3,572                   |
| 335.34              | 1.7                 | 543                     | 336.40              | 11.5                | 3,651                   |
| 335.36              | 1.8                 | 582                     | 336.42              | 11.7                | 3,730                   |
| 335.38              | 2.0                 | 621                     | 336.44              | 12.0                | 3,810                   |
| 335.40              | 2.1                 | 661                     | 336.46              | 12.2                | 3,891                   |
| 335.42              | 2.2                 | 703                     | 336.48              | 12.5                | 3,972                   |
| 335.44              | 2.3                 | 744                     | 336.50              | 12.8                | 4,055                   |
| 335.46              | 2.5                 | 787                     | 336.52              | 13.0                | 4,138                   |
| 335.48              | 2.6                 | 830                     | 336.54              | 13.3                | 4,221                   |
| 335.50              | 2.8                 | 875                     | 336.56              | 13.5                | 4,306                   |
| 335.52              | 2.9                 | 919                     | 336.58              | 13.8                | 4,391                   |
| 335.54              | 3.0                 | 965                     | 336.60              | 14.1                | 4,478                   |
| 335.56              | 3.2                 | 1,011                   | 336.62              | 14.4                | 4,564                   |
| 335.58              | 3.3                 | 1,059                   | 336.64              | 14.6                | 4,652                   |
| 335.60              | 3.5                 | 1,107                   | 336.66              | 14.9                | 4,740                   |
| 335.62              | 3.6                 | 1,155                   | 336.68              | 15.2                | 4,830                   |
| 335.64              | 3.8                 | 1,205                   | 336.70              | 15.5                | 4,919                   |
| 335.66              | 3.9                 | 1,255                   | 336.72              | 15.8                | 5,010                   |
| 335.68              | 4.1                 | 1,306                   | 336.74              | <b>16.0</b>         | <b>5,102</b>            |
| 335.70              | 4.3                 | 1,358                   |                     |                     |                         |
| 335.72              | 4.4                 | 1,410                   |                     |                     |                         |
| 335.74              | 4.6                 | 1,464                   |                     |                     |                         |
| 335.76              | 4.8                 | 1,518                   |                     |                     |                         |
| 335.78              | 4.9                 | 1,573                   |                     |                     |                         |
| 335.80              | 5.1                 | 1,628                   |                     |                     |                         |
| 335.82              | 5.3                 | 1,685                   |                     |                     |                         |
| 335.84              | 5.5                 | 1,742                   |                     |                     |                         |
| 335.86              | 5.7                 | 1,800                   |                     |                     |                         |
| 335.88              | 5.8                 | 1,858                   |                     |                     |                         |
| 335.90              | 6.0                 | 1,918                   |                     |                     |                         |
| 335.92              | 6.2                 | 1,978                   |                     |                     |                         |
| 335.94              | 6.4                 | 2,039                   |                     |                     |                         |
| 335.96              | 6.6                 | 2,100                   |                     |                     |                         |
| 335.98              | 6.8                 | 2,163                   |                     |                     |                         |
| 336.00              | 7.0                 | 2,226                   |                     |                     |                         |
| 336.02              | 7.2                 | 2,290                   |                     |                     |                         |
| 336.04              | 7.4                 | 2,355                   |                     |                     |                         |

**Summary for Reach R8: Proposed RRv Swale**

Inflow Area = 2.075 ac, 33.06% Impervious, Inflow Depth = 0.62" for 25-yr event  
 Inflow = 0.39 cfs @ 12.93 hrs, Volume= 0.107 af  
 Outflow = 0.37 cfs @ 13.11 hrs, Volume= 0.107 af, Atten= 5%, Lag= 10.6 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.70 fps, Min. Travel Time= 13.6 min  
 Avg. Velocity = 0.29 fps, Avg. Travel Time= 32.6 min

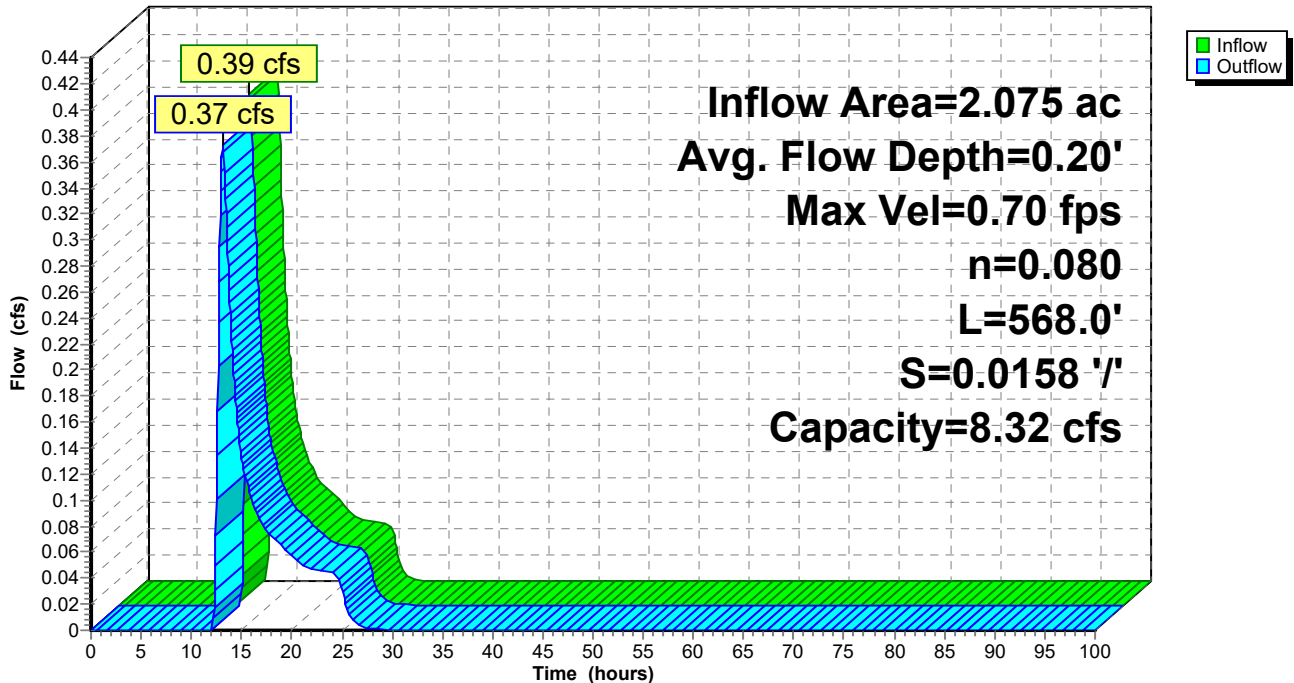
Peak Storage= 304 cf @ 13.11 hrs  
 Average Depth at Peak Storage= 0.20' , Surface Width= 3.23'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 8.32 cfs

2.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 568.0' Slope= 0.0158 '/  
 Inlet Invert= 340.00', Outlet Invert= 331.00'

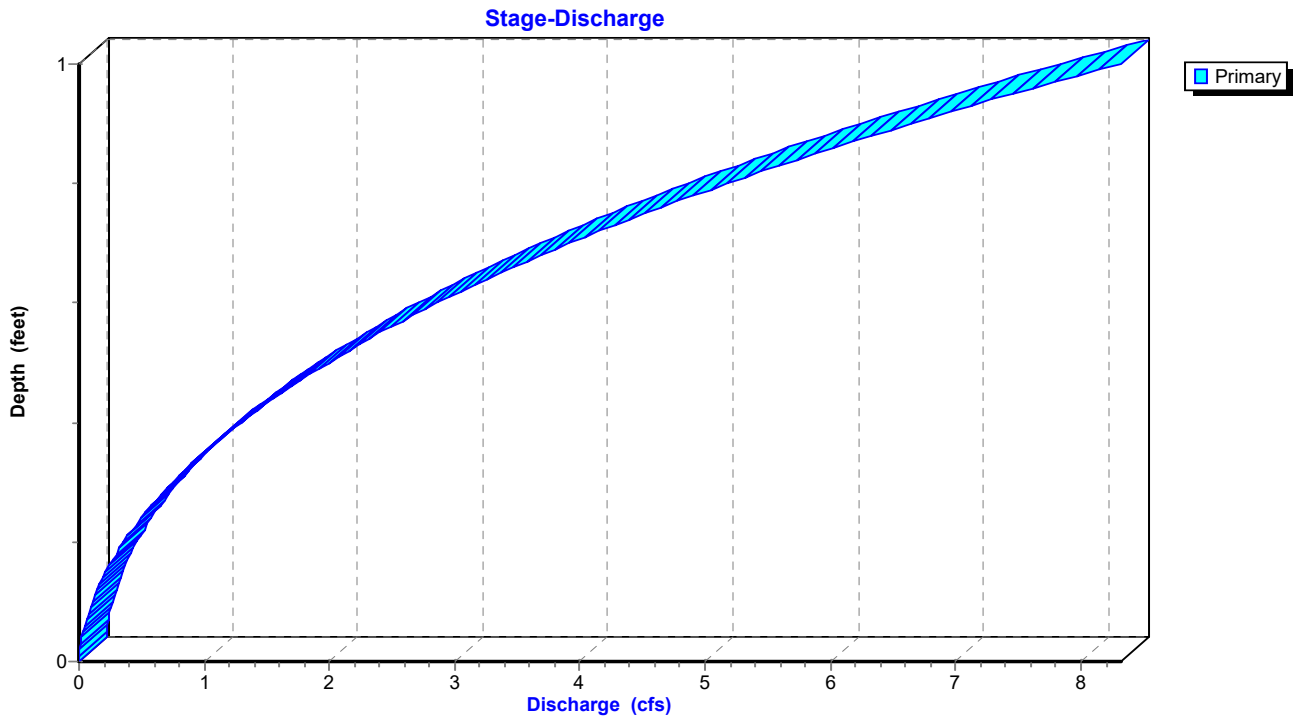


**Reach R8: Proposed RRv Swale**

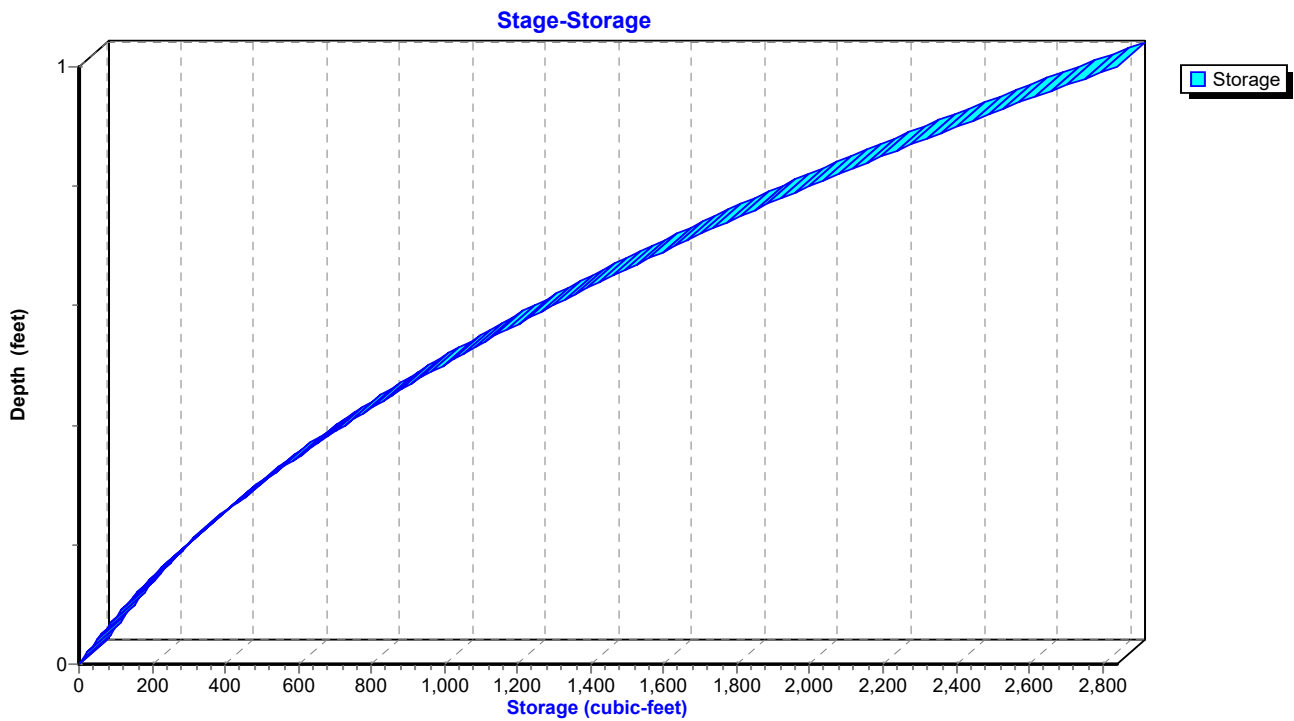
Hydrograph



### Reach R8: Proposed RRv Swale



### Reach R8: Proposed RRv Swale



**Hydrograph for Reach R8: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 340.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 340.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 340.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 340.00           | 0.00          |
| 10.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 12.50        | <b>0.24</b>  | <b>127</b>           | <b>340.10</b>    | <b>0.10</b>   |
| 15.00        | <b>0.12</b>  | <b>152</b>           | <b>340.11</b>    | <b>0.13</b>   |
| 17.50        | 0.07         | 105                  | 340.08           | 0.08          |
| 20.00        | 0.06         | 88                   | 340.07           | 0.06          |
| 22.50        | 0.05         | 76                   | 340.06           | 0.05          |
| 25.00        | 0.02         | 59                   | 340.05           | 0.03          |
| 27.50        | 0.00         | 9                    | 340.01           | 0.00          |
| 30.00        | 0.00         | 2                    | 340.00           | 0.00          |
| 32.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 35.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 340.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 340.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 340.00           | 0.00          |

**Stage-Discharge for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 340.00              | 0.00                 | 0.00               | 340.53              | 1.17                 | 2.23               |
| 340.01              | 0.11                 | 0.00               | 340.54              | 1.19                 | 2.32               |
| 340.02              | 0.17                 | 0.01               | 340.55              | 1.20                 | 2.40               |
| 340.03              | 0.22                 | 0.01               | 340.56              | 1.21                 | 2.49               |
| 340.04              | 0.26                 | 0.02               | 340.57              | 1.22                 | 2.58               |
| 340.05              | 0.30                 | 0.03               | 340.58              | 1.23                 | 2.67               |
| 340.06              | 0.34                 | 0.04               | 340.59              | 1.24                 | 2.77               |
| 340.07              | 0.37                 | 0.06               | 340.60              | 1.26                 | 2.86               |
| 340.08              | 0.40                 | 0.07               | 340.61              | 1.27                 | 2.96               |
| 340.09              | 0.43                 | 0.09               | 340.62              | 1.28                 | 3.06               |
| 340.10              | 0.46                 | 0.11               | 340.63              | 1.29                 | 3.16               |
| 340.11              | 0.49                 | 0.12               | 340.64              | 1.30                 | 3.26               |
| 340.12              | 0.51                 | 0.15               | 340.65              | 1.31                 | 3.37               |
| 340.13              | 0.54                 | 0.17               | 340.66              | 1.32                 | 3.47               |
| 340.14              | 0.56                 | 0.19               | 340.67              | 1.33                 | 3.58               |
| 340.15              | 0.58                 | 0.21               | 340.68              | 1.34                 | 3.69               |
| 340.16              | 0.61                 | 0.24               | 340.69              | 1.36                 | 3.81               |
| 340.17              | 0.63                 | 0.27               | 340.70              | 1.37                 | 3.92               |
| 340.18              | 0.65                 | 0.30               | 340.71              | 1.38                 | 4.04               |
| 340.19              | 0.67                 | 0.33               | 340.72              | 1.39                 | 4.16               |
| 340.20              | 0.69                 | 0.36               | 340.73              | 1.40                 | 4.28               |
| 340.21              | 0.71                 | 0.39               | 340.74              | 1.41                 | 4.40               |
| 340.22              | 0.72                 | 0.42               | 340.75              | 1.42                 | 4.52               |
| 340.23              | 0.74                 | 0.46               | 340.76              | 1.43                 | 4.65               |
| 340.24              | 0.76                 | 0.50               | 340.77              | 1.44                 | 4.78               |
| 340.25              | 0.78                 | 0.53               | 340.78              | 1.45                 | 4.91               |
| 340.26              | 0.80                 | 0.57               | 340.79              | 1.46                 | 5.04               |
| 340.27              | 0.81                 | 0.62               | 340.80              | 1.47                 | 5.18               |
| 340.28              | 0.83                 | 0.66               | 340.81              | 1.48                 | 5.31               |
| 340.29              | 0.84                 | 0.70               | 340.82              | 1.49                 | 5.45               |
| 340.30              | 0.86                 | 0.75               | 340.83              | 1.50                 | 5.59               |
| 340.31              | 0.88                 | 0.80               | 340.84              | 1.51                 | 5.73               |
| 340.32              | 0.89                 | 0.84               | 340.85              | 1.52                 | 5.88               |
| 340.33              | 0.91                 | 0.89               | 340.86              | 1.53                 | 6.03               |
| 340.34              | 0.92                 | 0.95               | 340.87              | 1.54                 | 6.18               |
| 340.35              | 0.94                 | 1.00               | 340.88              | 1.55                 | 6.33               |
| 340.36              | 0.95                 | 1.05               | 340.89              | 1.56                 | 6.48               |
| 340.37              | 0.96                 | 1.11               | 340.90              | 1.57                 | 6.64               |
| 340.38              | 0.98                 | 1.17               | 340.91              | 1.58                 | 6.80               |
| 340.39              | 0.99                 | 1.23               | 340.92              | 1.59                 | 6.96               |
| 340.40              | 1.01                 | 1.29               | 340.93              | 1.60                 | 7.12               |
| 340.41              | 1.02                 | 1.35               | 340.94              | 1.61                 | 7.29               |
| 340.42              | 1.03                 | 1.42               | 340.95              | 1.62                 | 7.45               |
| 340.43              | 1.05                 | 1.48               | 340.96              | 1.63                 | 7.62               |
| 340.44              | 1.06                 | 1.55               | 340.97              | 1.64                 | 7.79               |
| 340.45              | 1.07                 | 1.62               | 340.98              | 1.65                 | 7.97               |
| 340.46              | 1.09                 | 1.69               | 340.99              | 1.66                 | 8.14               |
| 340.47              | 1.10                 | 1.76               | 341.00              | <b>1.66</b>          | <b>8.32</b>        |
| 340.48              | 1.11                 | 1.84               |                     |                      |                    |
| 340.49              | 1.12                 | 1.91               |                     |                      |                    |
| 340.50              | 1.14                 | 1.99               |                     |                      |                    |
| 340.51              | 1.15                 | 2.07               |                     |                      |                    |
| 340.52              | 1.16                 | 2.15               |                     |                      |                    |



**Stage-Area-Storage for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 340.00              | 0.0                 | 0                       | 340.53              | 1.9                 | 1,081                   |
| 340.01              | 0.0                 | 12                      | 340.54              | 2.0                 | 1,110                   |
| 340.02              | 0.0                 | 23                      | 340.55              | 2.0                 | 1,140                   |
| 340.03              | 0.1                 | 36                      | 340.56              | 2.1                 | 1,171                   |
| 340.04              | 0.1                 | 48                      | 340.57              | 2.1                 | 1,201                   |
| 340.05              | 0.1                 | 61                      | 340.58              | 2.2                 | 1,232                   |
| 340.06              | 0.1                 | 74                      | 340.59              | 2.2                 | 1,263                   |
| 340.07              | 0.2                 | 88                      | 340.60              | 2.3                 | 1,295                   |
| 340.08              | 0.2                 | 102                     | 340.61              | 2.3                 | 1,327                   |
| 340.09              | 0.2                 | 116                     | 340.62              | 2.4                 | 1,359                   |
| 340.10              | 0.2                 | 131                     | 340.63              | 2.5                 | 1,392                   |
| 340.11              | 0.3                 | 146                     | 340.64              | 2.5                 | 1,425                   |
| 340.12              | 0.3                 | 161                     | 340.65              | 2.6                 | 1,458                   |
| 340.13              | 0.3                 | 176                     | 340.66              | 2.6                 | 1,492                   |
| 340.14              | 0.3                 | 192                     | 340.67              | 2.7                 | 1,526                   |
| 340.15              | 0.4                 | 209                     | 340.68              | 2.7                 | 1,560                   |
| 340.16              | 0.4                 | 225                     | 340.69              | 2.8                 | 1,595                   |
| 340.17              | 0.4                 | 242                     | 340.70              | 2.9                 | 1,630                   |
| 340.18              | 0.5                 | 260                     | 340.71              | 2.9                 | 1,666                   |
| 340.19              | 0.5                 | 277                     | 340.72              | 3.0                 | 1,701                   |
| 340.20              | 0.5                 | 295                     | 340.73              | 3.1                 | 1,737                   |
| 340.21              | 0.6                 | 314                     | 340.74              | 3.1                 | 1,774                   |
| 340.22              | 0.6                 | 332                     | 340.75              | 3.2                 | 1,811                   |
| 340.23              | 0.6                 | 351                     | 340.76              | 3.3                 | 1,848                   |
| 340.24              | 0.7                 | 371                     | 340.77              | 3.3                 | 1,885                   |
| 340.25              | 0.7                 | 391                     | 340.78              | 3.4                 | 1,923                   |
| 340.26              | 0.7                 | 411                     | 340.79              | 3.5                 | 1,961                   |
| 340.27              | 0.8                 | 431                     | 340.80              | 3.5                 | 1,999                   |
| 340.28              | 0.8                 | 452                     | 340.81              | 3.6                 | 2,038                   |
| 340.29              | 0.8                 | 473                     | 340.82              | 3.7                 | 2,077                   |
| 340.30              | 0.9                 | 494                     | 340.83              | 3.7                 | 2,117                   |
| 340.31              | 0.9                 | 516                     | 340.84              | 3.8                 | 2,157                   |
| 340.32              | 0.9                 | 538                     | 340.85              | 3.9                 | 2,197                   |
| 340.33              | 1.0                 | 560                     | 340.86              | 3.9                 | 2,237                   |
| 340.34              | 1.0                 | 583                     | 340.87              | 4.0                 | 2,278                   |
| 340.35              | 1.1                 | 606                     | 340.88              | 4.1                 | 2,319                   |
| 340.36              | 1.1                 | 630                     | 340.89              | 4.2                 | 2,361                   |
| 340.37              | 1.2                 | 654                     | 340.90              | 4.2                 | 2,403                   |
| 340.38              | 1.2                 | 678                     | 340.91              | 4.3                 | 2,445                   |
| 340.39              | 1.2                 | 702                     | 340.92              | 4.4                 | 2,487                   |
| 340.40              | 1.3                 | 727                     | 340.93              | 4.5                 | 2,530                   |
| 340.41              | 1.3                 | 752                     | 340.94              | 4.5                 | 2,573                   |
| 340.42              | 1.4                 | 778                     | 340.95              | 4.6                 | 2,617                   |
| 340.43              | 1.4                 | 804                     | 340.96              | 4.7                 | 2,661                   |
| 340.44              | 1.5                 | 830                     | 340.97              | 4.8                 | 2,705                   |
| 340.45              | 1.5                 | 856                     | 340.98              | 4.8                 | 2,750                   |
| 340.46              | 1.6                 | 883                     | 340.99              | 4.9                 | 2,795                   |
| 340.47              | 1.6                 | 910                     | 341.00              | <b>5.0</b>          | <b>2,840</b>            |
| 340.48              | 1.7                 | 938                     |                     |                     |                         |
| 340.49              | 1.7                 | 966                     |                     |                     |                         |
| 340.50              | 1.8                 | 994                     |                     |                     |                         |
| 340.51              | 1.8                 | 1,023                   |                     |                     |                         |
| 340.52              | 1.9                 | 1,051                   |                     |                     |                         |

**Summary for Reach R9: Proposed RRV Swale**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 2.96" for 25-yr event  
 Inflow = 5.82 cfs @ 12.01 hrs, Volume= 0.321 af  
 Outflow = 3.72 cfs @ 12.11 hrs, Volume= 0.321 af, Atten= 36%, Lag= 5.9 min  
 Routed to Pond 6P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.92 fps, Min. Travel Time= 13.9 min  
 Avg. Velocity = 0.20 fps, Avg. Travel Time= 63.9 min

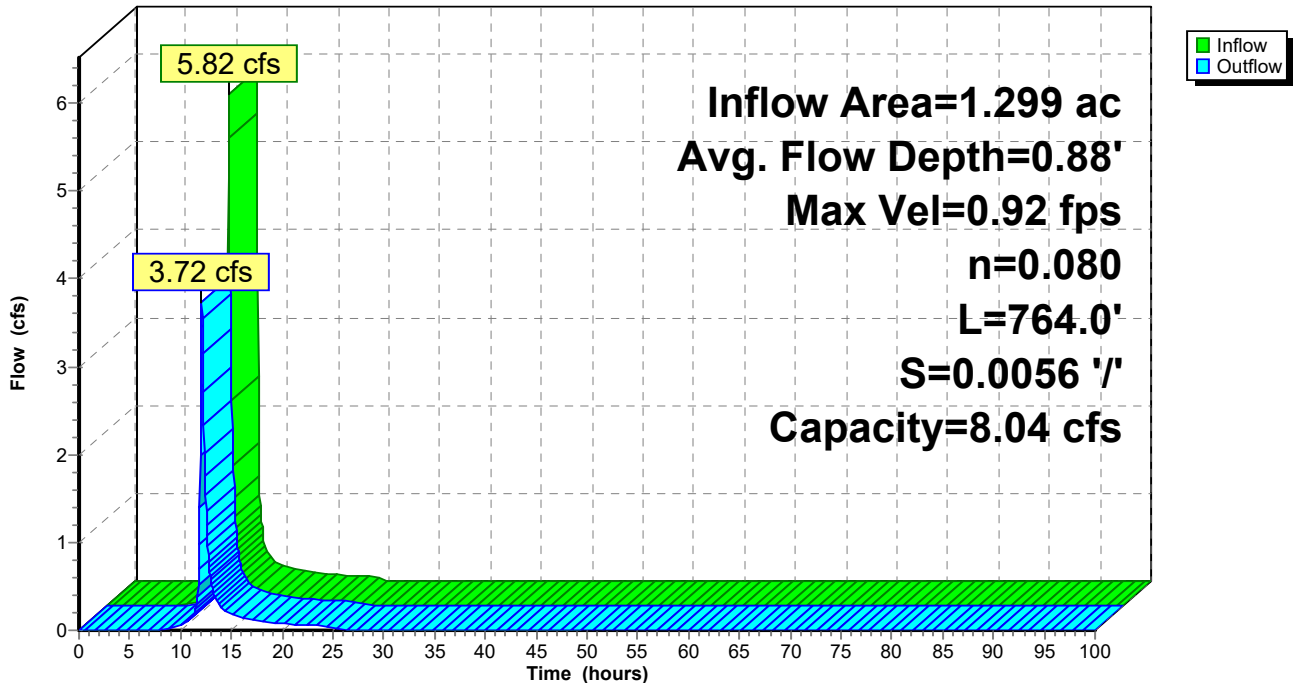
Peak Storage= 3,104 cf @ 12.11 hrs  
 Average Depth at Peak Storage= 0.88' , Surface Width= 7.26'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 8.04 cfs

2.00' x 1.25' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 9.50'  
 Length= 764.0' Slope= 0.0056 '/  
 Inlet Invert= 337.00', Outlet Invert= 332.75'

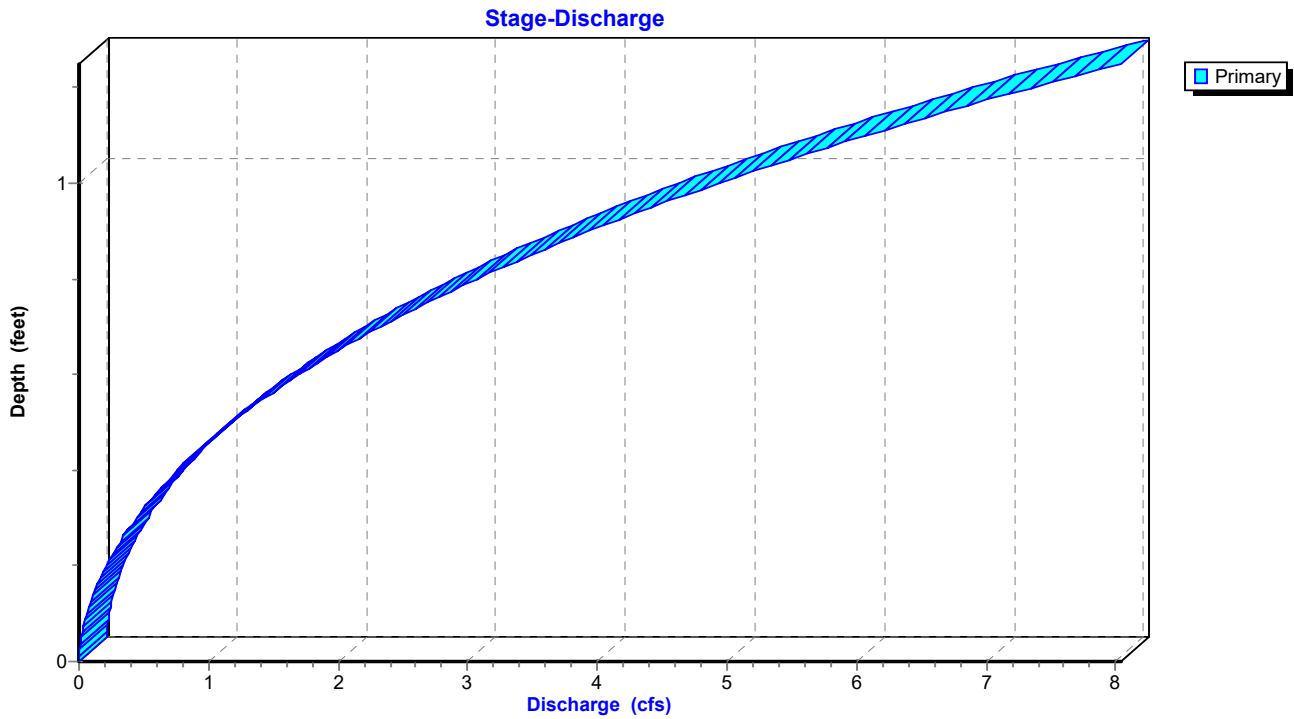


**Reach R9: Proposed RRV Swale**

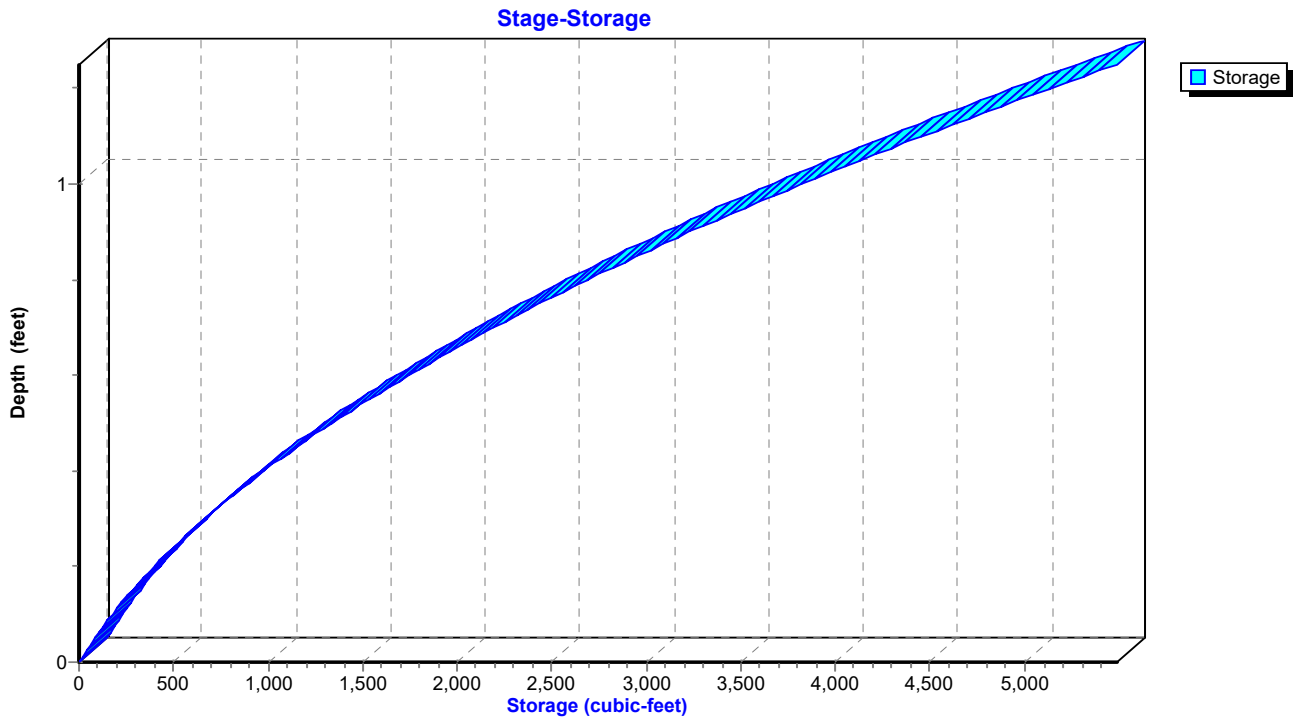
Hydrograph



**Reach R9: Proposed RRV Swale**



**Reach R9: Proposed RRV Swale**



**Hydrograph for Reach R9: Proposed RRV Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 337.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 337.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 337.00           | 0.00          |
| 7.50         | 0.02         | 35                   | 337.02           | 0.01          |
| 10.00        | <b>0.08</b>  | <b>172</b>           | <b>337.10</b>    | <b>0.06</b>   |
| 12.50        | <b>0.62</b>  | <b>1,474</b>         | <b>337.54</b>    | <b>1.35</b>   |
| 15.00        | 0.16         | 356                  | 337.18           | 0.18          |
| 17.50        | 0.11         | 257                  | 337.14           | 0.11          |
| 20.00        | 0.07         | 204                  | 337.11           | 0.08          |
| 22.50        | 0.06         | 181                  | 337.10           | 0.07          |
| 25.00        | 0.00         | 74                   | 337.05           | 0.02          |
| 27.50        | 0.00         | 20                   | 337.01           | 0.00          |
| 30.00        | 0.00         | 8                    | 337.01           | 0.00          |
| 32.50        | 0.00         | 3                    | 337.00           | 0.00          |
| 35.00        | 0.00         | 1                    | 337.00           | 0.00          |
| 37.50        | 0.00         | 1                    | 337.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 337.00           | 0.00          |

**Stage-Discharge for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.00              | 0.00                 | 0.00               | 337.53              | 0.70                 | 1.32               | 338.06              | 1.02                 | 5.60               |
| 337.01              | 0.06                 | 0.00               | 337.54              | 0.70                 | 1.37               | 338.07              | 1.02                 | 5.71               |
| 337.02              | 0.10                 | 0.00               | 337.55              | 0.71                 | 1.42               | 338.08              | 1.03                 | 5.83               |
| 337.03              | 0.13                 | 0.01               | 337.56              | 0.72                 | 1.48               | 338.09              | 1.04                 | 5.95               |
| 337.04              | 0.16                 | 0.01               | 337.57              | 0.72                 | 1.53               | 338.10              | 1.04                 | 6.07               |
| 337.05              | 0.18                 | 0.02               | 337.58              | 0.73                 | 1.58               | 338.11              | 1.05                 | 6.19               |
| 337.06              | 0.20                 | 0.03               | 337.59              | 0.74                 | 1.64               | 338.12              | 1.05                 | 6.31               |
| 337.07              | 0.22                 | 0.03               | 337.60              | 0.74                 | 1.70               | 338.13              | 1.06                 | 6.43               |
| 337.08              | 0.24                 | 0.04               | 337.61              | 0.75                 | 1.75               | 338.14              | 1.06                 | 6.56               |
| 337.09              | 0.26                 | 0.05               | 337.62              | 0.76                 | 1.81               | 338.15              | 1.07                 | 6.69               |
| 337.10              | 0.27                 | 0.06               | 337.63              | 0.76                 | 1.87               | 338.16              | 1.07                 | 6.82               |
| 337.11              | 0.29                 | 0.07               | 337.64              | 0.77                 | 1.93               | 338.17              | 1.08                 | 6.95               |
| 337.12              | 0.30                 | 0.09               | 337.65              | 0.78                 | 2.00               | 338.18              | 1.08                 | 7.08               |
| 337.13              | 0.32                 | 0.10               | 337.66              | 0.78                 | 2.06               | 338.19              | 1.09                 | 7.21               |
| 337.14              | 0.33                 | 0.11               | 337.67              | 0.79                 | 2.12               | 338.20              | 1.09                 | 7.35               |
| 337.15              | 0.35                 | 0.13               | 337.68              | 0.80                 | 2.19               | 338.21              | 1.10                 | 7.48               |
| 337.16              | 0.36                 | 0.14               | 337.69              | 0.80                 | 2.26               | 338.22              | 1.10                 | 7.62               |
| 337.17              | 0.37                 | 0.16               | 337.70              | 0.81                 | 2.32               | 338.23              | 1.11                 | 7.76               |
| 337.18              | 0.38                 | 0.18               | 337.71              | 0.82                 | 2.39               | 338.24              | 1.11                 | 7.90               |
| 337.19              | 0.40                 | 0.19               | 337.72              | 0.82                 | 2.46               | 338.25              | <b>1.12</b>          | <b>8.04</b>        |
| 337.20              | 0.41                 | 0.21               | 337.73              | 0.83                 | 2.53               |                     |                      |                    |
| 337.21              | 0.42                 | 0.23               | 337.74              | 0.83                 | 2.61               |                     |                      |                    |
| 337.22              | 0.43                 | 0.25               | 337.75              | 0.84                 | 2.68               |                     |                      |                    |
| 337.23              | 0.44                 | 0.27               | 337.76              | 0.85                 | 2.75               |                     |                      |                    |
| 337.24              | 0.45                 | 0.29               | 337.77              | 0.85                 | 2.83               |                     |                      |                    |
| 337.25              | 0.46                 | 0.32               | 337.78              | 0.86                 | 2.91               |                     |                      |                    |
| 337.26              | 0.47                 | 0.34               | 337.79              | 0.87                 | 2.99               |                     |                      |                    |
| 337.27              | 0.48                 | 0.37               | 337.80              | 0.87                 | 3.07               |                     |                      |                    |
| 337.28              | 0.49                 | 0.39               | 337.81              | 0.88                 | 3.15               |                     |                      |                    |
| 337.29              | 0.50                 | 0.42               | 337.82              | 0.88                 | 3.23               |                     |                      |                    |
| 337.30              | 0.51                 | 0.44               | 337.83              | 0.89                 | 3.31               |                     |                      |                    |
| 337.31              | 0.52                 | 0.47               | 337.84              | 0.89                 | 3.40               |                     |                      |                    |
| 337.32              | 0.53                 | 0.50               | 337.85              | 0.90                 | 3.48               |                     |                      |                    |
| 337.33              | 0.54                 | 0.53               | 337.86              | 0.91                 | 3.57               |                     |                      |                    |
| 337.34              | 0.55                 | 0.56               | 337.87              | 0.91                 | 3.66               |                     |                      |                    |
| 337.35              | 0.55                 | 0.59               | 337.88              | 0.92                 | 3.75               |                     |                      |                    |
| 337.36              | 0.56                 | 0.62               | 337.89              | 0.92                 | 3.84               |                     |                      |                    |
| 337.37              | 0.57                 | 0.66               | 337.90              | 0.93                 | 3.93               |                     |                      |                    |
| 337.38              | 0.58                 | 0.69               | 337.91              | 0.94                 | 4.03               |                     |                      |                    |
| 337.39              | 0.59                 | 0.73               | 337.92              | 0.94                 | 4.12               |                     |                      |                    |
| 337.40              | 0.60                 | 0.76               | 337.93              | 0.95                 | 4.22               |                     |                      |                    |
| 337.41              | 0.60                 | 0.80               | 337.94              | 0.95                 | 4.32               |                     |                      |                    |
| 337.42              | 0.61                 | 0.84               | 337.95              | 0.96                 | 4.42               |                     |                      |                    |
| 337.43              | 0.62                 | 0.88               | 337.96              | 0.96                 | 4.52               |                     |                      |                    |
| 337.44              | 0.63                 | 0.92               | 337.97              | 0.97                 | 4.62               |                     |                      |                    |
| 337.45              | 0.64                 | 0.96               | 337.98              | 0.98                 | 4.72               |                     |                      |                    |
| 337.46              | 0.64                 | 1.00               | 337.99              | 0.98                 | 4.83               |                     |                      |                    |
| 337.47              | 0.65                 | 1.04               | 338.00              | 0.99                 | 4.93               |                     |                      |                    |
| 337.48              | 0.66                 | 1.09               | 338.01              | 0.99                 | 5.04               |                     |                      |                    |
| 337.49              | 0.67                 | 1.13               | 338.02              | 1.00                 | 5.15               |                     |                      |                    |
| 337.50              | 0.67                 | 1.18               | 338.03              | 1.00                 | 5.26               |                     |                      |                    |
| 337.51              | 0.68                 | 1.23               | 338.04              | 1.01                 | 5.37               |                     |                      |                    |
| 337.52              | 0.69                 | 1.27               | 338.05              | 1.01                 | 5.48               |                     |                      |                    |

**Stage-Area-Storage for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.00              | 0.0                 | 0                       | 338.06              | 5.5                 | 4,195                   |
| 337.02              | 0.0                 | 32                      | 338.08              | 5.7                 | 4,324                   |
| 337.04              | 0.1                 | 65                      | 338.10              | 5.8                 | 4,454                   |
| 337.06              | 0.1                 | 100                     | 338.12              | 6.0                 | 4,587                   |
| 337.08              | 0.2                 | 137                     | 338.14              | 6.2                 | 4,721                   |
| 337.10              | 0.2                 | 176                     | 338.16              | 6.4                 | 4,857                   |
| 337.12              | 0.3                 | 216                     | 338.18              | 6.5                 | 4,995                   |
| 337.14              | 0.3                 | 259                     | 338.20              | 6.7                 | 5,134                   |
| 337.16              | 0.4                 | 303                     | 338.22              | 6.9                 | 5,276                   |
| 337.18              | 0.5                 | 349                     | 338.24              | <b>7.1</b>          | <b>5,419</b>            |
| 337.20              | 0.5                 | 397                     |                     |                     |                         |
| 337.22              | 0.6                 | 447                     |                     |                     |                         |
| 337.24              | 0.7                 | 499                     |                     |                     |                         |
| 337.26              | 0.7                 | 552                     |                     |                     |                         |
| 337.28              | 0.8                 | 608                     |                     |                     |                         |
| 337.30              | 0.9                 | 665                     |                     |                     |                         |
| 337.32              | 0.9                 | 724                     |                     |                     |                         |
| 337.34              | 1.0                 | 785                     |                     |                     |                         |
| 337.36              | 1.1                 | 847                     |                     |                     |                         |
| 337.38              | 1.2                 | 912                     |                     |                     |                         |
| 337.40              | 1.3                 | 978                     |                     |                     |                         |
| 337.42              | 1.4                 | 1,046                   |                     |                     |                         |
| 337.44              | 1.5                 | 1,116                   |                     |                     |                         |
| 337.46              | 1.6                 | 1,188                   |                     |                     |                         |
| 337.48              | 1.7                 | 1,262                   |                     |                     |                         |
| 337.50              | 1.8                 | 1,337                   |                     |                     |                         |
| 337.52              | 1.9                 | 1,414                   |                     |                     |                         |
| 337.54              | 2.0                 | 1,494                   |                     |                     |                         |
| 337.56              | 2.1                 | 1,575                   |                     |                     |                         |
| 337.58              | 2.2                 | 1,657                   |                     |                     |                         |
| 337.60              | 2.3                 | 1,742                   |                     |                     |                         |
| 337.62              | 2.4                 | 1,828                   |                     |                     |                         |
| 337.64              | 2.5                 | 1,917                   |                     |                     |                         |
| 337.66              | 2.6                 | 2,007                   |                     |                     |                         |
| 337.68              | 2.7                 | 2,099                   |                     |                     |                         |
| 337.70              | 2.9                 | 2,193                   |                     |                     |                         |
| 337.72              | 3.0                 | 2,288                   |                     |                     |                         |
| 337.74              | 3.1                 | 2,386                   |                     |                     |                         |
| 337.76              | 3.3                 | 2,485                   |                     |                     |                         |
| 337.78              | 3.4                 | 2,586                   |                     |                     |                         |
| 337.80              | 3.5                 | 2,689                   |                     |                     |                         |
| 337.82              | 3.7                 | 2,794                   |                     |                     |                         |
| 337.84              | 3.8                 | 2,901                   |                     |                     |                         |
| 337.86              | 3.9                 | 3,009                   |                     |                     |                         |
| 337.88              | 4.1                 | 3,120                   |                     |                     |                         |
| 337.90              | 4.2                 | 3,232                   |                     |                     |                         |
| 337.92              | 4.4                 | 3,346                   |                     |                     |                         |
| 337.94              | 4.5                 | 3,462                   |                     |                     |                         |
| 337.96              | 4.7                 | 3,579                   |                     |                     |                         |
| 337.98              | 4.8                 | 3,699                   |                     |                     |                         |
| 338.00              | 5.0                 | 3,820                   |                     |                     |                         |
| 338.02              | 5.2                 | 3,943                   |                     |                     |                         |
| 338.04              | 5.3                 | 4,068                   |                     |                     |                         |

**Summary for Pond 4P: Proposed Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.67" for 25-yr event  
 Inflow = 3.22 cfs @ 12.49 hrs, Volume= 0.567 af  
 Outflow = 2.68 cfs @ 12.72 hrs, Volume= 0.567 af, Atten= 17%, Lag= 13.8 min  
 Primary = 1.07 cfs @ 12.72 hrs, Volume= 0.503 af  
 Routed to Reach R12 : 12" Culvert Pond Discharge  
 Secondary = 1.62 cfs @ 12.72 hrs, Volume= 0.063 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.00' Surf.Area= 1,864 sf Storage= 1,362 cf  
 Peak Elev= 338.58' @ 12.72 hrs Surf.Area= 7,298 sf Storage= 5,697 cf (4,335 cf above start)

Plug-Flow detention time= 189.2 min calculated for 0.535 af (94% of inflow)  
 Center-of-Mass det. time= 142.3 min ( 1,087.0 - 944.7 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 338.50' | 5,344 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 335.00' | 3,537 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 334.50' | 1,862 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 10,742 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 338.50           | 3,608             | 353.0         | 0                      | 0                      | 3,608            |
| 339.00           | 4,127             | 266.0         | 1,932                  | 1,932                  | 7,896            |
| 339.75           | 4,983             | 287.0         | 3,411                  | 5,344                  | 8,843            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 335.00           | 29                | 23.0          | 0                      | 0                      | 29               |
| 336.00           | 189               | 66.0          | 97                     | 97                     | 337              |
| 337.00           | 1,332             | 155.0         | 674                    | 772                    | 1,906            |
| 338.00           | 2,017             | 182.0         | 1,663                  | 2,434                  | 2,649            |
| 338.50           | 2,399             | 200.0         | 1,103                  | 3,537                  | 3,205            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 334.50           | 3                 | 7.6           | 0                      | 0                      | 3                |
| 335.00           | 83                | 48.0          | 17                     | 17                     | 182              |
| 336.00           | 282               | 74.0          | 173                    | 190                    | 442              |
| 337.00           | 532               | 93.0          | 400                    | 590                    | 708              |
| 338.00           | 953               | 118.0         | 732                    | 1,322                  | 1,141            |
| 338.50           | 1,209             | 136.0         | 539                    | 1,862                  | 1,510            |

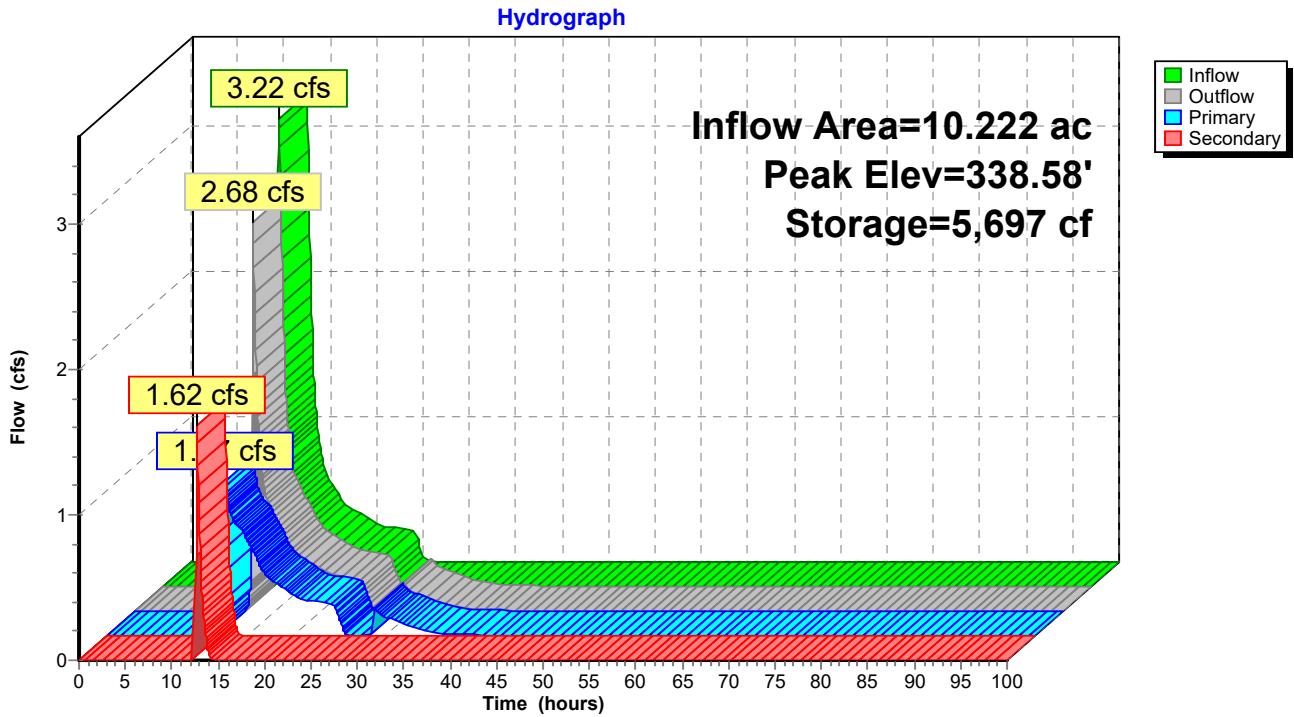
| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 338.50' | <b>26.0' long x 17.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2     | Primary   | 338.50' | <b>12.0" Horiz. Orifice/Grate</b> C= 0.600   |

|    |         |         |                                   |          |                                   |
|----|---------|---------|-----------------------------------|----------|-----------------------------------|
|    |         |         | Limited to weir flow at low heads |          |                                   |
| #3 | Primary | 337.86' | <b>6.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |
| #4 | Primary | 337.00' | <b>3.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |

**Primary OutFlow** Max=1.05 cfs @ 12.72 hrs HW=338.58' TW=338.01' (Dynamic Tailwater)  
 ↳ **2=Orifice/Grate** (Weir Controls 0.22 cfs @ 0.91 fps)  
 ↳ **3=Orifice/Grate** (Orifice Controls 0.65 cfs @ 3.29 fps)  
 ↳ **4=Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.63 fps)

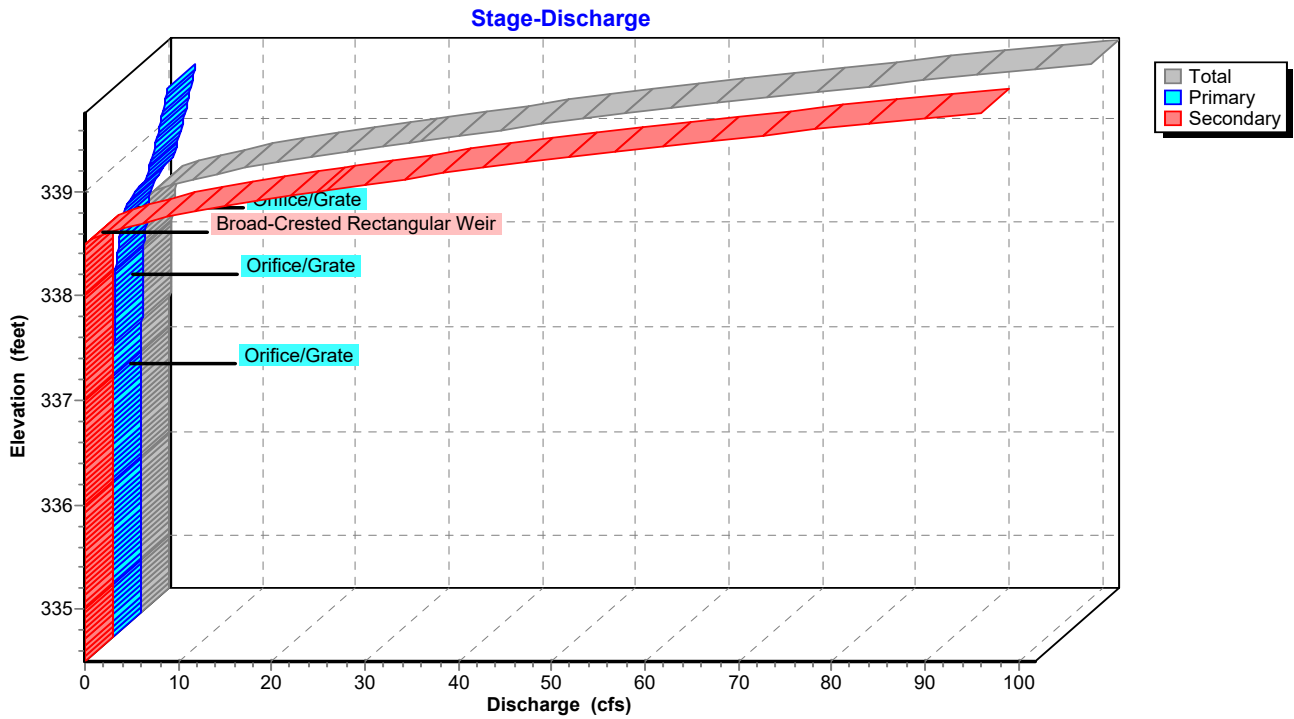
**Secondary OutFlow** Max=1.51 cfs @ 12.72 hrs HW=338.58' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.51 cfs @ 0.75 fps)

**Pond 4P: Proposed Stormwater Pond**

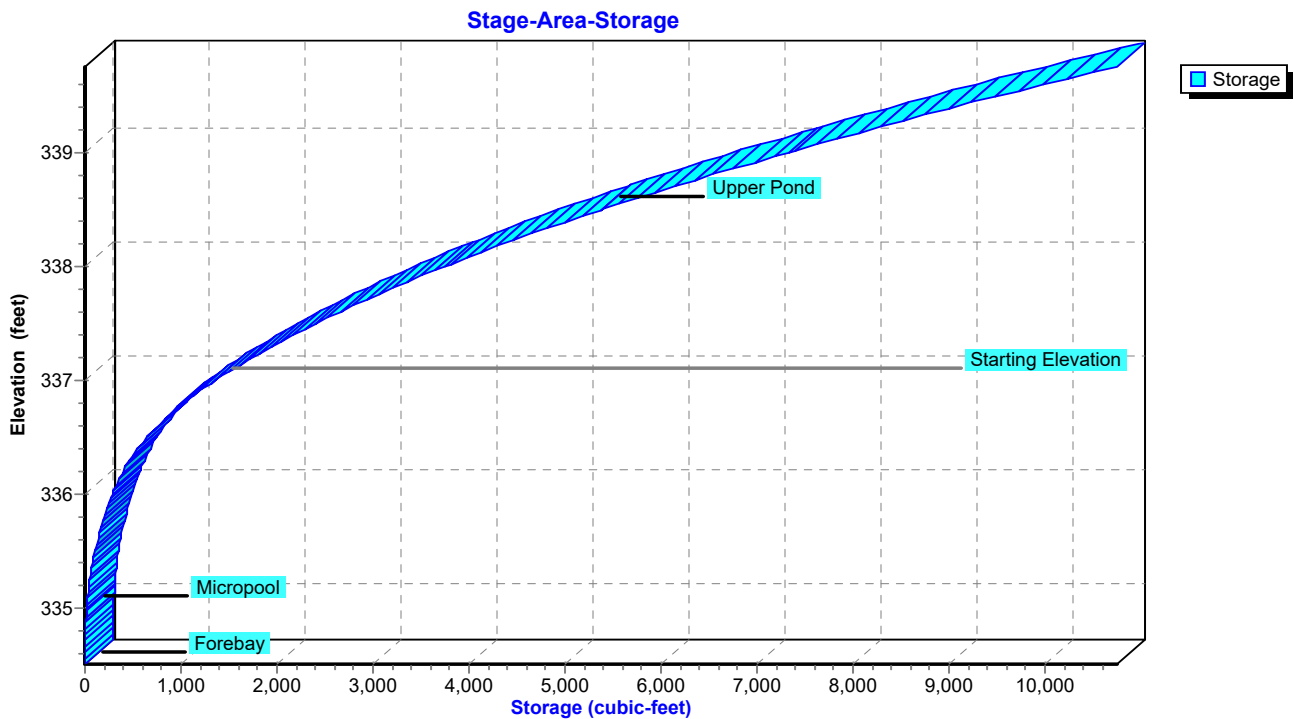




### Pond 4P: Proposed Stormwater Pond



### Pond 4P: Proposed Stormwater Pond



**Hydrograph for Pond 4P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 2.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 10.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>3.22</b>  | <b>4,334</b>         | <b>338.19</b>    | <b>0.43</b>   | <b>0.43</b>   | <b>0.00</b>     |
| 15.00        | 0.55         | <b>5,093</b>         | <b>338.41</b>    | <b>0.67</b>   | <b>0.67</b>   | <b>0.00</b>     |
| 17.50        | 0.37         | 4,398                | 338.21           | 0.40          | 0.40          | 0.00            |
| 20.00        | 0.27         | 4,199                | 338.14           | 0.29          | 0.29          | 0.00            |
| 22.50        | 0.23         | 4,110                | 338.12           | 0.24          | 0.24          | 0.00            |
| 25.00        | 0.03         | 3,915                | 338.05           | 0.12          | 0.12          | 0.00            |
| 27.50        | 0.00         | 3,786                | 338.01           | 0.00          | 0.00          | 0.00            |
| 30.00        | 0.00         | 3,103                | 337.77           | 0.13          | 0.13          | 0.00            |
| 32.50        | 0.00         | 2,205                | 337.41           | 0.07          | 0.07          | 0.00            |
| 35.00        | 0.00         | 1,796                | 337.22           | 0.03          | 0.03          | 0.00            |
| 37.50        | 0.00         | 1,634                | 337.14           | 0.01          | 0.01          | 0.00            |
| 40.00        | 0.00         | 1,558                | 337.10           | 0.01          | 0.01          | 0.00            |
| 42.50        | 0.00         | 1,518                | 337.08           | 0.00          | 0.00          | 0.00            |
| 45.00        | 0.00         | 1,493                | 337.07           | 0.00          | 0.00          | 0.00            |
| 47.50        | 0.00         | 1,475                | 337.06           | 0.00          | 0.00          | 0.00            |
| 50.00        | 0.00         | 1,463                | 337.05           | 0.00          | 0.00          | 0.00            |
| 52.50        | 0.00         | 1,453                | 337.05           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,446                | 337.04           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,440                | 337.04           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,435                | 337.04           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,431                | 337.04           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,427                | 337.03           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,424                | 337.03           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,421                | 337.03           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,419                | 337.03           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,417                | 337.03           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,415                | 337.03           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,414                | 337.03           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,412                | 337.03           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,410                | 337.03           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,409                | 337.03           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,408                | 337.02           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,407                | 337.02           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,406                | 337.02           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,405                | 337.02           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,404                | 337.02           | 0.00          | 0.00          | 0.00            |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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**Stage-Discharge for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 334.50              | 0.00               | 0.00             | 0.00               | 337.15              | 0.04               | 0.04             | 0.00               |
| 334.55              | 0.00               | 0.00             | 0.00               | 337.20              | 0.06               | 0.06             | 0.00               |
| 334.60              | 0.00               | 0.00             | 0.00               | 337.25              | 0.08               | 0.08             | 0.00               |
| 334.65              | 0.00               | 0.00             | 0.00               | 337.30              | 0.10               | 0.10             | 0.00               |
| 334.70              | 0.00               | 0.00             | 0.00               | 337.35              | 0.11               | 0.11             | 0.00               |
| 334.75              | 0.00               | 0.00             | 0.00               | 337.40              | 0.12               | 0.12             | 0.00               |
| 334.80              | 0.00               | 0.00             | 0.00               | 337.45              | 0.13               | 0.13             | 0.00               |
| 334.85              | 0.00               | 0.00             | 0.00               | 337.50              | 0.14               | 0.14             | 0.00               |
| 334.90              | 0.00               | 0.00             | 0.00               | 337.55              | 0.15               | 0.15             | 0.00               |
| 334.95              | 0.00               | 0.00             | 0.00               | 337.60              | 0.16               | 0.16             | 0.00               |
| 335.00              | 0.00               | 0.00             | 0.00               | 337.65              | 0.17               | 0.17             | 0.00               |
| 335.05              | 0.00               | 0.00             | 0.00               | 337.70              | 0.18               | 0.18             | 0.00               |
| 335.10              | 0.00               | 0.00             | 0.00               | 337.75              | 0.19               | 0.19             | 0.00               |
| 335.15              | 0.00               | 0.00             | 0.00               | 337.80              | 0.19               | 0.19             | 0.00               |
| 335.20              | 0.00               | 0.00             | 0.00               | 337.85              | 0.20               | 0.20             | 0.00               |
| 335.25              | 0.00               | 0.00             | 0.00               | 337.90              | 0.21               | 0.21             | 0.00               |
| 335.30              | 0.00               | 0.00             | 0.00               | 337.95              | 0.24               | 0.24             | 0.00               |
| 335.35              | 0.00               | 0.00             | 0.00               | 338.00              | 0.28               | 0.28             | 0.00               |
| 335.40              | 0.00               | 0.00             | 0.00               | 338.05              | 0.33               | 0.33             | 0.00               |
| 335.45              | 0.00               | 0.00             | 0.00               | 338.10              | 0.39               | 0.39             | 0.00               |
| 335.50              | 0.00               | 0.00             | 0.00               | 338.15              | 0.46               | 0.46             | 0.00               |
| 335.55              | 0.00               | 0.00             | 0.00               | 338.20              | 0.53               | 0.53             | 0.00               |
| 335.60              | 0.00               | 0.00             | 0.00               | 338.25              | 0.60               | 0.60             | 0.00               |
| 335.65              | 0.00               | 0.00             | 0.00               | 338.30              | 0.67               | 0.67             | 0.00               |
| 335.70              | 0.00               | 0.00             | 0.00               | 338.35              | 0.73               | 0.73             | 0.00               |
| 335.75              | 0.00               | 0.00             | 0.00               | 338.40              | 0.78               | 0.78             | 0.00               |
| 335.80              | 0.00               | 0.00             | 0.00               | 338.45              | 0.82               | 0.82             | 0.00               |
| 335.85              | 0.00               | 0.00             | 0.00               | 338.50              | 0.87               | 0.87             | 0.00               |
| 335.90              | 0.00               | 0.00             | 0.00               | 338.55              | 1.80               | 1.02             | 0.78               |
| 335.95              | 0.00               | 0.00             | 0.00               | 338.60              | 3.48               | 1.27             | 2.20               |
| 336.00              | 0.00               | 0.00             | 0.00               | 338.65              | 5.63               | 1.58             | 4.05               |
| 336.05              | 0.00               | 0.00             | 0.00               | 338.70              | 8.17               | 1.94             | 6.23               |
| 336.10              | 0.00               | 0.00             | 0.00               | 338.75              | 11.07              | 2.34             | 8.73               |
| 336.15              | 0.00               | 0.00             | 0.00               | 338.80              | 14.27              | 2.78             | 11.49              |
| 336.20              | 0.00               | 0.00             | 0.00               | 338.85              | 17.76              | 3.25             | 14.51              |
| 336.25              | 0.00               | 0.00             | 0.00               | 338.90              | 21.31              | 3.55             | 17.76              |
| 336.30              | 0.00               | 0.00             | 0.00               | 338.95              | 24.91              | 3.72             | 21.19              |
| 336.35              | 0.00               | 0.00             | 0.00               | 339.00              | 28.71              | 3.89             | 24.82              |
| 336.40              | 0.00               | 0.00             | 0.00               | 339.05              | 32.68              | 4.05             | 28.63              |
| 336.45              | 0.00               | 0.00             | 0.00               | 339.10              | 36.83              | 4.20             | 32.63              |
| 336.50              | 0.00               | 0.00             | 0.00               | 339.15              | 40.93              | 4.35             | 36.58              |
| 336.55              | 0.00               | 0.00             | 0.00               | 339.20              | 45.15              | 4.49             | 40.66              |
| 336.60              | 0.00               | 0.00             | 0.00               | 339.25              | 49.47              | 4.63             | 44.84              |
| 336.65              | 0.00               | 0.00             | 0.00               | 339.30              | 53.88              | 4.76             | 49.11              |
| 336.70              | 0.00               | 0.00             | 0.00               | 339.35              | 58.63              | 4.89             | 53.74              |
| 336.75              | 0.00               | 0.00             | 0.00               | 339.40              | 63.51              | 5.02             | 58.49              |
| 336.80              | 0.00               | 0.00             | 0.00               | 339.45              | 68.52              | 5.14             | 63.38              |
| 336.85              | 0.00               | 0.00             | 0.00               | 339.50              | 73.64              | 5.26             | 68.38              |
| 336.90              | 0.00               | 0.00             | 0.00               | 339.55              | 79.02              | 5.38             | 73.64              |
| 336.95              | 0.00               | 0.00             | 0.00               | 339.60              | 84.53              | 5.49             | 79.04              |
| 337.00              | 0.00               | 0.00             | 0.00               | 339.65              | 90.17              | 5.60             | 84.57              |
| 337.05              | 0.01               | 0.01             | 0.00               | 339.70              | 95.94              | 5.71             | 90.23              |
| 337.10              | 0.02               | 0.02             | 0.00               | 339.75              | <b>101.75</b>      | <b>5.82</b>      | <b>95.93</b>       |

**Stage-Area-Storage for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 334.50              | 0                       | 337.15              | 1,652                   |
| 334.55              | 0                       | 337.20              | 1,754                   |
| 334.60              | 1                       | 337.25              | 1,859                   |
| 334.65              | 1                       | 337.30              | 1,966                   |
| 334.70              | 2                       | 337.35              | 2,076                   |
| 334.75              | 3                       | 337.40              | 2,188                   |
| 334.80              | 5                       | 337.45              | 2,303                   |
| 334.85              | 7                       | 337.50              | 2,421                   |
| 334.90              | 10                      | 337.55              | 2,542                   |
| 334.95              | 13                      | 337.60              | 2,665                   |
| 335.00              | 17                      | 337.65              | 2,791                   |
| 335.05              | 23                      | 337.70              | 2,920                   |
| 335.10              | 29                      | 337.75              | 3,052                   |
| 335.15              | 36                      | 337.80              | 3,187                   |
| 335.20              | 44                      | 337.85              | 3,325                   |
| 335.25              | 53                      | 337.90              | 3,466                   |
| 335.30              | 62                      | 337.95              | 3,610                   |
| 335.35              | 72                      | 338.00              | 3,757                   |
| 335.40              | 83                      | 338.05              | 3,907                   |
| 335.45              | 95                      | 338.10              | 4,060                   |
| 335.50              | 107                     | 338.15              | 4,216                   |
| 335.55              | 121                     | 338.20              | 4,375                   |
| 335.60              | 135                     | 338.25              | 4,538                   |
| 335.65              | 150                     | 338.30              | 4,703                   |
| 335.70              | 166                     | 338.35              | 4,872                   |
| 335.75              | 184                     | 338.40              | 5,044                   |
| 335.80              | 202                     | 338.45              | 5,220                   |
| 335.85              | 222                     | 338.50              | 5,399                   |
| 335.90              | 242                     | 338.55              | 5,580                   |
| 335.95              | 264                     | 338.60              | 5,764                   |
| 336.00              | 287                     | 338.65              | 5,951                   |
| 336.05              | 312                     | 338.70              | 6,140                   |
| 336.10              | 338                     | 338.75              | 6,332                   |
| 336.15              | 368                     | 338.80              | 6,527                   |
| 336.20              | 399                     | 338.85              | 6,724                   |
| 336.25              | 434                     | 338.90              | 6,923                   |
| 336.30              | 471                     | 338.95              | 7,126                   |
| 336.35              | 511                     | 339.00              | 7,331                   |
| 336.40              | 554                     | 339.05              | 7,539                   |
| 336.45              | 600                     | 339.10              | 7,749                   |
| 336.50              | 650                     | 339.15              | 7,962                   |
| 336.55              | 703                     | 339.20              | 8,178                   |
| 336.60              | 760                     | 339.25              | 8,397                   |
| 336.65              | 821                     | 339.30              | 8,619                   |
| 336.70              | 885                     | 339.35              | 8,843                   |
| 336.75              | 954                     | 339.40              | 9,070                   |
| 336.80              | 1,026                   | 339.45              | 9,300                   |
| 336.85              | 1,103                   | 339.50              | 9,533                   |
| 336.90              | 1,185                   | 339.55              | 9,769                   |
| 336.95              | 1,271                   | 339.60              | 10,008                  |
| 337.00              | 1,362                   | 339.65              | 10,250                  |
| 337.05              | 1,456                   | 339.70              | 10,494                  |
| 337.10              | 1,553                   | 339.75              | <b>10,742</b>           |

**Summary for Pond 5P: Proposed Infiltration Basin**

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=3)

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 2.32" for 25-yr event  
 Inflow = 18.55 cfs @ 12.13 hrs, Volume= 1.469 af  
 Outflow = 10.62 cfs @ 12.31 hrs, Volume= 1.469 af, Atten= 43%, Lag= 10.7 min  
 Discarded = 10.62 cfs @ 12.31 hrs, Volume= 1.469 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Primary area = Inflow area x 0.000  
 Peak Elev= 329.16' @ 12.31 hrs Surf.Area= 4,589 sf Storage= 9,999 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 6.1 min ( 843.1 - 837.0 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 330.50' | 10,455 cf     | <b>Upper Pond (Irregular)</b> Listed below (Recalc) -Impervious |
| #2     | 325.50' | 11,031 cf     | <b>Micropool (Irregular)</b> Listed below (Recalc)              |
| #3     | 325.50' | 6,296 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)                |
|        |         | 27,781 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 330.50           | 6,557             | 358.9         | 0                      | 0                      | 6,557            |
| 331.00           | 7,966             | 544.5         | 3,625                  | 3,625                  | 19,902           |
| 331.75           | 10,297            | 768.6         | 6,830                  | 10,455                 | 43,324           |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 906               | 129.8         | 0                      | 0                      | 906              |
| 326.00           | 1,122             | 143.2         | 506                    | 506                    | 1,205            |
| 327.00           | 1,594             | 165.7         | 1,351                  | 1,857                  | 1,779            |
| 328.00           | 2,135             | 187.0         | 1,858                  | 3,715                  | 2,403            |
| 329.00           | 2,732             | 208.0         | 2,427                  | 6,142                  | 3,092            |
| 330.00           | 3,382             | 226.7         | 3,051                  | 9,194                  | 3,774            |
| 330.50           | 3,974             | 250.8         | 1,837                  | 11,031                 | 4,697            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 295               | 81.6          | 0                      | 0                      | 295              |
| 326.00           | 426               | 92.6          | 179                    | 179                    | 454              |
| 327.00           | 755               | 119.2         | 583                    | 762                    | 914              |
| 328.00           | 1,185             | 151.4         | 962                    | 1,724                  | 1,621            |
| 329.00           | 1,678             | 173.2         | 1,424                  | 3,148                  | 2,207            |
| 330.00           | 2,227             | 192.4         | 1,946                  | 5,094                  | 2,794            |
| 330.50           | 2,583             | 209.3         | 1,201                  | 6,296                  | 3,344            |

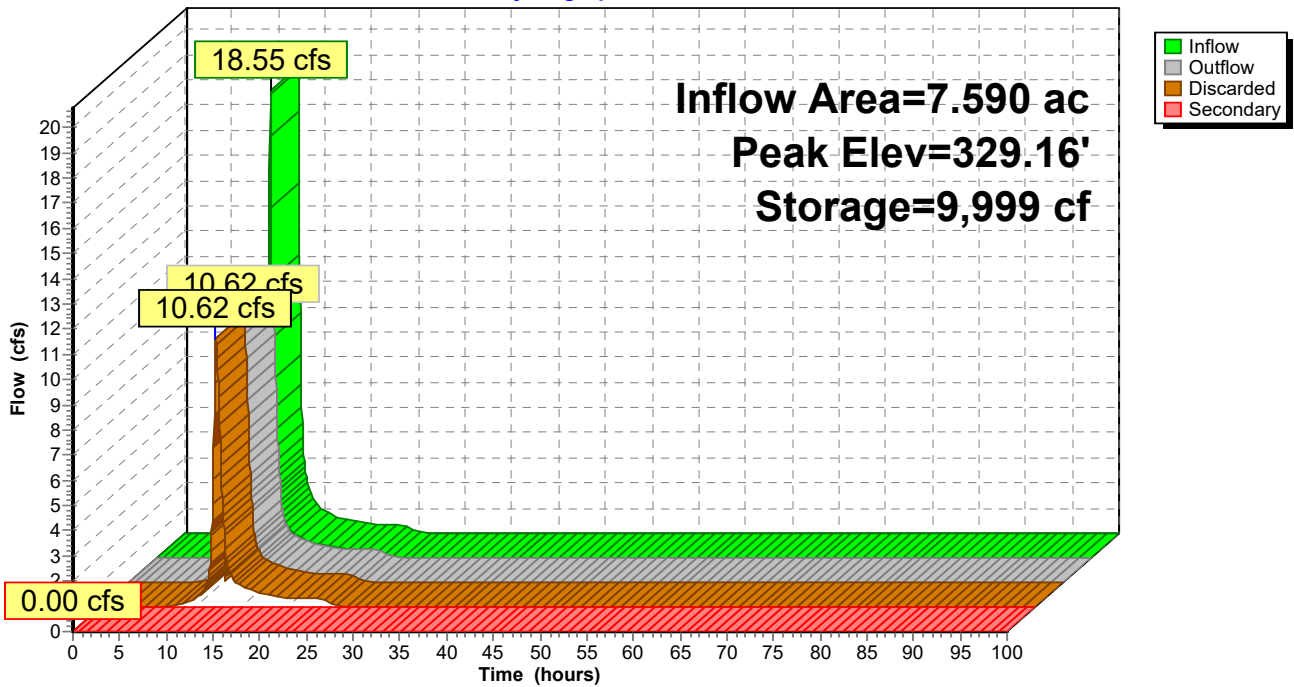
| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 331.25' | <b>10.0' long x 13.2' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.61 2.65 2.70 2.66 2.65 2.66 2.65 2.63 |
| #2     | Discarded | 325.50' | <b>100.000 in/hr Exfiltration over Horizontal area</b> Phase-In= 0.03'   |

**Discarded OutFlow** Max=10.60 cfs @ 12.31 hrs HW=329.15' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 10.60 cfs)

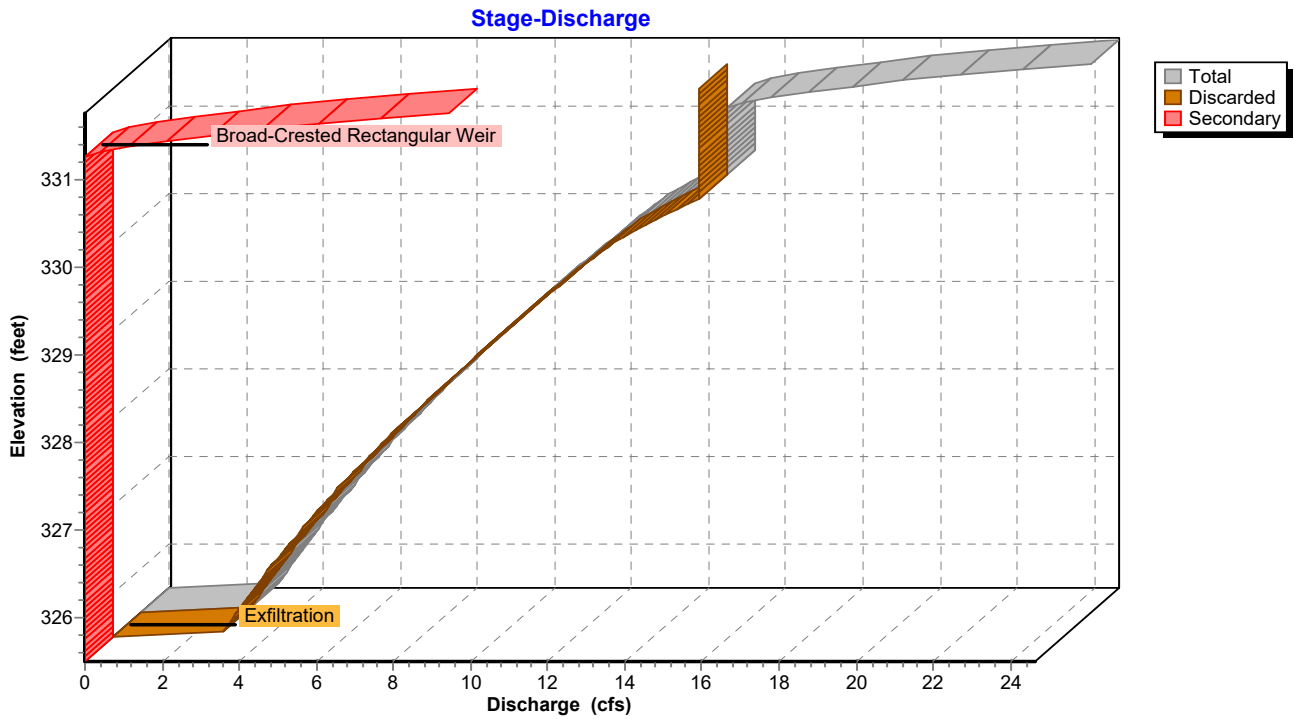
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=325.50' TW=0.00' (Dynamic Tailwater)  
 ↳1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond 5P: Proposed Infiltration Basin**

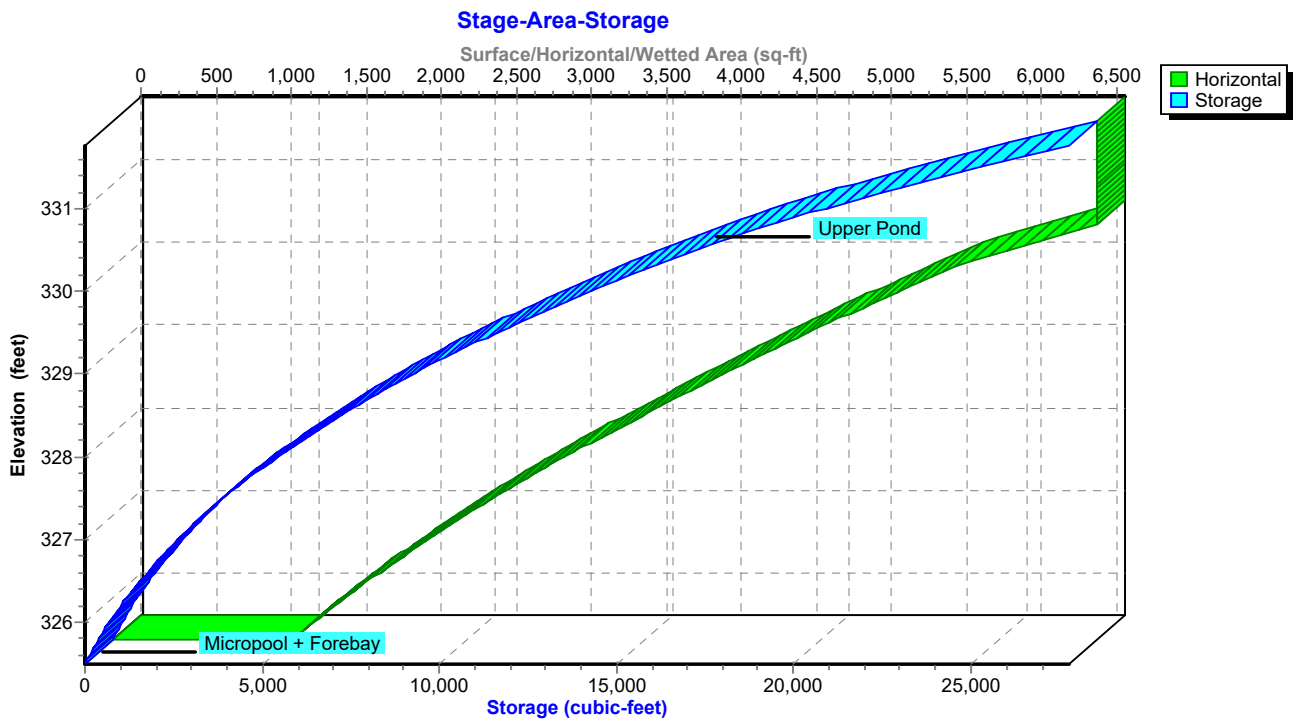
Hydrograph



### Pond 5P: Proposed Infiltration Basin



### Pond 5P: Proposed Infiltration Basin



**Hydrograph for Pond 5P: Proposed Infiltration Basin**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|-----------------|-----------------|
| 0.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | <b>0.00</b>     |
| 2.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 5.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 7.50         | 0.05         | 1                    | 325.50           | 0.05          | 0.05            | 0.00            |
| 10.00        | <b>0.30</b>  | <b>4</b>             | <b>325.50</b>    | <b>0.30</b>   | <b>0.30</b>     | 0.00            |
| 12.50        | <b>5.01</b>  | <b>8,013</b>         | <b>328.70</b>    | <b>9.41</b>   | <b>9.41</b>     | 0.00            |
| 15.00        | 0.86         | 11                   | 325.51           | 0.87          | 0.87            | 0.00            |
| 17.50        | 0.54         | 7                    | 325.51           | 0.54          | 0.54            | 0.00            |
| 20.00        | 0.38         | 5                    | 325.50           | 0.38          | 0.38            | 0.00            |
| 22.50        | 0.32         | 4                    | 325.50           | 0.32          | 0.32            | 0.00            |
| 25.00        | 0.04         | 1                    | 325.50           | 0.04          | 0.04            | 0.00            |
| 27.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 30.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 32.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 35.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 37.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 40.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 42.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 45.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 47.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 50.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 52.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 55.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 57.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 60.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 62.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 65.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 67.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 70.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 72.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 75.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 77.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 80.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 82.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 85.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 87.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 90.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 92.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 95.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 97.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 100.00       | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |



**Stage-Discharge for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| 325.50              | 0.00               | 0.00               | 0.00               | 330.80              | 15.18              | 15.18              | 0.00               |
| 325.60              | 2.93               | 2.93               | 0.00               | 330.90              | 15.18              | 15.18              | 0.00               |
| 325.70              | 3.09               | 3.09               | 0.00               | 331.00              | 15.18              | 15.18              | 0.00               |
| 325.80              | 3.25               | 3.25               | 0.00               | 331.10              | 15.18              | 15.18              | 0.00               |
| 325.90              | 3.41               | 3.41               | 0.00               | 331.20              | 15.18              | 15.18              | 0.00               |
| 326.00              | 3.58               | 3.58               | 0.00               | 331.30              | 15.47              | 15.18              | 0.29               |
| 326.10              | 3.75               | 3.75               | 0.00               | 331.40              | 16.69              | 15.18              | 1.52               |
| 326.20              | 3.92               | 3.92               | 0.00               | 331.50              | 18.45              | 15.18              | 3.27               |
| 326.30              | 4.10               | 4.10               | 0.00               | 331.60              | 20.64              | 15.18              | 5.47               |
| 326.40              | 4.28               | 4.28               | 0.00               | 331.70              | <b>23.22</b>       | 15.18              | <b>8.04</b>        |
| 326.50              | 4.46               | 4.46               | 0.00               |                     |                    |                    |                    |
| 326.60              | 4.65               | 4.65               | 0.00               |                     |                    |                    |                    |
| 326.70              | 4.84               | 4.84               | 0.00               |                     |                    |                    |                    |
| 326.80              | 5.03               | 5.03               | 0.00               |                     |                    |                    |                    |
| 326.90              | 5.23               | 5.23               | 0.00               |                     |                    |                    |                    |
| 327.00              | 5.44               | 5.44               | 0.00               |                     |                    |                    |                    |
| 327.10              | 5.64               | 5.64               | 0.00               |                     |                    |                    |                    |
| 327.20              | 5.85               | 5.85               | 0.00               |                     |                    |                    |                    |
| 327.30              | 6.07               | 6.07               | 0.00               |                     |                    |                    |                    |
| 327.40              | 6.29               | 6.29               | 0.00               |                     |                    |                    |                    |
| 327.50              | 6.51               | 6.51               | 0.00               |                     |                    |                    |                    |
| 327.60              | 6.74               | 6.74               | 0.00               |                     |                    |                    |                    |
| 327.70              | 6.97               | 6.97               | 0.00               |                     |                    |                    |                    |
| 327.80              | 7.20               | 7.20               | 0.00               |                     |                    |                    |                    |
| 327.90              | 7.44               | 7.44               | 0.00               |                     |                    |                    |                    |
| 328.00              | 7.69               | 7.69               | 0.00               |                     |                    |                    |                    |
| 328.10              | 7.92               | 7.92               | 0.00               |                     |                    |                    |                    |
| 328.20              | 8.16               | 8.16               | 0.00               |                     |                    |                    |                    |
| 328.30              | 8.40               | 8.40               | 0.00               |                     |                    |                    |                    |
| 328.40              | 8.65               | 8.65               | 0.00               |                     |                    |                    |                    |
| 328.50              | 8.90               | 8.90               | 0.00               |                     |                    |                    |                    |
| 328.60              | 9.15               | 9.15               | 0.00               |                     |                    |                    |                    |
| 328.70              | 9.41               | 9.41               | 0.00               |                     |                    |                    |                    |
| 328.80              | 9.67               | 9.67               | 0.00               |                     |                    |                    |                    |
| 328.90              | 9.94               | 9.94               | 0.00               |                     |                    |                    |                    |
| 329.00              | 10.21              | 10.21              | 0.00               |                     |                    |                    |                    |
| 329.10              | 10.47              | 10.47              | 0.00               |                     |                    |                    |                    |
| 329.20              | 10.74              | 10.74              | 0.00               |                     |                    |                    |                    |
| 329.30              | 11.01              | 11.01              | 0.00               |                     |                    |                    |                    |
| 329.40              | 11.28              | 11.28              | 0.00               |                     |                    |                    |                    |
| 329.50              | 11.55              | 11.55              | 0.00               |                     |                    |                    |                    |
| 329.60              | 11.83              | 11.83              | 0.00               |                     |                    |                    |                    |
| 329.70              | 12.12              | 12.12              | 0.00               |                     |                    |                    |                    |
| 329.80              | 12.40              | 12.40              | 0.00               |                     |                    |                    |                    |
| 329.90              | 12.69              | 12.69              | 0.00               |                     |                    |                    |                    |
| 330.00              | 12.98              | 12.98              | 0.00               |                     |                    |                    |                    |
| 330.10              | 13.41              | 13.41              | 0.00               |                     |                    |                    |                    |
| 330.20              | 13.84              | 13.84              | 0.00               |                     |                    |                    |                    |
| 330.30              | 14.28              | 14.28              | 0.00               |                     |                    |                    |                    |
| 330.40              | 14.73              | 14.73              | 0.00               |                     |                    |                    |                    |
| 330.50              | 15.18              | <b>15.18</b>       | 0.00               |                     |                    |                    |                    |
| 330.60              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |
| 330.70              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |

**Stage-Area-Storage for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 325.50              | 1,201                 | 0                       | 330.80              | 6,557                 | 19,417                  |
| 325.60              | 1,267                 | 123                     | 330.90              | 6,557                 | 20,170                  |
| 325.70              | 1,334                 | 253                     | 331.00              | 6,557                 | 20,951                  |
| 325.80              | 1,404                 | 390                     | 331.10              | 6,557                 | 21,763                  |
| 325.90              | 1,475                 | 534                     | 331.20              | 6,557                 | 22,604                  |
| 326.00              | 1,548                 | 685                     | 331.30              | 6,557                 | 23,475                  |
| 326.10              | 1,620                 | 844                     | 331.40              | 6,557                 | 24,376                  |
| 326.20              | 1,694                 | 1,009                   | 331.50              | 6,557                 | 25,309                  |
| 326.30              | 1,770                 | 1,183                   | 331.60              | 6,557                 | 26,274                  |
| 326.40              | 1,847                 | 1,363                   | 331.70              | 6,557                 | <b>27,271</b>           |
| 326.50              | 1,926                 | 1,552                   |                     |                       |                         |
| 326.60              | 2,007                 | 1,749                   |                     |                       |                         |
| 326.70              | 2,090                 | 1,954                   |                     |                       |                         |
| 326.80              | 2,175                 | 2,167                   |                     |                       |                         |
| 326.90              | 2,261                 | 2,389                   |                     |                       |                         |
| 327.00              | 2,349                 | 2,619                   |                     |                       |                         |
| 327.10              | 2,438                 | 2,858                   |                     |                       |                         |
| 327.20              | 2,529                 | 3,107                   |                     |                       |                         |
| 327.30              | 2,622                 | 3,364                   |                     |                       |                         |
| 327.40              | 2,716                 | 3,631                   |                     |                       |                         |
| 327.50              | 2,813                 | 3,908                   |                     |                       |                         |
| 327.60              | 2,911                 | 4,194                   |                     |                       |                         |
| 327.70              | 3,010                 | 4,490                   |                     |                       |                         |
| 327.80              | 3,112                 | 4,796                   |                     |                       |                         |
| 327.90              | 3,215                 | 5,112                   |                     |                       |                         |
| 328.00              | 3,320                 | 5,439                   |                     |                       |                         |
| 328.10              | 3,422                 | 5,776                   |                     |                       |                         |
| 328.20              | 3,525                 | 6,123                   |                     |                       |                         |
| 328.30              | 3,630                 | 6,481                   |                     |                       |                         |
| 328.40              | 3,737                 | 6,850                   |                     |                       |                         |
| 328.50              | 3,845                 | 7,229                   |                     |                       |                         |
| 328.60              | 3,955                 | 7,619                   |                     |                       |                         |
| 328.70              | 4,066                 | 8,020                   |                     |                       |                         |
| 328.80              | 4,179                 | 8,432                   |                     |                       |                         |
| 328.90              | 4,294                 | 8,856                   |                     |                       |                         |
| 329.00              | 4,410                 | 9,291                   |                     |                       |                         |
| 329.10              | 4,523                 | 9,737                   |                     |                       |                         |
| 329.20              | 4,638                 | 10,195                  |                     |                       |                         |
| 329.30              | 4,754                 | 10,665                  |                     |                       |                         |
| 329.40              | 4,872                 | 11,146                  |                     |                       |                         |
| 329.50              | 4,991                 | 11,639                  |                     |                       |                         |
| 329.60              | 5,112                 | 12,145                  |                     |                       |                         |
| 329.70              | 5,234                 | 12,662                  |                     |                       |                         |
| 329.80              | 5,357                 | 13,191                  |                     |                       |                         |
| 329.90              | 5,482                 | 13,733                  |                     |                       |                         |
| 330.00              | 5,609                 | 14,288                  |                     |                       |                         |
| 330.10              | 5,793                 | 14,858                  |                     |                       |                         |
| 330.20              | 5,979                 | 15,447                  |                     |                       |                         |
| 330.30              | 6,169                 | 16,054                  |                     |                       |                         |
| 330.40              | 6,361                 | 16,681                  |                     |                       |                         |
| 330.50              | <b>6,557</b>          | 17,326                  |                     |                       |                         |
| 330.60              | 6,557                 | 17,996                  |                     |                       |                         |
| 330.70              | 6,557                 | 18,692                  |                     |                       |                         |

**Summary for Pond 6P: Proposed Stormwater Pond**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 2.96" for 25-yr event  
 Inflow = 3.72 cfs @ 12.11 hrs, Volume= 0.321 af  
 Outflow = 0.88 cfs @ 12.70 hrs, Volume= 0.320 af, Atten= 76%, Lag= 35.4 min  
 Primary = 0.88 cfs @ 12.70 hrs, Volume= 0.320 af  
 Routed to Reach R10 : 10" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP5 : Analysis Point 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 329.33' Surf.Area= 2,011 sf Storage= 1,574 cf  
 Peak Elev= 331.17' @ 12.70 hrs Surf.Area= 4,545 sf Storage= 7,639 cf (6,066 cf above start)

Plug-Flow detention time= 475.9 min calculated for 0.284 af (89% of inflow)  
 Center-of-Mass det. time= 357.5 min ( 1,195.4 - 837.9 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 331.75' | 6,028 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 327.75' | 8,305 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 327.50' | 2,269 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 16,603 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 331.75           | 5,523             | 306.7         | 0                      | 0                      | 5,523            |
| 332.00           | 5,830             | 312.4         | 1,419                  | 1,419                  | 5,814            |
| 332.75           | 6,467             | 324.9         | 4,609                  | 6,028                  | 6,492            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.75           | 200               | 93.4          | 0                      | 0                      | 200              |
| 328.00           | 271               | 98.0          | 59                     | 59                     | 274              |
| 329.00           | 1,297             | 155.9         | 720                    | 779                    | 1,451            |
| 330.00           | 2,476             | 197.8         | 1,855                  | 2,634                  | 2,643            |
| 331.00           | 3,318             | 222.9         | 2,887                  | 5,521                  | 3,510            |
| 331.75           | 4,121             | 250.8         | 2,784                  | 8,305                  | 4,576            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.50           | 29                | 23.3          | 0                      | 0                      | 29               |
| 328.00           | 88                | 35.9          | 28                     | 28                     | 90               |
| 329.00           | 282               | 61.1          | 176                    | 204                    | 291              |
| 330.00           | 574               | 85.9          | 419                    | 623                    | 590              |
| 331.00           | 968               | 111.0         | 762                    | 1,386                  | 995              |
| 331.75           | 1,402             | 143.0         | 884                    | 2,269                  | 1,649            |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr 25-yr Rainfall=4.56"**

Prepared by CLA Site

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| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.63' | <b>10.0' long x 7.8' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.42 2.53 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.67 2.68 2.71 2.75 |
| #2     | Primary   | 331.61' | <b>10.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads   |
| #3     | Primary   | 330.12' | <b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |
| #4     | Primary   | 329.33' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

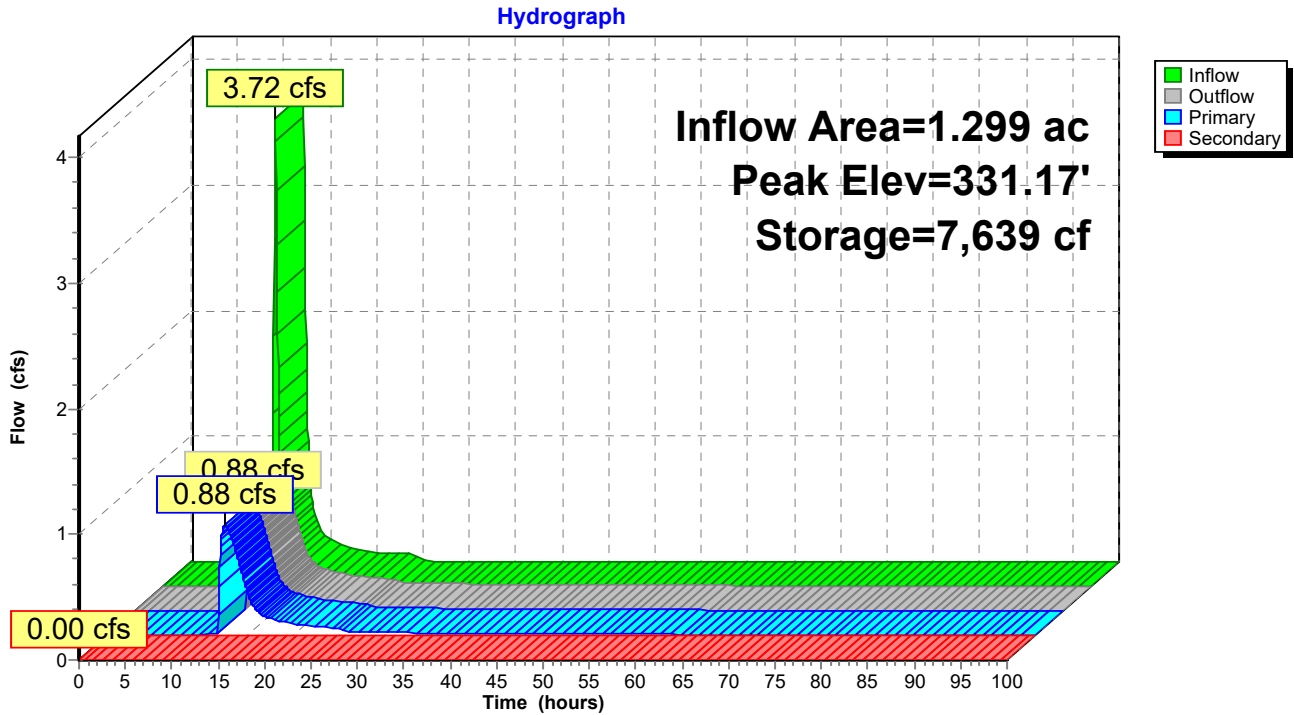
**Primary OutFlow** Max=0.88 cfs @ 12.70 hrs HW=331.17' TW=329.66' (Dynamic Tailwater)

- ↳ 2=Orifice/Grate ( Controls 0.00 cfs)
- ↳ 3=Orifice/Grate (Orifice Controls 0.84 cfs @ 4.30 fps)
- ↳ 4=Orifice/Grate (Orifice Controls 0.03 cfs @ 5.91 fps)

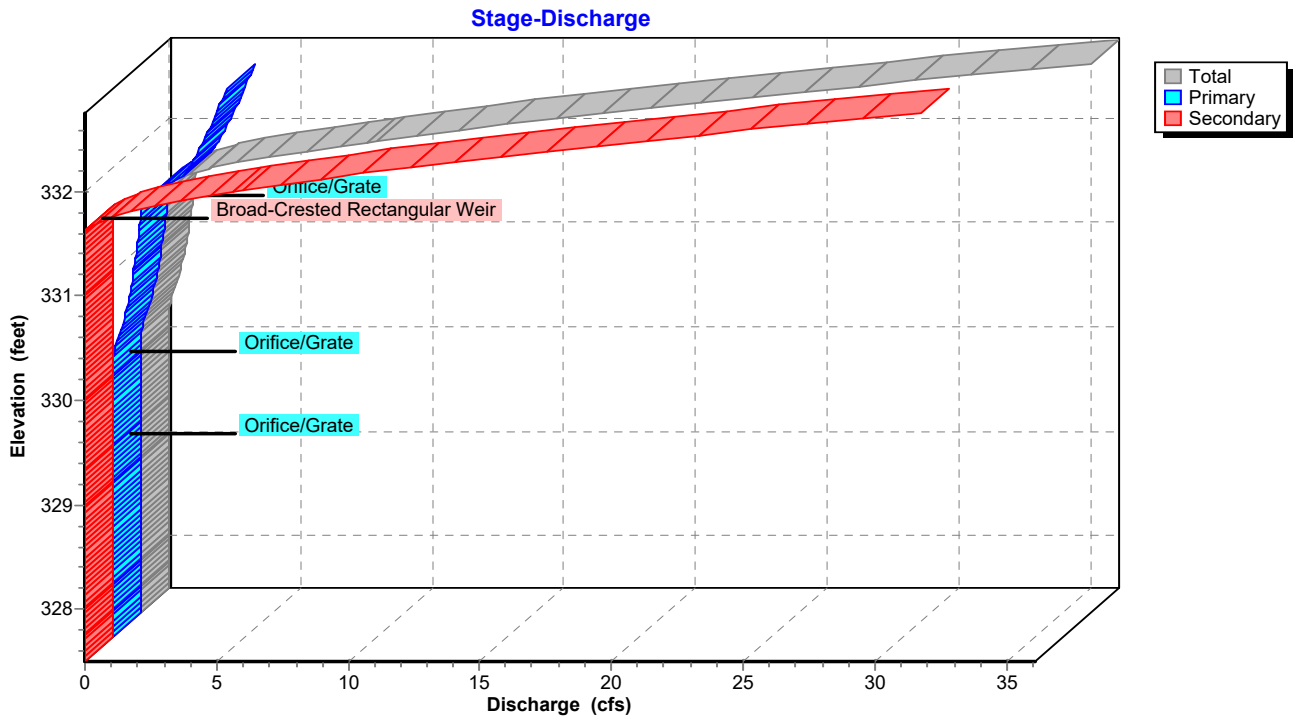
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=329.33' TW=0.00' (Dynamic Tailwater)

- ↳ 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

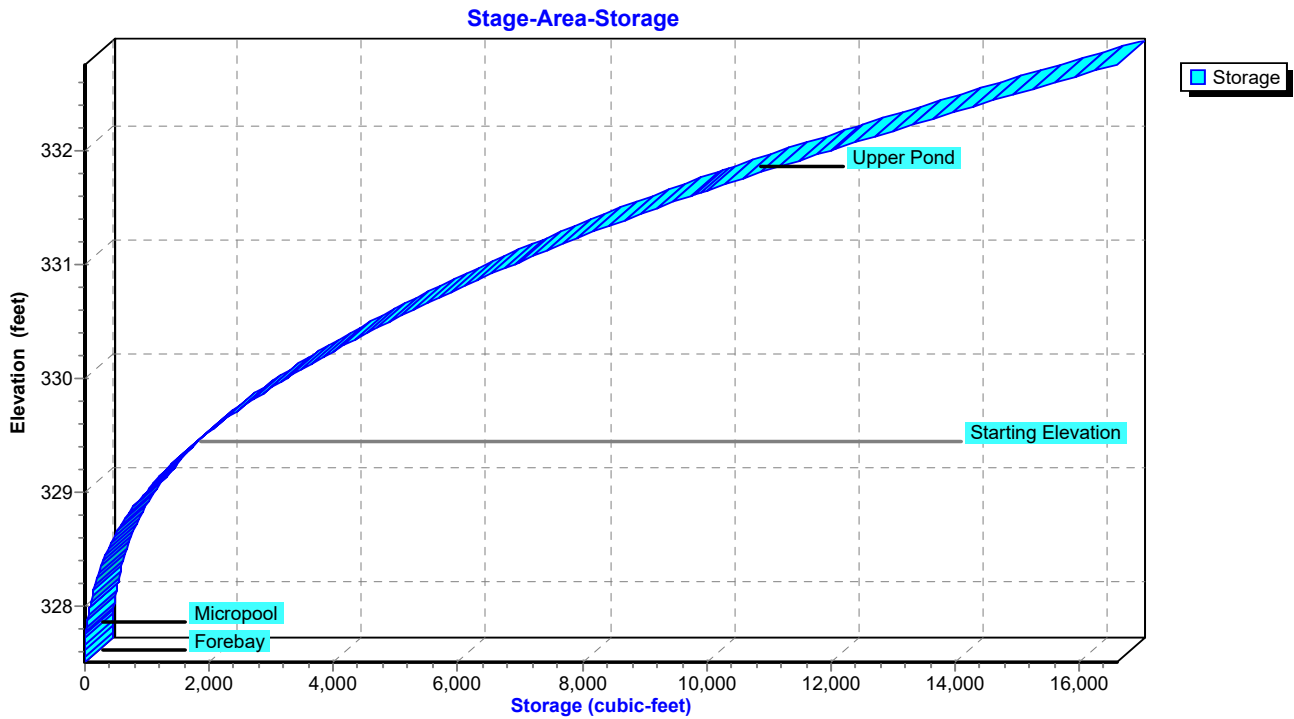
**Pond 6P: Proposed Stormwater Pond**



### Pond 6P: Proposed Stormwater Pond



### Pond 6P: Proposed Stormwater Pond



**Hydrograph for Pond 6P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.01         | 1,581                | 329.33           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.06</b>  | 1,808                | 329.44           | 0.01          | 0.01          | 0.00            |
| 12.50        | <b>1.35</b>  | <b>7,487</b>         | <b>331.13</b>    | <b>0.86</b>   | <b>0.86</b>   | 0.00            |
| 15.00        | 0.18         | <b>4,952</b>         | <b>330.51</b>    | <b>0.37</b>   | <b>0.37</b>   | 0.00            |
| 17.50        | 0.11         | 4,293                | 330.32           | 0.14          | 0.14          | 0.00            |
| 20.00        | 0.08         | 4,137                | 330.27           | 0.09          | 0.09          | 0.00            |
| 22.50        | 0.07         | 4,046                | 330.25           | 0.07          | 0.07          | 0.00            |
| 25.00        | 0.02         | 3,936                | 330.21           | 0.05          | 0.05          | 0.00            |
| 27.50        | 0.00         | 3,690                | 330.14           | 0.02          | 0.02          | 0.00            |
| 30.00        | 0.00         | 3,499                | 330.08           | 0.02          | 0.02          | 0.00            |
| 32.50        | 0.00         | 3,312                | 330.02           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,130                | 329.96           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 2,956                | 329.90           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,791                | 329.84           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,635                | 329.78           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,490                | 329.73           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,355                | 329.68           | 0.01          | 0.01          | 0.00            |
| 50.00        | 0.00         | 2,231                | 329.63           | 0.01          | 0.01          | 0.00            |
| 52.50        | 0.00         | 2,117                | 329.58           | 0.01          | 0.01          | 0.00            |
| 55.00        | 0.00         | 2,016                | 329.53           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,926                | 329.50           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,849                | 329.46           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,785                | 329.43           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,734                | 329.41           | 0.01          | 0.01          | 0.00            |
| 67.50        | 0.00         | 1,696                | 329.39           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,670                | 329.38           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,652                | 329.37           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,640                | 329.36           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,630                | 329.36           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,623                | 329.35           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,617                | 329.35           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,613                | 329.35           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,609                | 329.35           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,606                | 329.35           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,603                | 329.34           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,601                | 329.34           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,599                | 329.34           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,598                | 329.34           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 327.50              | 0.00               | 0.00             | 0.00               | 330.15              | 0.03               | 0.03             | 0.00               |
| 327.55              | 0.00               | 0.00             | 0.00               | 330.20              | 0.04               | 0.04             | 0.00               |
| 327.60              | 0.00               | 0.00             | 0.00               | 330.25              | 0.07               | 0.07             | 0.00               |
| 327.65              | 0.00               | 0.00             | 0.00               | 330.30              | 0.12               | 0.12             | 0.00               |
| 327.70              | 0.00               | 0.00             | 0.00               | 330.35              | 0.17               | 0.17             | 0.00               |
| 327.75              | 0.00               | 0.00             | 0.00               | 330.40              | 0.23               | 0.23             | 0.00               |
| 327.80              | 0.00               | 0.00             | 0.00               | 330.45              | 0.30               | 0.30             | 0.00               |
| 327.85              | 0.00               | 0.00             | 0.00               | 330.50              | 0.36               | 0.36             | 0.00               |
| 327.90              | 0.00               | 0.00             | 0.00               | 330.55              | 0.43               | 0.43             | 0.00               |
| 327.95              | 0.00               | 0.00             | 0.00               | 330.60              | 0.49               | 0.49             | 0.00               |
| 328.00              | 0.00               | 0.00             | 0.00               | 330.65              | 0.53               | 0.53             | 0.00               |
| 328.05              | 0.00               | 0.00             | 0.00               | 330.70              | 0.57               | 0.57             | 0.00               |
| 328.10              | 0.00               | 0.00             | 0.00               | 330.75              | 0.61               | 0.61             | 0.00               |
| 328.15              | 0.00               | 0.00             | 0.00               | 330.80              | 0.65               | 0.65             | 0.00               |
| 328.20              | 0.00               | 0.00             | 0.00               | 330.85              | 0.69               | 0.69             | 0.00               |
| 328.25              | 0.00               | 0.00             | 0.00               | 330.90              | 0.72               | 0.72             | 0.00               |
| 328.30              | 0.00               | 0.00             | 0.00               | 330.95              | 0.75               | 0.75             | 0.00               |
| 328.35              | 0.00               | 0.00             | 0.00               | 331.00              | 0.78               | 0.78             | 0.00               |
| 328.40              | 0.00               | 0.00             | 0.00               | 331.05              | 0.81               | 0.81             | 0.00               |
| 328.45              | 0.00               | 0.00             | 0.00               | 331.10              | 0.84               | 0.84             | 0.00               |
| 328.50              | 0.00               | 0.00             | 0.00               | 331.15              | 0.87               | 0.87             | 0.00               |
| 328.55              | 0.00               | 0.00             | 0.00               | 331.20              | 0.90               | 0.90             | 0.00               |
| 328.60              | 0.00               | 0.00             | 0.00               | 331.25              | 0.92               | 0.92             | 0.00               |
| 328.65              | 0.00               | 0.00             | 0.00               | 331.30              | 0.95               | 0.95             | 0.00               |
| 328.70              | 0.00               | 0.00             | 0.00               | 331.35              | 0.97               | 0.97             | 0.00               |
| 328.75              | 0.00               | 0.00             | 0.00               | 331.40              | 1.00               | 1.00             | 0.00               |
| 328.80              | 0.00               | 0.00             | 0.00               | 331.45              | 1.02               | 1.02             | 0.00               |
| 328.85              | 0.00               | 0.00             | 0.00               | 331.50              | 1.04               | 1.04             | 0.00               |
| 328.90              | 0.00               | 0.00             | 0.00               | 331.55              | 1.07               | 1.07             | 0.00               |
| 328.95              | 0.00               | 0.00             | 0.00               | 331.60              | 1.09               | 1.09             | 0.00               |
| 329.00              | 0.00               | 0.00             | 0.00               | 331.65              | 1.25               | 1.18             | 0.07               |
| 329.05              | 0.00               | 0.00             | 0.00               | 331.70              | 1.81               | 1.36             | 0.45               |
| 329.10              | 0.00               | 0.00             | 0.00               | 331.75              | 2.61               | 1.60             | 1.01               |
| 329.15              | 0.00               | 0.00             | 0.00               | 331.80              | 3.58               | 1.88             | 1.70               |
| 329.20              | 0.00               | 0.00             | 0.00               | 331.85              | 4.71               | 2.20             | 2.51               |
| 329.25              | 0.00               | 0.00             | 0.00               | 331.90              | 6.00               | 2.55             | 3.45               |
| 329.30              | 0.00               | 0.00             | 0.00               | 331.95              | 7.26               | 2.76             | 4.50               |
| 329.35              | 0.00               | 0.00             | 0.00               | 332.00              | 8.55               | 2.89             | 5.66               |
| 329.40              | 0.00               | 0.00             | 0.00               | 332.05              | 9.94               | 3.01             | 6.93               |
| 329.45              | 0.01               | 0.01             | 0.00               | 332.10              | 11.47              | 3.13             | 8.34               |
| 329.50              | 0.01               | 0.01             | 0.00               | 332.15              | 13.10              | 3.23             | 9.87               |
| 329.55              | 0.01               | 0.01             | 0.00               | 332.20              | 14.85              | 3.34             | 11.51              |
| 329.60              | 0.01               | 0.01             | 0.00               | 332.25              | 16.62              | 3.44             | 13.18              |
| 329.65              | 0.01               | 0.01             | 0.00               | 332.30              | 18.33              | 3.54             | 14.79              |
| 329.70              | 0.02               | 0.02             | 0.00               | 332.35              | 20.09              | 3.63             | 16.46              |
| 329.75              | 0.02               | 0.02             | 0.00               | 332.40              | 21.91              | 3.73             | 18.19              |
| 329.80              | 0.02               | 0.02             | 0.00               | 332.45              | 23.78              | 3.82             | 19.97              |
| 329.85              | 0.02               | 0.02             | 0.00               | 332.50              | 25.70              | 3.90             | 21.80              |
| 329.90              | 0.02               | 0.02             | 0.00               | 332.55              | 27.67              | 3.99             | 23.68              |
| 329.95              | 0.02               | 0.02             | 0.00               | 332.60              | 29.69              | 4.07             | 25.62              |
| 330.00              | 0.02               | 0.02             | 0.00               | 332.65              | 31.76              | 4.15             | 27.61              |
| 330.05              | 0.02               | 0.02             | 0.00               | 332.70              | 33.90              | 4.23             | 29.66              |
| 330.10              | 0.02               | 0.02             | 0.00               | 332.75              | <b>36.08</b>       | <b>4.31</b>      | <b>31.77</b>       |

**Stage-Area-Storage for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 327.50              | 0                       | 330.15              | 3,727                   |
| 327.55              | 2                       | 330.20              | 3,890                   |
| 327.60              | 3                       | 330.25              | 4,055                   |
| 327.65              | 5                       | 330.30              | 4,224                   |
| 327.70              | 8                       | 330.35              | 4,395                   |
| 327.75              | 10                      | 330.40              | 4,569                   |
| 327.80              | 23                      | 330.45              | 4,747                   |
| 327.85              | 38                      | 330.50              | 4,927                   |
| 327.90              | 53                      | 330.55              | 5,111                   |
| 327.95              | 69                      | 330.60              | 5,297                   |
| 328.00              | 87                      | 330.65              | 5,487                   |
| 328.05              | 106                     | 330.70              | 5,680                   |
| 328.10              | 127                     | 330.75              | 5,876                   |
| 328.15              | 150                     | 330.80              | 6,076                   |
| 328.20              | 175                     | 330.85              | 6,279                   |
| 328.25              | 203                     | 330.90              | 6,484                   |
| 328.30              | 233                     | 330.95              | 6,694                   |
| 328.35              | 266                     | 331.00              | 6,906                   |
| 328.40              | 302                     | 331.05              | 7,123                   |
| 328.45              | 341                     | 331.10              | 7,343                   |
| 328.50              | 382                     | 331.15              | 7,567                   |
| 328.55              | 427                     | 331.20              | 7,795                   |
| 328.60              | 474                     | 331.25              | 8,027                   |
| 328.65              | 525                     | 331.30              | 8,263                   |
| 328.70              | 580                     | 331.35              | 8,503                   |
| 328.75              | 637                     | 331.40              | 8,747                   |
| 328.80              | 699                     | 331.45              | 8,995                   |
| 328.85              | 764                     | 331.50              | 9,248                   |
| 328.90              | 833                     | 331.55              | 9,505                   |
| 328.95              | 906                     | 331.60              | 9,765                   |
| 329.00              | 983                     | 331.65              | 10,031                  |
| 329.05              | 1,063                   | 331.70              | 10,300                  |
| 329.10              | 1,147                   | 331.75              | 10,574                  |
| 329.15              | 1,234                   | 331.80              | 10,852                  |
| 329.20              | 1,324                   | 331.85              | 11,133                  |
| 329.25              | 1,417                   | 331.90              | 11,416                  |
| 329.30              | 1,514                   | 331.95              | 11,703                  |
| 329.35              | 1,614                   | 332.00              | 11,993                  |
| 329.40              | 1,718                   | 332.05              | 12,286                  |
| 329.45              | 1,825                   | 332.10              | 12,580                  |
| 329.50              | 1,936                   | 332.15              | 12,877                  |
| 329.55              | 2,051                   | 332.20              | 13,176                  |
| 329.60              | 2,169                   | 332.25              | 13,477                  |
| 329.65              | 2,291                   | 332.30              | 13,780                  |
| 329.70              | 2,417                   | 332.35              | 14,085                  |
| 329.75              | 2,547                   | 332.40              | 14,392                  |
| 329.80              | 2,681                   | 332.45              | 14,701                  |
| 329.85              | 2,819                   | 332.50              | 15,013                  |
| 329.90              | 2,961                   | 332.55              | 15,327                  |
| 329.95              | 3,107                   | 332.60              | 15,642                  |
| 330.00              | 3,257                   | 332.65              | 15,960                  |
| 330.05              | 3,411                   | 332.70              | 16,280                  |
| 330.10              | 3,568                   | 332.75              | <b>16,603</b>           |

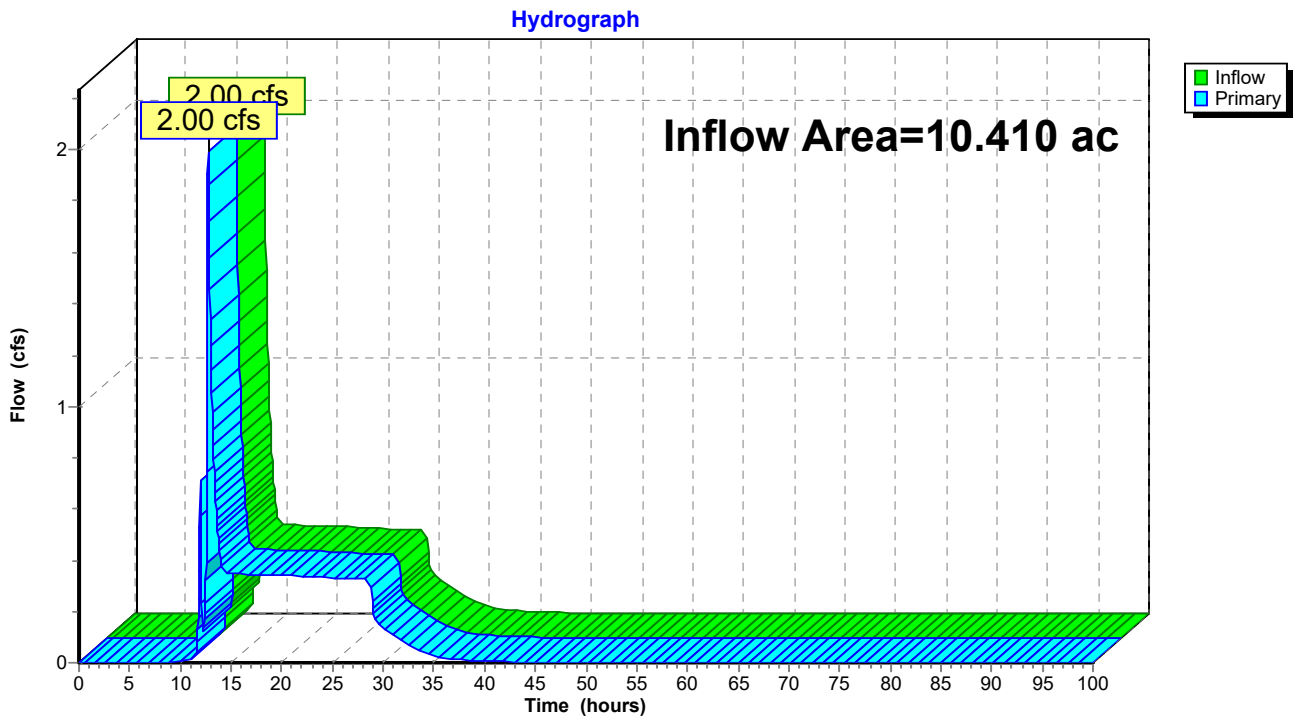


### Summary for Link AP3: Analysis Point 3

Inflow Area = 10.410 ac, 13.37% Impervious, Inflow Depth = 0.69" for 25-yr event  
Inflow = 2.00 cfs @ 12.72 hrs, Volume= 0.602 af  
Primary = 2.00 cfs @ 12.72 hrs, Volume= 0.602 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3



**Hydrograph for Link AP3: Analysis Point 3**

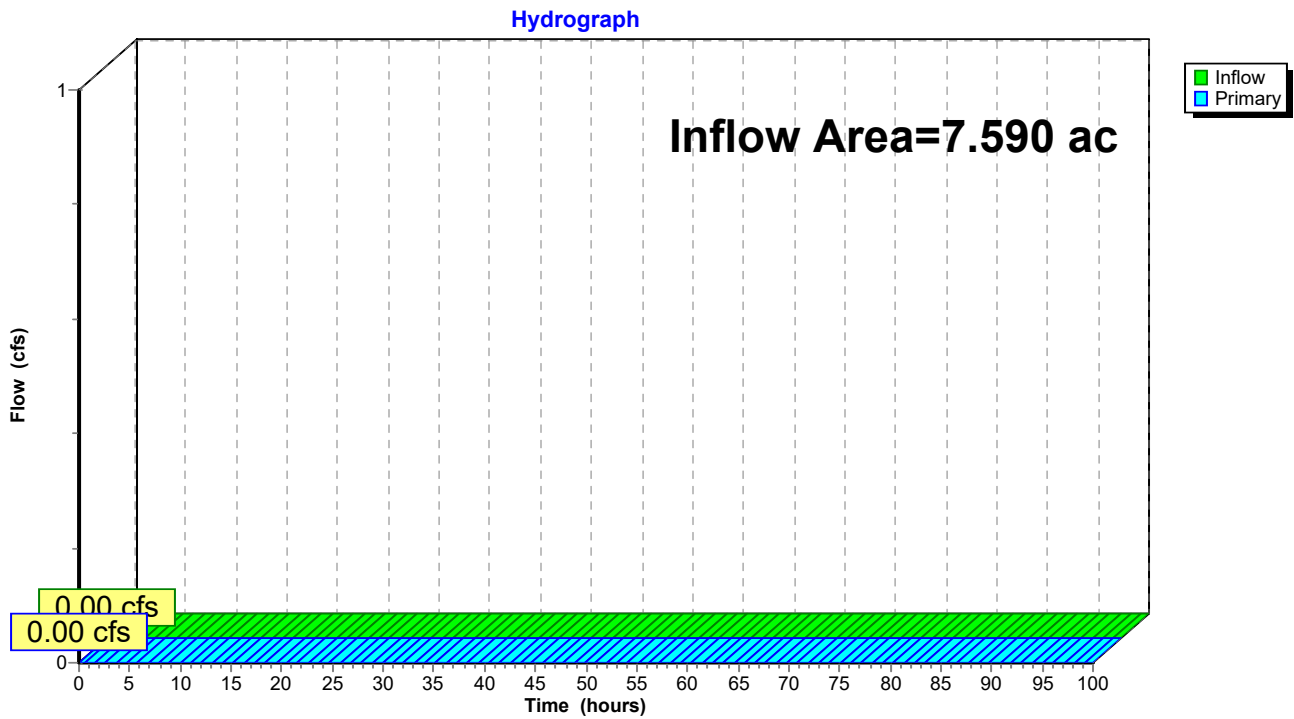
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.01         | 0.00             | 0.01          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.70</b>  | 0.00             | <b>0.70</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>1.23</b>  | 0.00             | <b>1.23</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.40         | 0.00             | 0.40          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.35         | 0.00             | 0.35          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.35         | 0.00             | 0.35          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.34         | 0.00             | 0.34          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.34         | 0.00             | 0.34          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.34         | 0.00             | 0.34          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.34         | 0.00             | 0.34          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.34         | 0.00             | 0.34          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.34         | 0.00             | 0.34          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.34         | 0.00             | 0.34          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.34         | 0.00             | 0.34          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.33         | 0.00             | 0.33          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.33         | 0.00             | 0.33          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.33         | 0.00             | 0.33          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.33         | 0.00             | 0.33          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.19         | 0.00             | 0.19          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.13         | 0.00             | 0.13          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.11         | 0.00             | 0.11          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.08         | 0.00             | 0.08          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.06         | 0.00             | 0.06          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.04         | 0.00             | 0.04          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.03         | 0.00             | 0.03          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.01         | 0.00             | 0.01          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.01         | 0.00             | 0.01          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.01         | 0.00             | 0.01          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.01         | 0.00             | 0.01          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.00" for 25-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

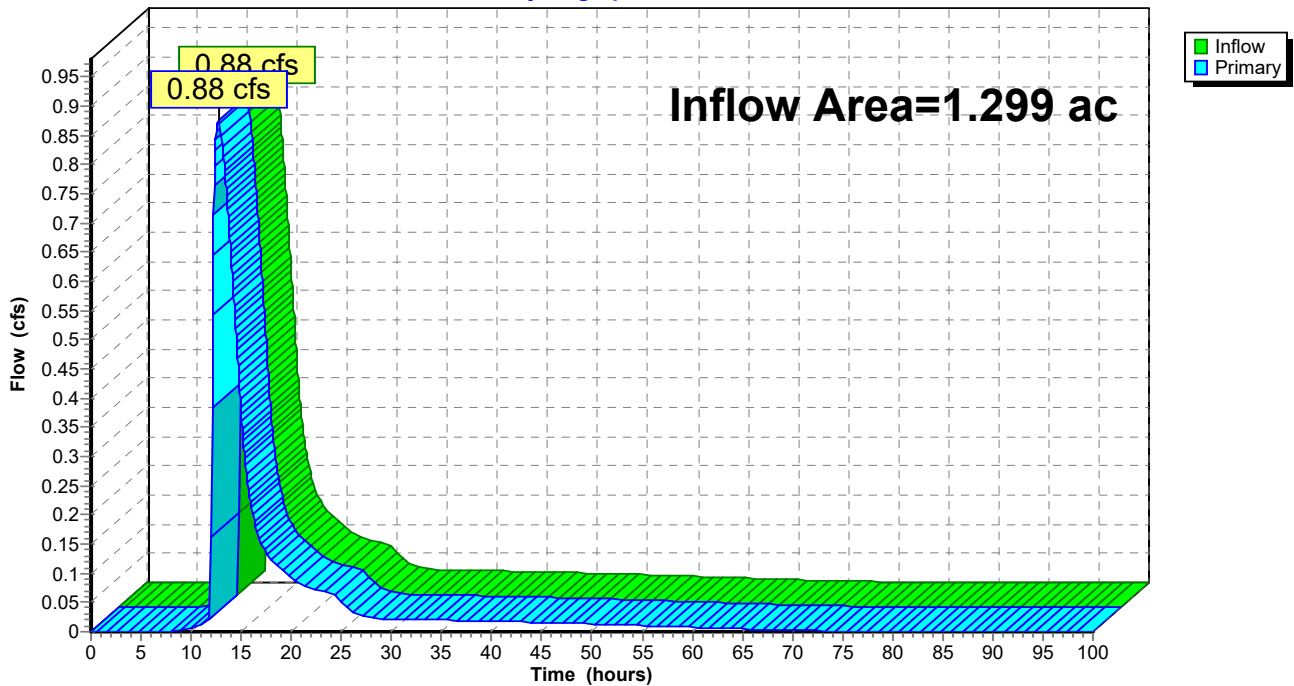
### Summary for Link AP5: Analysis Point 5

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 2.96" for 25-yr event  
Inflow = 0.88 cfs @ 12.70 hrs, Volume= 0.320 af  
Primary = 0.88 cfs @ 12.70 hrs, Volume= 0.320 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5

Hydrograph



**Hydrograph for Link AP5: Analysis Point 5**

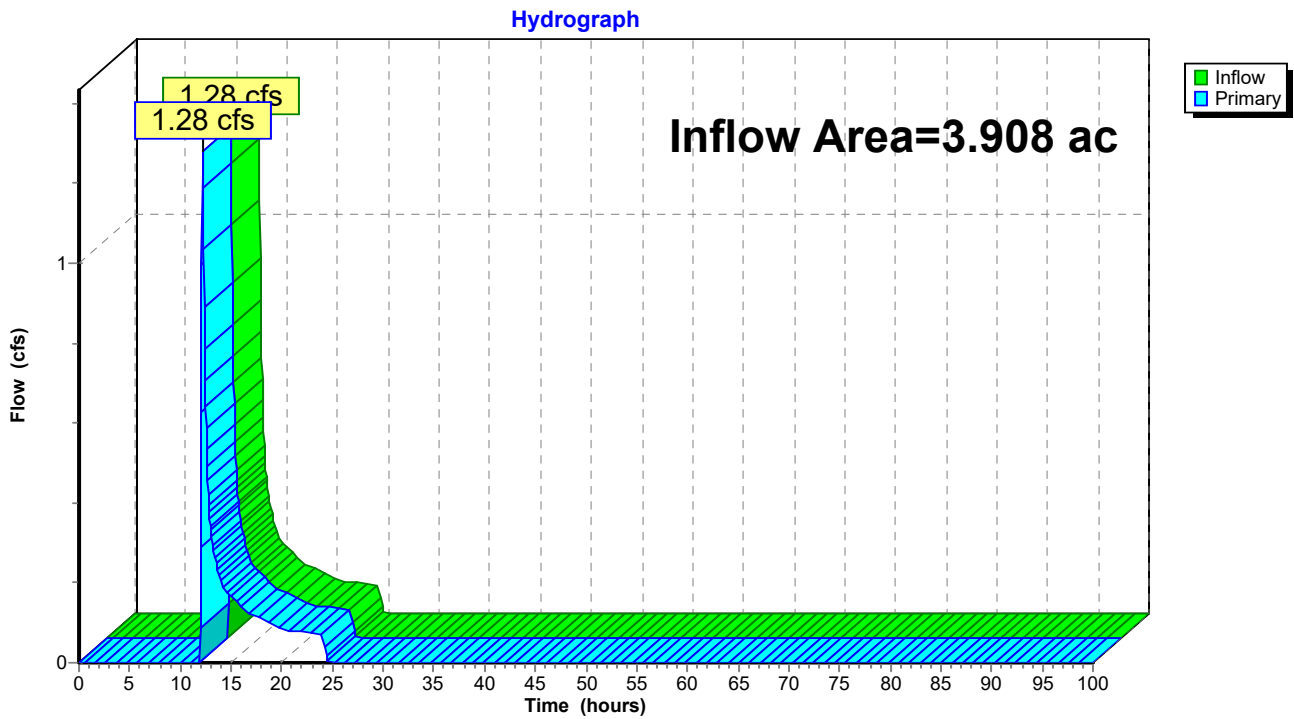
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.01         | 0.00             | 0.01          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.01         | 0.00             | 0.01          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.01         | 0.00             | 0.01          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | <b>0.04</b>  | 0.00             | <b>0.04</b>   | 65.00        | 0.01         | 0.00             | 0.01          |
| 13.00        | <b>0.85</b>  | 0.00             | <b>0.85</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.64         | 0.00             | 0.64          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.37         | 0.00             | 0.37          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.21         | 0.00             | 0.21          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.15         | 0.00             | 0.15          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.12         | 0.00             | 0.12          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.11         | 0.00             | 0.11          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.09         | 0.00             | 0.09          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.08         | 0.00             | 0.08          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.07         | 0.00             | 0.07          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.07         | 0.00             | 0.07          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.07         | 0.00             | 0.07          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.05         | 0.00             | 0.05          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.03         | 0.00             | 0.03          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.03         | 0.00             | 0.03          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.02         | 0.00             | 0.02          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.02         | 0.00             | 0.02          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.02         | 0.00             | 0.02          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.02         | 0.00             | 0.02          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.02         | 0.00             | 0.02          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.02         | 0.00             | 0.02          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.01         | 0.00             | 0.01          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 49.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 50.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 51.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 52.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |

### Summary for Link AP6: Analysis Point 6

Inflow Area = 3.908 ac, 0.00% Impervious, Inflow Depth = 0.52" for 25-yr event  
Inflow = 1.28 cfs @ 12.19 hrs, Volume= 0.170 af  
Primary = 1.28 cfs @ 12.19 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.29</b>  | 0.00             | <b>0.29</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.33</b>  | 0.00             | <b>0.33</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.21         | 0.00             | 0.21          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.17         | 0.00             | 0.17          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.14         | 0.00             | 0.14          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.12         | 0.00             | 0.12          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.11         | 0.00             | 0.11          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.10         | 0.00             | 0.10          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.08         | 0.00             | 0.08          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.08         | 0.00             | 0.08          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.08         | 0.00             | 0.08          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.08         | 0.00             | 0.08          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.07         | 0.00             | 0.07          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 6S: Subcatchment 6** Runoff Area=1.299 ac 35.18% Impervious Runoff Depth=4.53"  
Flow Length=73' Tc=9.6 min CN=85 Runoff=8.73 cfs 0.490 af

**Subcatchment S4a: Subcatchment 4a** Runoff Area=10.222 ac 13.62% Impervious Runoff Depth=1.50"  
Flow Length=907' Tc=38.7 min CN=53 Runoff=9.35 cfs 1.274 af

**Subcatchment S4b: Subcatchment 4b** Runoff Area=0.188 ac 0.00% Impervious Runoff Depth=3.69"  
Tc=6.0 min CN=77 Runoff=1.18 cfs 0.058 af

**Subcatchment S5a: Subcatchment 5a** Runoff Area=5.515 ac 54.87% Impervious Runoff Depth=4.53"  
Flow Length=634' Tc=17.7 min CN=85 Runoff=28.94 cfs 2.082 af

**Subcatchment S5b: Subcatchment 5b** Runoff Area=2.075 ac 33.06% Impervious Runoff Depth=1.42"  
Flow Length=207' Tc=68.8 min CN=52 Runoff=1.15 cfs 0.245 af

**Subcatchment S7: Subcatchment 7** Runoff Area=3.908 ac 0.00% Impervious Runoff Depth=1.26"  
Flow Length=531' Tc=19.9 min CN=50 Runoff=4.49 cfs 0.411 af

**Reach R10: 10" Culvert Pond Discharge** Avg. Flow Depth=0.45' Max Vel=4.98 fps Inflow=1.51 cfs 0.469 af  
10.0" Round Pipe n=0.012 L=27.0' S=0.0122 '/' Capacity=2.62 cfs Outflow=1.51 cfs 0.469 af

**Reach R11: Proposed RRv Swale - 268'** Avg. Flow Depth=0.95' Max Vel=2.01 fps Inflow=9.35 cfs 1.274 af  
n=0.035 L=268.0' S=0.0047 '/' Capacity=16.83 cfs Outflow=9.30 cfs 1.274 af

**Reach R12: 12" Culvert Pond Discharge** Avg. Flow Depth=1.00' Max Vel=0.48 fps Inflow=2.01 cfs 0.798 af  
12.0" Round Pipe n=0.012 L=137.0' S=0.0001 '/' Capacity=0.33 cfs Outflow=0.35 cfs 0.798 af

**Reach R7: Proposed RRv Swale** Avg. Flow Depth=1.57' Max Vel=2.05 fps Inflow=28.94 cfs 2.082 af  
n=0.080 L=318.0' S=0.0126 '/' Capacity=35.37 cfs Outflow=28.10 cfs 2.082 af

**Reach R8: Proposed RRv Swale** Avg. Flow Depth=0.37' Max Vel=0.97 fps Inflow=1.15 cfs 0.245 af  
n=0.080 L=568.0' S=0.0158 '/' Capacity=8.32 cfs Outflow=1.11 cfs 0.245 af

**Reach R9: Proposed RRV Swale** Avg. Flow Depth=1.09' Max Vel=1.03 fps Inflow=8.73 cfs 0.490 af  
n=0.080 L=764.0' S=0.0056 '/' Capacity=8.04 cfs Outflow=5.91 cfs 0.490 af

**Pond 4P: Proposed Stormwater Pond** Peak Elev=338.72' Storage=6,223 cf Inflow=9.30 cfs 1.274 af  
Primary=2.01 cfs 0.798 af Secondary=7.28 cfs 0.475 af Outflow=9.29 cfs 1.273 af

**Pond 5P: Proposed Infiltration Basin** Peak Elev=330.53' Storage=17,528 cf Inflow=28.12 cfs 2.327 af  
Discarded=15.22 cfs 2.327 af Secondary=0.00 cfs 0.000 af Outflow=15.22 cfs 2.327 af

**Pond 6P: Proposed Stormwater Pond** Peak Elev=331.73' Storage=10,479 cf Inflow=5.91 cfs 0.490 af  
Primary=1.51 cfs 0.469 af Secondary=0.80 cfs 0.021 af Outflow=2.30 cfs 0.490 af

**Link AP3: Analysis Point 3** Inflow=7.72 cfs 1.331 af  
Primary=7.72 cfs 1.331 af

**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Link AP4: Analysis Point 4**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP5: Analysis Point 5**

Inflow=2.30 cfs 0.490 af  
Primary=2.30 cfs 0.490 af

**Link AP6: Analysis Point 6**

Inflow=4.49 cfs 0.411 af  
Primary=4.49 cfs 0.411 af

**Total Runoff Area = 23.207 ac   Runoff Volume = 4.560 af   Average Runoff Depth = 2.36"**  
**76.04% Pervious = 17.646 ac   23.96% Impervious = 5.561 ac**

**Summary for Subcatchment 6S: Subcatchment 6**

Runoff = 8.73 cfs @ 12.01 hrs, Volume= 0.490 af, Depth= 4.53"  
 Routed to Reach R9 : Proposed RRV Swale

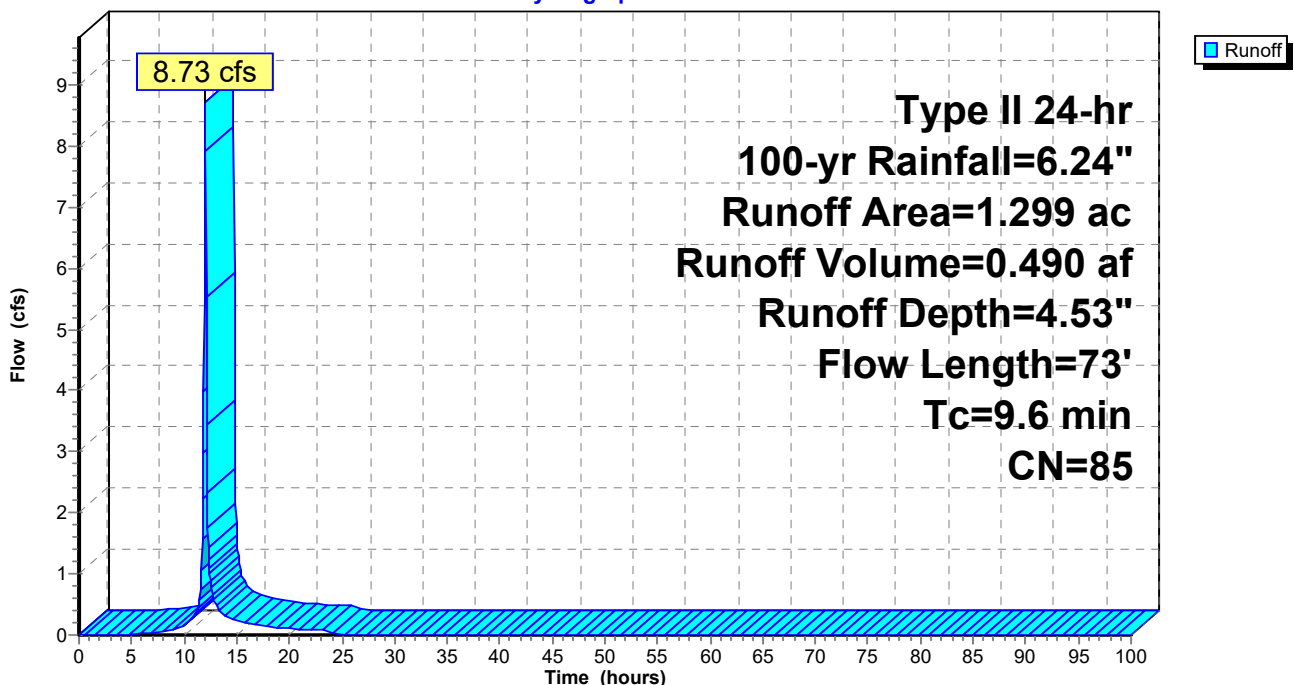
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.411     | 98 | Paved parking, HSG D      |
| 0.021     | 30 | Meadow, non-grazed, HSG A |
| 0.057     | 94 | Fallow, bare soil, HSG D  |
| 0.764     | 78 | Meadow, non-grazed, HSG D |
| * 0.046   | 98 | Water Surface, HSG D      |
| 1.299     | 85 | Weighted Average          |
| 0.842     |    | 64.82% Pervious Area      |
| 0.457     |    | 35.18% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.6      | 65            | 0.0154        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59" |
| 1.0      | 8             | 0.1328        | 0.14              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59" |
| 9.6      | 73            | Total         |                   |                |  |

**Subcatchment 6S: Subcatchment 6**

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment 6S: Subcatchment 6**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 4.53               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 4.53               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 4.53               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 4.53               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 4.53               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 4.53               | 0.00            |
| 6.00            | 0.50                | 0.01               | 0.02            | 59.00           | 6.24                | 4.53               | 0.00            |
| 7.00            | 0.62                | 0.03               | 0.04            | 60.00           | 6.24                | 4.53               | 0.00            |
| 8.00            | 0.75                | 0.07               | 0.06            | 61.00           | 6.24                | 4.53               | 0.00            |
| 9.00            | 0.92                | 0.14               | 0.10            | 62.00           | 6.24                | 4.53               | 0.00            |
| 10.00           | 1.13                | 0.24               | 0.16            | 63.00           | 6.24                | 4.53               | 0.00            |
| 11.00           | 1.47                | 0.43               | 0.33            | 64.00           | 6.24                | 4.53               | 0.00            |
| 12.00           | 4.14                | 2.58               | <b>8.71</b>     | 65.00           | 6.24                | 4.53               | 0.00            |
| 13.00           | 4.82                | 3.20               | 0.52            | 66.00           | 6.24                | 4.53               | 0.00            |
| 14.00           | 5.12                | 3.48               | 0.30            | 67.00           | 6.24                | 4.53               | 0.00            |
| 15.00           | 5.33                | 3.67               | 0.24            | 68.00           | 6.24                | 4.53               | 0.00            |
| 16.00           | 5.49                | 3.82               | 0.18            | 69.00           | 6.24                | 4.53               | 0.00            |
| 17.00           | 5.63                | 3.95               | 0.16            | 70.00           | 6.24                | 4.53               | 0.00            |
| 18.00           | 5.75                | 4.06               | 0.14            | 71.00           | 6.24                | 4.53               | 0.00            |
| 19.00           | 5.85                | 4.16               | 0.12            | 72.00           | 6.24                | 4.53               | 0.00            |
| 20.00           | 5.94                | 4.25               | 0.10            | 73.00           | 6.24                | 4.53               | 0.00            |
| 21.00           | 6.02                | 4.32               | 0.10            | 74.00           | 6.24                | 4.53               | 0.00            |
| 22.00           | 6.10                | 4.39               | 0.09            | 75.00           | 6.24                | 4.53               | 0.00            |
| 23.00           | 6.17                | 4.46               | 0.09            | 76.00           | 6.24                | 4.53               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>4.53</b>        | 0.09            | 77.00           | 6.24                | 4.53               | 0.00            |
| 25.00           | 6.24                | 4.53               | 0.00            | 78.00           | 6.24                | 4.53               | 0.00            |
| 26.00           | 6.24                | 4.53               | 0.00            | 79.00           | 6.24                | 4.53               | 0.00            |
| 27.00           | 6.24                | 4.53               | 0.00            | 80.00           | 6.24                | 4.53               | 0.00            |
| 28.00           | 6.24                | 4.53               | 0.00            | 81.00           | 6.24                | 4.53               | 0.00            |
| 29.00           | 6.24                | 4.53               | 0.00            | 82.00           | 6.24                | 4.53               | 0.00            |
| 30.00           | 6.24                | 4.53               | 0.00            | 83.00           | 6.24                | 4.53               | 0.00            |
| 31.00           | 6.24                | 4.53               | 0.00            | 84.00           | 6.24                | 4.53               | 0.00            |
| 32.00           | 6.24                | 4.53               | 0.00            | 85.00           | 6.24                | 4.53               | 0.00            |
| 33.00           | 6.24                | 4.53               | 0.00            | 86.00           | 6.24                | 4.53               | 0.00            |
| 34.00           | 6.24                | 4.53               | 0.00            | 87.00           | 6.24                | 4.53               | 0.00            |
| 35.00           | 6.24                | 4.53               | 0.00            | 88.00           | 6.24                | 4.53               | 0.00            |
| 36.00           | 6.24                | 4.53               | 0.00            | 89.00           | 6.24                | 4.53               | 0.00            |
| 37.00           | 6.24                | 4.53               | 0.00            | 90.00           | 6.24                | 4.53               | 0.00            |
| 38.00           | 6.24                | 4.53               | 0.00            | 91.00           | 6.24                | 4.53               | 0.00            |
| 39.00           | 6.24                | 4.53               | 0.00            | 92.00           | 6.24                | 4.53               | 0.00            |
| 40.00           | 6.24                | 4.53               | 0.00            | 93.00           | 6.24                | 4.53               | 0.00            |
| 41.00           | 6.24                | 4.53               | 0.00            | 94.00           | 6.24                | 4.53               | 0.00            |
| 42.00           | 6.24                | 4.53               | 0.00            | 95.00           | 6.24                | 4.53               | 0.00            |
| 43.00           | 6.24                | 4.53               | 0.00            | 96.00           | 6.24                | 4.53               | 0.00            |
| 44.00           | 6.24                | 4.53               | 0.00            | 97.00           | 6.24                | 4.53               | 0.00            |
| 45.00           | 6.24                | 4.53               | 0.00            | 98.00           | 6.24                | 4.53               | 0.00            |
| 46.00           | 6.24                | 4.53               | 0.00            | 99.00           | 6.24                | 4.53               | 0.00            |
| 47.00           | 6.24                | 4.53               | 0.00            | 100.00          | 6.24                | 4.53               | 0.00            |
| 48.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S4a: Subcatchment 4a**

Runoff = 9.35 cfs @ 12.40 hrs, Volume= 1.274 af, Depth= 1.50"

Routed to Reach R11 : Proposed RRv Swale - 268' Prior to Stormwater Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| * 0.470   | 98 | Paved roads, HSG A            |
| 0.681     | 39 | >75% Grass cover, Good, HSG A |
| 0.818     | 30 | Meadow, non-grazed, HSG A     |
| 0.105     | 98 | Roofs, HSG A                  |
| 0.331     | 98 | Paved parking, HSG A          |
| 0.247     | 98 | Paved parking, HSG D          |
| 4.615     | 30 | Woods, Good, HSG A            |
| 0.519     | 77 | Woods, Good, HSG D            |
| 0.020     | 94 | Fallow, bare soil, HSG D      |
| 2.177     | 80 | >75% Grass cover, Good, HSG D |
| 0.118     | 98 | Roofs, HSG D                  |
| 0.079     | 98 | Paved parking, HSG D          |
| 0.042     | 98 | Water Surface, HSG D          |
| 10.222    | 53 | Weighted Average              |
| 8.830     |    | 86.38% Pervious Area          |
| 1.392     |    | 13.62% Impervious Area        |

**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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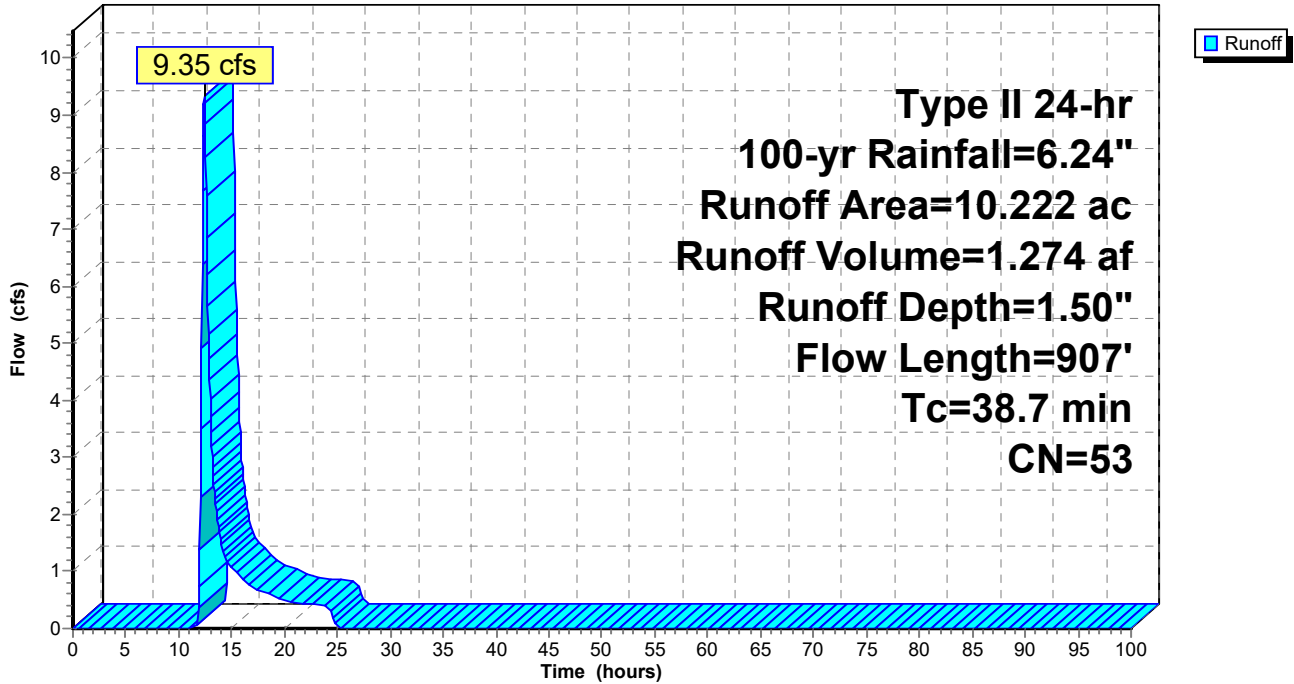
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.7         | 172              | 0.0028           | 0.37                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.4         | 46               | 0.0100           | 2.03                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1         | 9                | 0.0890           | 2.09                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2         | 17               | 0.0360           | 1.33                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 38.7        | 907              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 1.50            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 1.50            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 1.50            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 1.50            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 1.50            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 1.50            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 1.50            | 0.00         |
| 7.00         | 0.62             | 0.00            | 0.00         | 60.00        | 6.24             | 1.50            | 0.00         |
| 8.00         | 0.75             | 0.00            | 0.00         | 61.00        | 6.24             | 1.50            | 0.00         |
| 9.00         | 0.92             | 0.00            | 0.00         | 62.00        | 6.24             | 1.50            | 0.00         |
| 10.00        | 1.13             | 0.00            | 0.00         | 63.00        | 6.24             | 1.50            | 0.00         |
| 11.00        | 1.47             | 0.00            | 0.00         | 64.00        | 6.24             | 1.50            | 0.00         |
| 12.00        | 4.14             | 0.50            | <b>1.37</b>  | 65.00        | 6.24             | 1.50            | 0.00         |
| 13.00        | 4.82             | 0.78            | <b>3.70</b>  | 66.00        | 6.24             | 1.50            | 0.00         |
| 14.00        | 5.12             | 0.92            | 1.51         | 67.00        | 6.24             | 1.50            | 0.00         |
| 15.00        | 5.33             | 1.02            | 1.06         | 68.00        | 6.24             | 1.50            | 0.00         |
| 16.00        | 5.49             | 1.10            | 0.87         | 69.00        | 6.24             | 1.50            | 0.00         |
| 17.00        | 5.63             | 1.17            | 0.72         | 70.00        | 6.24             | 1.50            | 0.00         |
| 18.00        | 5.75             | 1.23            | 0.65         | 71.00        | 6.24             | 1.50            | 0.00         |
| 19.00        | 5.85             | 1.28            | 0.57         | 72.00        | 6.24             | 1.50            | 0.00         |
| 20.00        | 5.94             | 1.33            | 0.50         | 73.00        | 6.24             | 1.50            | 0.00         |
| 21.00        | 6.02             | 1.38            | 0.45         | 74.00        | 6.24             | 1.50            | 0.00         |
| 22.00        | 6.10             | 1.42            | 0.43         | 75.00        | 6.24             | 1.50            | 0.00         |
| 23.00        | 6.17             | 1.46            | 0.42         | 76.00        | 6.24             | 1.50            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>1.50</b>     | 0.40         | 77.00        | 6.24             | 1.50            | 0.00         |
| 25.00        | 6.24             | 1.50            | 0.04         | 78.00        | 6.24             | 1.50            | 0.00         |
| 26.00        | 6.24             | 1.50            | 0.00         | 79.00        | 6.24             | 1.50            | 0.00         |
| 27.00        | 6.24             | 1.50            | 0.00         | 80.00        | 6.24             | 1.50            | 0.00         |
| 28.00        | 6.24             | 1.50            | 0.00         | 81.00        | 6.24             | 1.50            | 0.00         |
| 29.00        | 6.24             | 1.50            | 0.00         | 82.00        | 6.24             | 1.50            | 0.00         |
| 30.00        | 6.24             | 1.50            | 0.00         | 83.00        | 6.24             | 1.50            | 0.00         |
| 31.00        | 6.24             | 1.50            | 0.00         | 84.00        | 6.24             | 1.50            | 0.00         |
| 32.00        | 6.24             | 1.50            | 0.00         | 85.00        | 6.24             | 1.50            | 0.00         |
| 33.00        | 6.24             | 1.50            | 0.00         | 86.00        | 6.24             | 1.50            | 0.00         |
| 34.00        | 6.24             | 1.50            | 0.00         | 87.00        | 6.24             | 1.50            | 0.00         |
| 35.00        | 6.24             | 1.50            | 0.00         | 88.00        | 6.24             | 1.50            | 0.00         |
| 36.00        | 6.24             | 1.50            | 0.00         | 89.00        | 6.24             | 1.50            | 0.00         |
| 37.00        | 6.24             | 1.50            | 0.00         | 90.00        | 6.24             | 1.50            | 0.00         |
| 38.00        | 6.24             | 1.50            | 0.00         | 91.00        | 6.24             | 1.50            | 0.00         |
| 39.00        | 6.24             | 1.50            | 0.00         | 92.00        | 6.24             | 1.50            | 0.00         |
| 40.00        | 6.24             | 1.50            | 0.00         | 93.00        | 6.24             | 1.50            | 0.00         |
| 41.00        | 6.24             | 1.50            | 0.00         | 94.00        | 6.24             | 1.50            | 0.00         |
| 42.00        | 6.24             | 1.50            | 0.00         | 95.00        | 6.24             | 1.50            | 0.00         |
| 43.00        | 6.24             | 1.50            | 0.00         | 96.00        | 6.24             | 1.50            | 0.00         |
| 44.00        | 6.24             | 1.50            | 0.00         | 97.00        | 6.24             | 1.50            | 0.00         |
| 45.00        | 6.24             | 1.50            | 0.00         | 98.00        | 6.24             | 1.50            | 0.00         |
| 46.00        | 6.24             | 1.50            | 0.00         | 99.00        | 6.24             | 1.50            | 0.00         |
| 47.00        | 6.24             | 1.50            | 0.00         | 100.00       | 6.24             | 1.50            | 0.00         |
| 48.00        | 6.24             | 1.50            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 1.50            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 1.50            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 1.50            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 1.50            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment S4b: Subcatchment 4b**

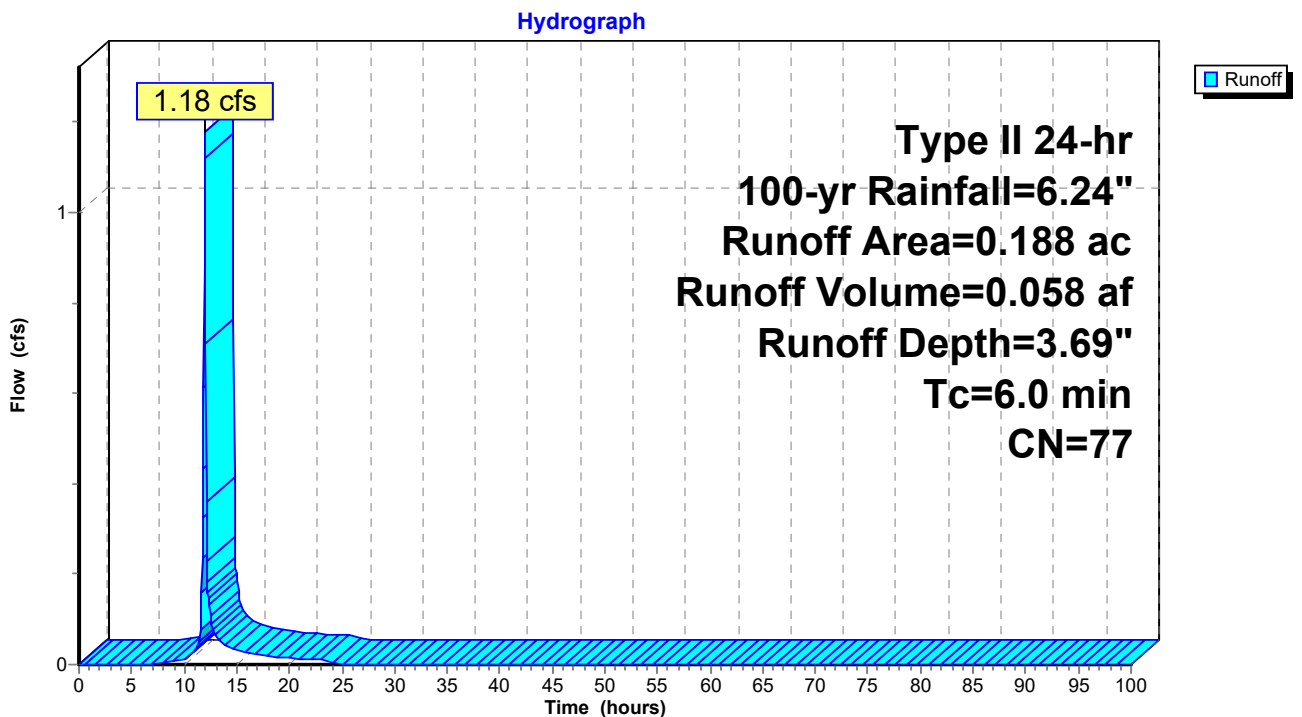
Runoff = 1.18 cfs @ 11.97 hrs, Volume= 0.058 af, Depth= 3.69"  
 Routed to Link AP3 : Analysis Point 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.114     | 77 | Woods, Good, HSG D        |
| 0.074     | 78 | Meadow, non-grazed, HSG D |
| 0.188     | 77 | Weighted Average          |
| 0.188     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Hydro Flow |

**Subcatchment S4b: Subcatchment 4b**



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 6.24             | 3.69            | 0.00         |
| 1.00         | 0.07             | 0.00            | 0.00         | 54.00        | 6.24             | 3.69            | 0.00         |
| 2.00         | 0.14             | 0.00            | 0.00         | 55.00        | 6.24             | 3.69            | 0.00         |
| 3.00         | 0.22             | 0.00            | 0.00         | 56.00        | 6.24             | 3.69            | 0.00         |
| 4.00         | 0.30             | 0.00            | 0.00         | 57.00        | 6.24             | 3.69            | 0.00         |
| 5.00         | 0.39             | 0.00            | 0.00         | 58.00        | 6.24             | 3.69            | 0.00         |
| 6.00         | 0.50             | 0.00            | 0.00         | 59.00        | 6.24             | 3.69            | 0.00         |
| 7.00         | 0.62             | 0.00            | 0.00         | 60.00        | 6.24             | 3.69            | 0.00         |
| 8.00         | 0.75             | 0.01            | 0.00         | 61.00        | 6.24             | 3.69            | 0.00         |
| 9.00         | 0.92             | 0.03            | 0.01         | 62.00        | 6.24             | 3.69            | 0.00         |
| 10.00        | 1.13             | 0.08            | 0.01         | 63.00        | 6.24             | 3.69            | 0.00         |
| 11.00        | 1.47             | 0.20            | <b>0.03</b>  | 64.00        | 6.24             | 3.69            | 0.00         |
| 12.00        | 4.14             | 1.92            | <b>1.12</b>  | 65.00        | 6.24             | 3.69            | 0.00         |
| 13.00        | 4.82             | 2.47            | 0.06         | 66.00        | 6.24             | 3.69            | 0.00         |
| 14.00        | 5.12             | 2.72            | 0.04         | 67.00        | 6.24             | 3.69            | 0.00         |
| 15.00        | 5.33             | 2.90            | 0.03         | 68.00        | 6.24             | 3.69            | 0.00         |
| 16.00        | 5.49             | 3.04            | 0.02         | 69.00        | 6.24             | 3.69            | 0.00         |
| 17.00        | 5.63             | 3.16            | 0.02         | 70.00        | 6.24             | 3.69            | 0.00         |
| 18.00        | 5.75             | 3.26            | 0.02         | 71.00        | 6.24             | 3.69            | 0.00         |
| 19.00        | 5.85             | 3.35            | 0.02         | 72.00        | 6.24             | 3.69            | 0.00         |
| 20.00        | 5.94             | 3.43            | 0.01         | 73.00        | 6.24             | 3.69            | 0.00         |
| 21.00        | 6.02             | 3.50            | 0.01         | 74.00        | 6.24             | 3.69            | 0.00         |
| 22.00        | 6.10             | 3.56            | 0.01         | 75.00        | 6.24             | 3.69            | 0.00         |
| 23.00        | 6.17             | 3.63            | 0.01         | 76.00        | 6.24             | 3.69            | 0.00         |
| 24.00        | <b>6.24</b>      | <b>3.69</b>     | 0.01         | 77.00        | 6.24             | 3.69            | 0.00         |
| 25.00        | 6.24             | 3.69            | 0.00         | 78.00        | 6.24             | 3.69            | 0.00         |
| 26.00        | 6.24             | 3.69            | 0.00         | 79.00        | 6.24             | 3.69            | 0.00         |
| 27.00        | 6.24             | 3.69            | 0.00         | 80.00        | 6.24             | 3.69            | 0.00         |
| 28.00        | 6.24             | 3.69            | 0.00         | 81.00        | 6.24             | 3.69            | 0.00         |
| 29.00        | 6.24             | 3.69            | 0.00         | 82.00        | 6.24             | 3.69            | 0.00         |
| 30.00        | 6.24             | 3.69            | 0.00         | 83.00        | 6.24             | 3.69            | 0.00         |
| 31.00        | 6.24             | 3.69            | 0.00         | 84.00        | 6.24             | 3.69            | 0.00         |
| 32.00        | 6.24             | 3.69            | 0.00         | 85.00        | 6.24             | 3.69            | 0.00         |
| 33.00        | 6.24             | 3.69            | 0.00         | 86.00        | 6.24             | 3.69            | 0.00         |
| 34.00        | 6.24             | 3.69            | 0.00         | 87.00        | 6.24             | 3.69            | 0.00         |
| 35.00        | 6.24             | 3.69            | 0.00         | 88.00        | 6.24             | 3.69            | 0.00         |
| 36.00        | 6.24             | 3.69            | 0.00         | 89.00        | 6.24             | 3.69            | 0.00         |
| 37.00        | 6.24             | 3.69            | 0.00         | 90.00        | 6.24             | 3.69            | 0.00         |
| 38.00        | 6.24             | 3.69            | 0.00         | 91.00        | 6.24             | 3.69            | 0.00         |
| 39.00        | 6.24             | 3.69            | 0.00         | 92.00        | 6.24             | 3.69            | 0.00         |
| 40.00        | 6.24             | 3.69            | 0.00         | 93.00        | 6.24             | 3.69            | 0.00         |
| 41.00        | 6.24             | 3.69            | 0.00         | 94.00        | 6.24             | 3.69            | 0.00         |
| 42.00        | 6.24             | 3.69            | 0.00         | 95.00        | 6.24             | 3.69            | 0.00         |
| 43.00        | 6.24             | 3.69            | 0.00         | 96.00        | 6.24             | 3.69            | 0.00         |
| 44.00        | 6.24             | 3.69            | 0.00         | 97.00        | 6.24             | 3.69            | 0.00         |
| 45.00        | 6.24             | 3.69            | 0.00         | 98.00        | 6.24             | 3.69            | 0.00         |
| 46.00        | 6.24             | 3.69            | 0.00         | 99.00        | 6.24             | 3.69            | 0.00         |
| 47.00        | 6.24             | 3.69            | 0.00         | 100.00       | 6.24             | 3.69            | 0.00         |
| 48.00        | 6.24             | 3.69            | 0.00         |              |                  |                 |              |
| 49.00        | 6.24             | 3.69            | 0.00         |              |                  |                 |              |
| 50.00        | 6.24             | 3.69            | 0.00         |              |                  |                 |              |
| 51.00        | 6.24             | 3.69            | 0.00         |              |                  |                 |              |
| 52.00        | 6.24             | 3.69            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S5a: Subcatchment 5a**

Runoff = 28.94 cfs @ 12.10 hrs, Volume= 2.082 af, Depth= 4.53"

Routed to Reach R7 : Proposed RRv Swale

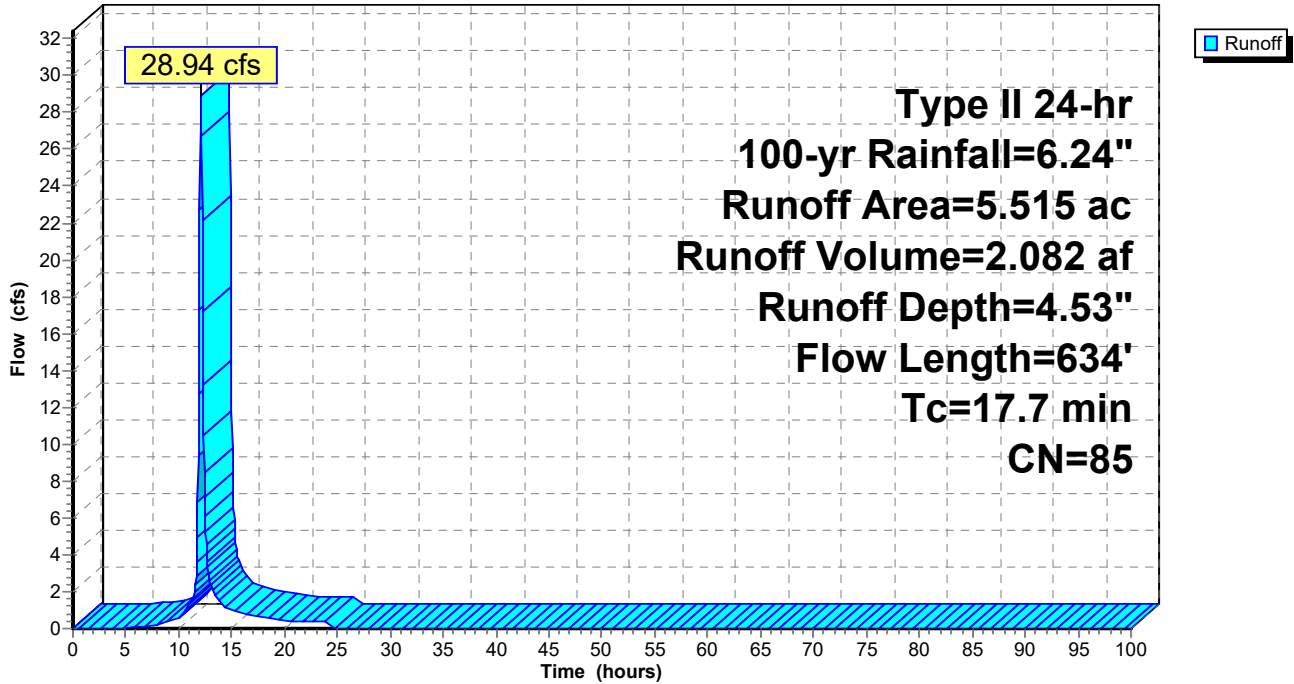
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.428     | 78 | Meadow, non-grazed, HSG D |
| 0.591     | 98 | Paved parking, HSG D      |
| 0.921     | 98 | Roofs, HSG A              |
| 0.035     | 98 | Roofs, HSG D              |
| 1.479     | 98 | Paved parking, HSG A      |
| 1.207     | 94 | Fallow, bare soil, HSG D  |
| 0.830     | 30 | Meadow, non-grazed, HSG A |
| 0.024     | 30 | Woods, Good, HSG A        |
| 5.515     | 85 | Weighted Average          |
| 2.489     |    | 45.13% Pervious Area      |
| 3.026     |    | 54.87% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 4.2      | 22            | 0.0080        | 0.09              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                           |
| 0.6      | 24            | 0.0080        | 0.64              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 3.9      | 53            | 0.0080        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.4      | 22            | 0.0080        | 0.89              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 7.9      | 473           | 0.0100        | 1.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.2      | 21            | 0.0100        | 2.03              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps                  |
| 0.5      | 19            | 0.0070        | 0.59              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 17.7     | 634           | Total         |                   |                |   |

### Subcatchment S5a: Subcatchment 5a

Hydrograph



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S5a: Subcatchment 5a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 4.53               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 4.53               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 4.53               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 4.53               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 4.53               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.01            | 58.00           | 6.24                | 4.53               | 0.00            |
| 6.00            | 0.50                | 0.01               | 0.07            | 59.00           | 6.24                | 4.53               | 0.00            |
| 7.00            | 0.62                | 0.03               | 0.15            | 60.00           | 6.24                | 4.53               | 0.00            |
| 8.00            | 0.75                | 0.07               | 0.23            | 61.00           | 6.24                | 4.53               | 0.00            |
| 9.00            | 0.92                | 0.14               | 0.41            | 62.00           | 6.24                | 4.53               | 0.00            |
| 10.00           | 1.13                | 0.24               | 0.61            | 63.00           | 6.24                | 4.53               | 0.00            |
| 11.00           | 1.47                | 0.43               | 1.26            | 64.00           | 6.24                | 4.53               | 0.00            |
| 12.00           | 4.14                | 2.58               | <b>22.69</b>    | 65.00           | 6.24                | 4.53               | 0.00            |
| 13.00           | 4.82                | 3.20               | <b>2.43</b>     | 66.00           | 6.24                | 4.53               | 0.00            |
| 14.00           | 5.12                | 3.48               | 1.37            | 67.00           | 6.24                | 4.53               | 0.00            |
| 15.00           | 5.33                | 3.67               | 1.03            | 68.00           | 6.24                | 4.53               | 0.00            |
| 16.00           | 5.49                | 3.82               | 0.81            | 69.00           | 6.24                | 4.53               | 0.00            |
| 17.00           | 5.63                | 3.95               | 0.69            | 70.00           | 6.24                | 4.53               | 0.00            |
| 18.00           | 5.75                | 4.06               | 0.61            | 71.00           | 6.24                | 4.53               | 0.00            |
| 19.00           | 5.85                | 4.16               | 0.53            | 72.00           | 6.24                | 4.53               | 0.00            |
| 20.00           | 5.94                | 4.25               | 0.45            | 73.00           | 6.24                | 4.53               | 0.00            |
| 21.00           | 6.02                | 4.32               | 0.41            | 74.00           | 6.24                | 4.53               | 0.00            |
| 22.00           | 6.10                | 4.39               | 0.40            | 75.00           | 6.24                | 4.53               | 0.00            |
| 23.00           | 6.17                | 4.46               | 0.38            | 76.00           | 6.24                | 4.53               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>4.53</b>        | 0.37            | 77.00           | 6.24                | 4.53               | 0.00            |
| 25.00           | 6.24                | 4.53               | 0.00            | 78.00           | 6.24                | 4.53               | 0.00            |
| 26.00           | 6.24                | 4.53               | 0.00            | 79.00           | 6.24                | 4.53               | 0.00            |
| 27.00           | 6.24                | 4.53               | 0.00            | 80.00           | 6.24                | 4.53               | 0.00            |
| 28.00           | 6.24                | 4.53               | 0.00            | 81.00           | 6.24                | 4.53               | 0.00            |
| 29.00           | 6.24                | 4.53               | 0.00            | 82.00           | 6.24                | 4.53               | 0.00            |
| 30.00           | 6.24                | 4.53               | 0.00            | 83.00           | 6.24                | 4.53               | 0.00            |
| 31.00           | 6.24                | 4.53               | 0.00            | 84.00           | 6.24                | 4.53               | 0.00            |
| 32.00           | 6.24                | 4.53               | 0.00            | 85.00           | 6.24                | 4.53               | 0.00            |
| 33.00           | 6.24                | 4.53               | 0.00            | 86.00           | 6.24                | 4.53               | 0.00            |
| 34.00           | 6.24                | 4.53               | 0.00            | 87.00           | 6.24                | 4.53               | 0.00            |
| 35.00           | 6.24                | 4.53               | 0.00            | 88.00           | 6.24                | 4.53               | 0.00            |
| 36.00           | 6.24                | 4.53               | 0.00            | 89.00           | 6.24                | 4.53               | 0.00            |
| 37.00           | 6.24                | 4.53               | 0.00            | 90.00           | 6.24                | 4.53               | 0.00            |
| 38.00           | 6.24                | 4.53               | 0.00            | 91.00           | 6.24                | 4.53               | 0.00            |
| 39.00           | 6.24                | 4.53               | 0.00            | 92.00           | 6.24                | 4.53               | 0.00            |
| 40.00           | 6.24                | 4.53               | 0.00            | 93.00           | 6.24                | 4.53               | 0.00            |
| 41.00           | 6.24                | 4.53               | 0.00            | 94.00           | 6.24                | 4.53               | 0.00            |
| 42.00           | 6.24                | 4.53               | 0.00            | 95.00           | 6.24                | 4.53               | 0.00            |
| 43.00           | 6.24                | 4.53               | 0.00            | 96.00           | 6.24                | 4.53               | 0.00            |
| 44.00           | 6.24                | 4.53               | 0.00            | 97.00           | 6.24                | 4.53               | 0.00            |
| 45.00           | 6.24                | 4.53               | 0.00            | 98.00           | 6.24                | 4.53               | 0.00            |
| 46.00           | 6.24                | 4.53               | 0.00            | 99.00           | 6.24                | 4.53               | 0.00            |
| 47.00           | 6.24                | 4.53               | 0.00            | 100.00          | 6.24                | 4.53               | 0.00            |
| 48.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 4.53               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S5b: Subcatchment 5b**

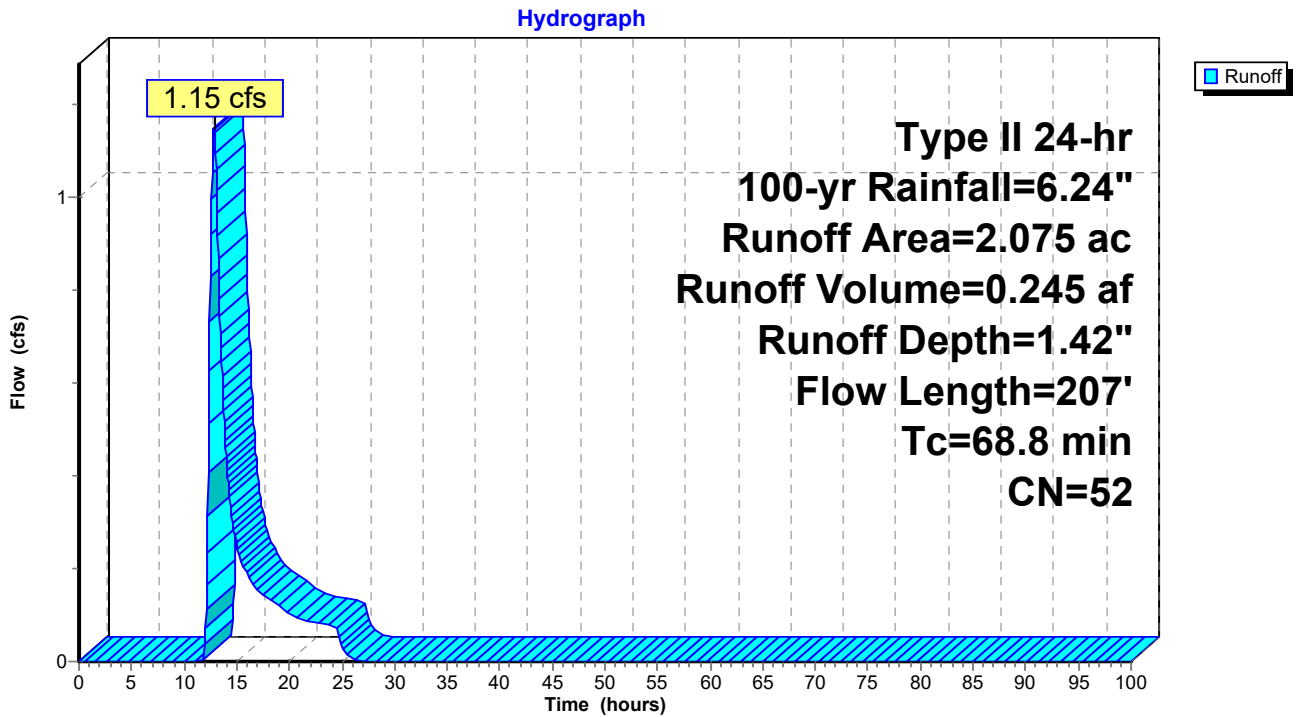
Runoff = 1.15 cfs @ 12.83 hrs, Volume= 0.245 af, Depth= 1.42"  
 Routed to Reach R8 : Proposed RRv Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.448     | 30 | Woods, Good, HSG A        |
| 0.120     | 98 | Roofs, HSG A              |
| 0.566     | 98 | Paved parking, HSG A      |
| 0.941     | 30 | Meadow, non-grazed, HSG A |
| 2.075     | 52 | Weighted Average          |
| 1.389     |    | 66.94% Pervious Area      |
| 0.686     |    | 33.06% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 22.3     | 46            | 0.0200        | 0.03              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 44.2     | 54            | 0.0050        | 0.02              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 1.0      | 21            | 0.0050        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.7      | 33            | 0.0130        | 0.80              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.6      | 53            | 0.0385        | 1.37              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 68.8     | 207           | Total         |                   |                |   |

### Subcatchment S5b: Subcatchment 5b



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S5b: Subcatchment 5b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 1.42               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 1.42               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 1.42               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 1.42               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 1.42               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 1.42               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 1.42               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 1.42               | 0.00            |
| 8.00            | 0.75                | 0.00               | 0.00            | 61.00           | 6.24                | 1.42               | 0.00            |
| 9.00            | 0.92                | 0.00               | 0.00            | 62.00           | 6.24                | 1.42               | 0.00            |
| 10.00           | 1.13                | 0.00               | 0.00            | 63.00           | 6.24                | 1.42               | 0.00            |
| 11.00           | 1.47                | 0.00               | 0.00            | 64.00           | 6.24                | 1.42               | 0.00            |
| 12.00           | 4.14                | 0.46               | <b>0.04</b>     | 65.00           | 6.24                | 1.42               | 0.00            |
| 13.00           | 4.82                | 0.72               | <b>1.10</b>     | 66.00           | 6.24                | 1.42               | 0.00            |
| 14.00           | 5.12                | 0.86               | 0.44            | 67.00           | 6.24                | 1.42               | 0.00            |
| 15.00           | 5.33                | 0.95               | 0.25            | 68.00           | 6.24                | 1.42               | 0.00            |
| 16.00           | 5.49                | 1.03               | 0.19            | 69.00           | 6.24                | 1.42               | 0.00            |
| 17.00           | 5.63                | 1.10               | 0.15            | 70.00           | 6.24                | 1.42               | 0.00            |
| 18.00           | 5.75                | 1.16               | 0.13            | 71.00           | 6.24                | 1.42               | 0.00            |
| 19.00           | 5.85                | 1.21               | 0.12            | 72.00           | 6.24                | 1.42               | 0.00            |
| 20.00           | 5.94                | 1.26               | 0.10            | 73.00           | 6.24                | 1.42               | 0.00            |
| 21.00           | 6.02                | 1.30               | 0.09            | 74.00           | 6.24                | 1.42               | 0.00            |
| 22.00           | 6.10                | 1.34               | 0.09            | 75.00           | 6.24                | 1.42               | 0.00            |
| 23.00           | 6.17                | 1.38               | 0.08            | 76.00           | 6.24                | 1.42               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>1.42</b>        | 0.08            | 77.00           | 6.24                | 1.42               | 0.00            |
| 25.00           | 6.24                | 1.42               | 0.04            | 78.00           | 6.24                | 1.42               | 0.00            |
| 26.00           | 6.24                | 1.42               | 0.00            | 79.00           | 6.24                | 1.42               | 0.00            |
| 27.00           | 6.24                | 1.42               | 0.00            | 80.00           | 6.24                | 1.42               | 0.00            |
| 28.00           | 6.24                | 1.42               | 0.00            | 81.00           | 6.24                | 1.42               | 0.00            |
| 29.00           | 6.24                | 1.42               | 0.00            | 82.00           | 6.24                | 1.42               | 0.00            |
| 30.00           | 6.24                | 1.42               | 0.00            | 83.00           | 6.24                | 1.42               | 0.00            |
| 31.00           | 6.24                | 1.42               | 0.00            | 84.00           | 6.24                | 1.42               | 0.00            |
| 32.00           | 6.24                | 1.42               | 0.00            | 85.00           | 6.24                | 1.42               | 0.00            |
| 33.00           | 6.24                | 1.42               | 0.00            | 86.00           | 6.24                | 1.42               | 0.00            |
| 34.00           | 6.24                | 1.42               | 0.00            | 87.00           | 6.24                | 1.42               | 0.00            |
| 35.00           | 6.24                | 1.42               | 0.00            | 88.00           | 6.24                | 1.42               | 0.00            |
| 36.00           | 6.24                | 1.42               | 0.00            | 89.00           | 6.24                | 1.42               | 0.00            |
| 37.00           | 6.24                | 1.42               | 0.00            | 90.00           | 6.24                | 1.42               | 0.00            |
| 38.00           | 6.24                | 1.42               | 0.00            | 91.00           | 6.24                | 1.42               | 0.00            |
| 39.00           | 6.24                | 1.42               | 0.00            | 92.00           | 6.24                | 1.42               | 0.00            |
| 40.00           | 6.24                | 1.42               | 0.00            | 93.00           | 6.24                | 1.42               | 0.00            |
| 41.00           | 6.24                | 1.42               | 0.00            | 94.00           | 6.24                | 1.42               | 0.00            |
| 42.00           | 6.24                | 1.42               | 0.00            | 95.00           | 6.24                | 1.42               | 0.00            |
| 43.00           | 6.24                | 1.42               | 0.00            | 96.00           | 6.24                | 1.42               | 0.00            |
| 44.00           | 6.24                | 1.42               | 0.00            | 97.00           | 6.24                | 1.42               | 0.00            |
| 45.00           | 6.24                | 1.42               | 0.00            | 98.00           | 6.24                | 1.42               | 0.00            |
| 46.00           | 6.24                | 1.42               | 0.00            | 99.00           | 6.24                | 1.42               | 0.00            |
| 47.00           | 6.24                | 1.42               | 0.00            | 100.00          | 6.24                | 1.42               | 0.00            |
| 48.00           | 6.24                | 1.42               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 1.42               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 1.42               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 1.42               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 1.42               | 0.00            |                 |                     |                    |                 |



**Summary for Subcatchment S7: Subcatchment 7**

Runoff = 4.49 cfs @ 12.16 hrs, Volume= 0.411 af, Depth= 1.26"

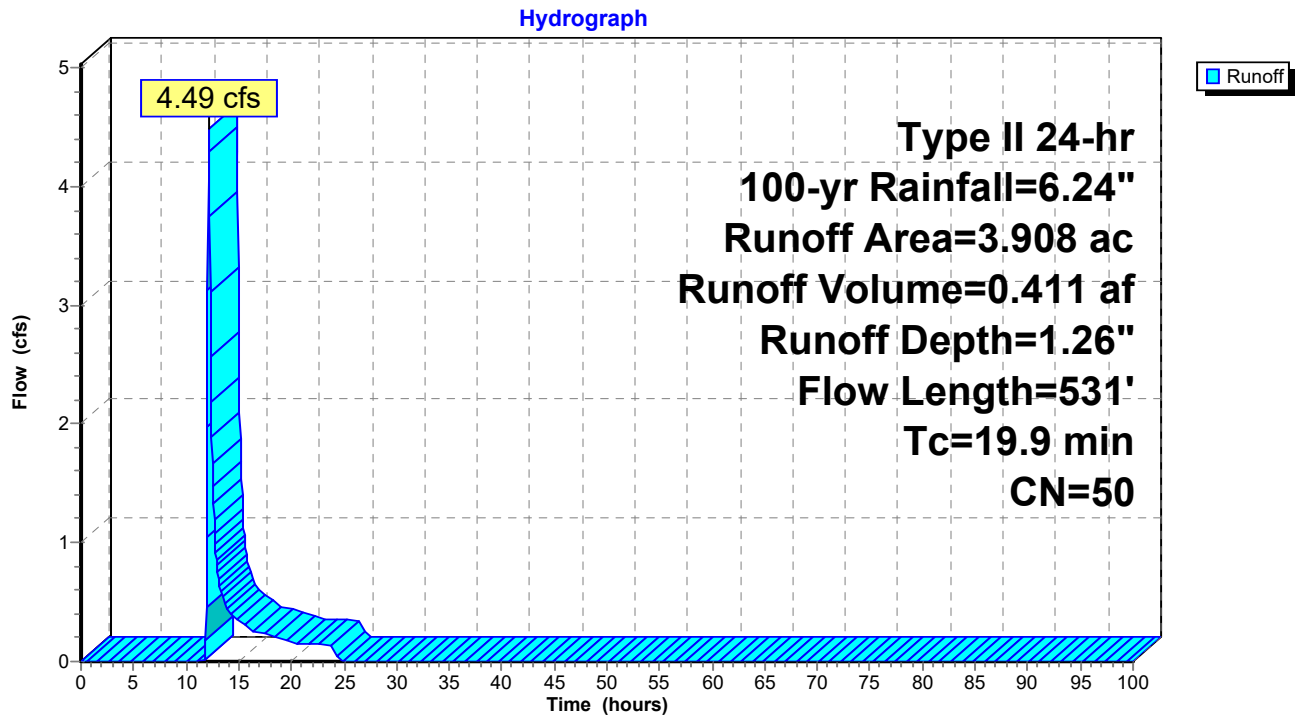
Routed to Link AP6 : Analysis Point 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-yr Rainfall=6.24"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 2.301     | 30 | Meadow, non-grazed, HSG A |
| 1.607     | 78 | Meadow, non-grazed, HSG D |
| 3.908     | 50 | Weighted Average          |
| 3.908     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.8      | 12            | 0.0195        | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 8.6      | 88            | 0.0209        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0209        | 1.01              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.2      | 150           | 0.0126        | 0.79              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.8      | 50            | 0.0221        | 1.04              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 91            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.2      | 84            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 19.9     | 531           | Total         |                   |                |   |

### Subcatchment S7: Subcatchment 7



**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

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**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | 0.00               | 0.00            | 53.00           | 6.24                | 1.26               | 0.00            |
| 1.00            | 0.07                | 0.00               | 0.00            | 54.00           | 6.24                | 1.26               | 0.00            |
| 2.00            | 0.14                | 0.00               | 0.00            | 55.00           | 6.24                | 1.26               | 0.00            |
| 3.00            | 0.22                | 0.00               | 0.00            | 56.00           | 6.24                | 1.26               | 0.00            |
| 4.00            | 0.30                | 0.00               | 0.00            | 57.00           | 6.24                | 1.26               | 0.00            |
| 5.00            | 0.39                | 0.00               | 0.00            | 58.00           | 6.24                | 1.26               | 0.00            |
| 6.00            | 0.50                | 0.00               | 0.00            | 59.00           | 6.24                | 1.26               | 0.00            |
| 7.00            | 0.62                | 0.00               | 0.00            | 60.00           | 6.24                | 1.26               | 0.00            |
| 8.00            | 0.75                | 0.00               | 0.00            | 61.00           | 6.24                | 1.26               | 0.00            |
| 9.00            | 0.92                | 0.00               | 0.00            | 62.00           | 6.24                | 1.26               | 0.00            |
| 10.00           | 1.13                | 0.00               | 0.00            | 63.00           | 6.24                | 1.26               | 0.00            |
| 11.00           | 1.47                | 0.00               | 0.00            | 64.00           | 6.24                | 1.26               | 0.00            |
| 12.00           | 4.14                | 0.38               | <b>1.98</b>     | 65.00           | 6.24                | 1.26               | 0.00            |
| 13.00           | 4.82                | 0.62               | <b>0.74</b>     | 66.00           | 6.24                | 1.26               | 0.00            |
| 14.00           | 5.12                | 0.74               | 0.44            | 67.00           | 6.24                | 1.26               | 0.00            |
| 15.00           | 5.33                | 0.83               | 0.34            | 68.00           | 6.24                | 1.26               | 0.00            |
| 16.00           | 5.49                | 0.90               | 0.28            | 69.00           | 6.24                | 1.26               | 0.00            |
| 17.00           | 5.63                | 0.97               | 0.24            | 70.00           | 6.24                | 1.26               | 0.00            |
| 18.00           | 5.75                | 1.02               | 0.22            | 71.00           | 6.24                | 1.26               | 0.00            |
| 19.00           | 5.85                | 1.07               | 0.19            | 72.00           | 6.24                | 1.26               | 0.00            |
| 20.00           | 5.94                | 1.11               | 0.16            | 73.00           | 6.24                | 1.26               | 0.00            |
| 21.00           | 6.02                | 1.15               | 0.15            | 74.00           | 6.24                | 1.26               | 0.00            |
| 22.00           | 6.10                | 1.19               | 0.15            | 75.00           | 6.24                | 1.26               | 0.00            |
| 23.00           | 6.17                | 1.23               | 0.14            | 76.00           | 6.24                | 1.26               | 0.00            |
| 24.00           | <b>6.24</b>         | <b>1.26</b>        | 0.14            | 77.00           | 6.24                | 1.26               | 0.00            |
| 25.00           | 6.24                | 1.26               | 0.00            | 78.00           | 6.24                | 1.26               | 0.00            |
| 26.00           | 6.24                | 1.26               | 0.00            | 79.00           | 6.24                | 1.26               | 0.00            |
| 27.00           | 6.24                | 1.26               | 0.00            | 80.00           | 6.24                | 1.26               | 0.00            |
| 28.00           | 6.24                | 1.26               | 0.00            | 81.00           | 6.24                | 1.26               | 0.00            |
| 29.00           | 6.24                | 1.26               | 0.00            | 82.00           | 6.24                | 1.26               | 0.00            |
| 30.00           | 6.24                | 1.26               | 0.00            | 83.00           | 6.24                | 1.26               | 0.00            |
| 31.00           | 6.24                | 1.26               | 0.00            | 84.00           | 6.24                | 1.26               | 0.00            |
| 32.00           | 6.24                | 1.26               | 0.00            | 85.00           | 6.24                | 1.26               | 0.00            |
| 33.00           | 6.24                | 1.26               | 0.00            | 86.00           | 6.24                | 1.26               | 0.00            |
| 34.00           | 6.24                | 1.26               | 0.00            | 87.00           | 6.24                | 1.26               | 0.00            |
| 35.00           | 6.24                | 1.26               | 0.00            | 88.00           | 6.24                | 1.26               | 0.00            |
| 36.00           | 6.24                | 1.26               | 0.00            | 89.00           | 6.24                | 1.26               | 0.00            |
| 37.00           | 6.24                | 1.26               | 0.00            | 90.00           | 6.24                | 1.26               | 0.00            |
| 38.00           | 6.24                | 1.26               | 0.00            | 91.00           | 6.24                | 1.26               | 0.00            |
| 39.00           | 6.24                | 1.26               | 0.00            | 92.00           | 6.24                | 1.26               | 0.00            |
| 40.00           | 6.24                | 1.26               | 0.00            | 93.00           | 6.24                | 1.26               | 0.00            |
| 41.00           | 6.24                | 1.26               | 0.00            | 94.00           | 6.24                | 1.26               | 0.00            |
| 42.00           | 6.24                | 1.26               | 0.00            | 95.00           | 6.24                | 1.26               | 0.00            |
| 43.00           | 6.24                | 1.26               | 0.00            | 96.00           | 6.24                | 1.26               | 0.00            |
| 44.00           | 6.24                | 1.26               | 0.00            | 97.00           | 6.24                | 1.26               | 0.00            |
| 45.00           | 6.24                | 1.26               | 0.00            | 98.00           | 6.24                | 1.26               | 0.00            |
| 46.00           | 6.24                | 1.26               | 0.00            | 99.00           | 6.24                | 1.26               | 0.00            |
| 47.00           | 6.24                | 1.26               | 0.00            | 100.00          | 6.24                | 1.26               | 0.00            |
| 48.00           | 6.24                | 1.26               | 0.00            |                 |                     |                    |                 |
| 49.00           | 6.24                | 1.26               | 0.00            |                 |                     |                    |                 |
| 50.00           | 6.24                | 1.26               | 0.00            |                 |                     |                    |                 |
| 51.00           | 6.24                | 1.26               | 0.00            |                 |                     |                    |                 |
| 52.00           | 6.24                | 1.26               | 0.00            |                 |                     |                    |                 |

### Summary for Reach R10: 10" Culvert Pond Discharge

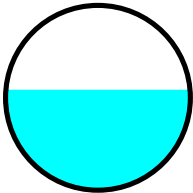
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 4.33" for 100-yr event  
Inflow = 1.51 cfs @ 12.43 hrs, Volume= 0.469 af  
Outflow = 1.51 cfs @ 12.43 hrs, Volume= 0.469 af, Atten= 0%, Lag= 0.0 min  
Routed to Link AP5 : Analysis Point 5

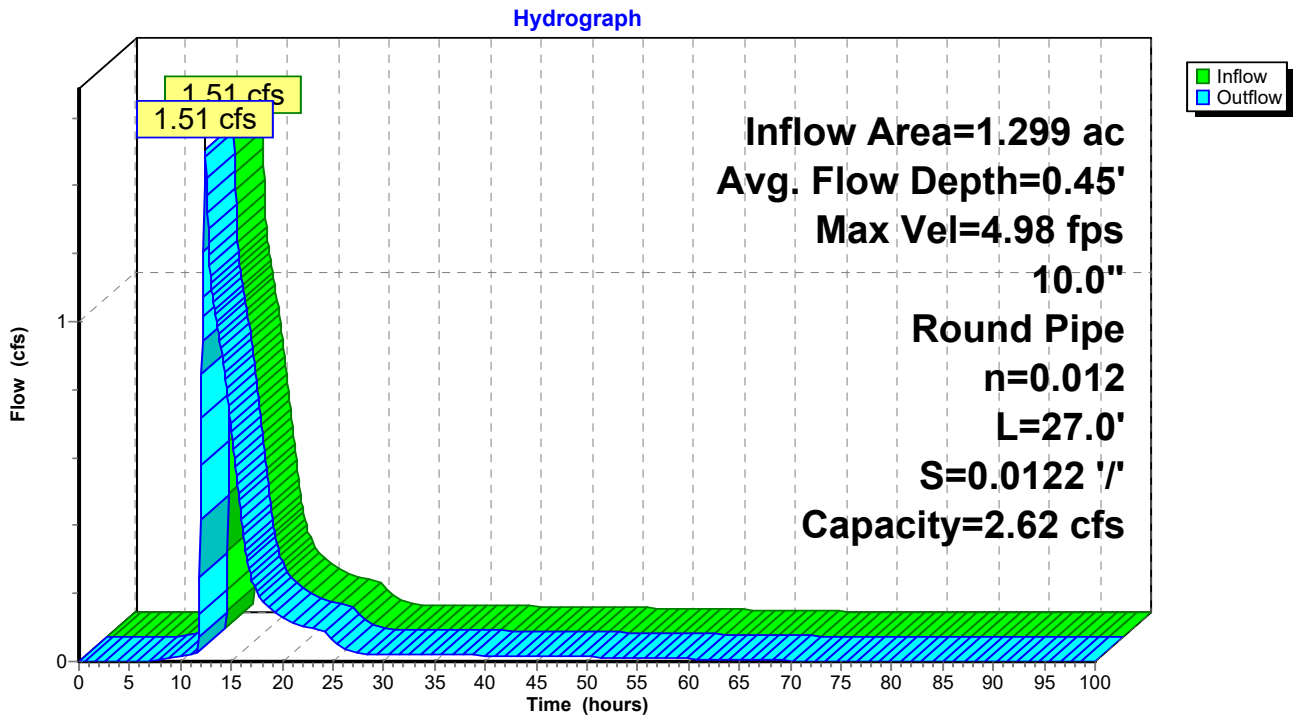
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 4.98 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.27 fps, Avg. Travel Time= 0.4 min

Peak Storage= 8 cf @ 12.43 hrs  
Average Depth at Peak Storage= 0.45' , Surface Width= 0.83'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.62 cfs

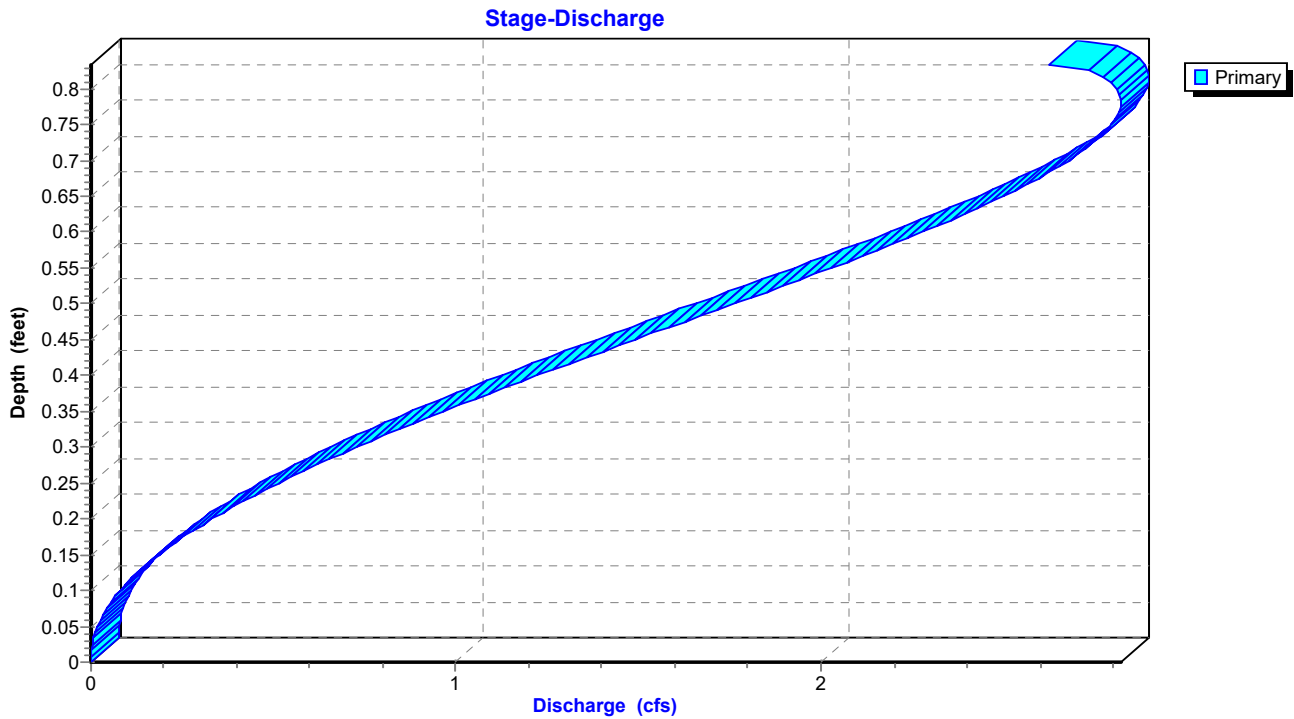
10.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 27.0' Slope= 0.0122 '/'  
Inlet Invert= 329.33', Outlet Invert= 329.00'



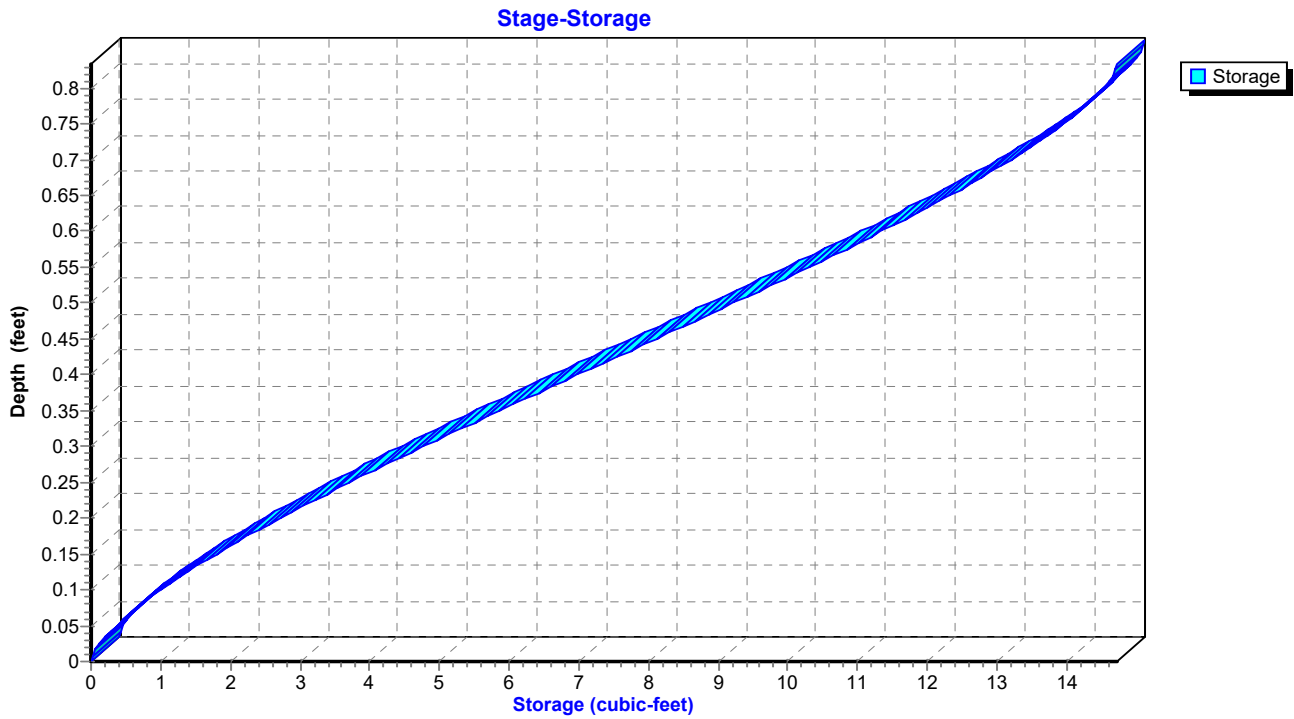
Reach R10: 10" Culvert Pond Discharge



Reach R10: 10" Culvert Pond Discharge



### Reach R10: 10" Culvert Pond Discharge



**Hydrograph for Reach R10: 10" Culvert Pond Discharge**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 329.33              | 0.00             |
| 2.50            | 0.00            | 0                       | 329.33              | 0.00             |
| 5.00            | 0.00            | 0                       | 329.33              | 0.00             |
| 7.50            | 0.00            | 0                       | 329.35              | 0.00             |
| 10.00           | <b>0.01</b>     | <b>0</b>                | <b>329.37</b>       | <b>0.01</b>      |
| 12.50           | <b>1.47</b>     | <b>8</b>                | <b>329.78</b>       | <b>1.47</b>      |
| 15.00           | 0.67            | 4                       | 329.62              | 0.67             |
| 17.50           | 0.20            | 2                       | 329.49              | 0.20             |
| 20.00           | 0.13            | 1                       | 329.46              | 0.13             |
| 22.50           | 0.10            | 1                       | 329.44              | 0.10             |
| 25.00           | 0.07            | 1                       | 329.42              | 0.07             |
| 27.50           | 0.03            | 0                       | 329.39              | 0.03             |
| 30.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 32.50           | 0.02            | 0                       | 329.38              | 0.02             |
| 35.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 37.50           | 0.02            | 0                       | 329.38              | 0.02             |
| 40.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 42.50           | 0.02            | 0                       | 329.38              | 0.02             |
| 45.00           | 0.02            | 0                       | 329.38              | 0.02             |
| 47.50           | 0.01            | 0                       | 329.37              | 0.01             |
| 50.00           | 0.01            | 0                       | 329.37              | 0.01             |
| 52.50           | 0.01            | 0                       | 329.37              | 0.01             |
| 55.00           | 0.01            | 0                       | 329.37              | 0.01             |
| 57.50           | 0.01            | 0                       | 329.37              | 0.01             |
| 60.00           | 0.01            | 0                       | 329.36              | 0.01             |
| 62.50           | 0.01            | 0                       | 329.36              | 0.01             |
| 65.00           | 0.01            | 0                       | 329.36              | 0.01             |
| 67.50           | 0.00            | 0                       | 329.35              | 0.00             |
| 70.00           | 0.00            | 0                       | 329.35              | 0.00             |
| 72.50           | 0.00            | 0                       | 329.35              | 0.00             |
| 75.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 77.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 80.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 82.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 85.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 87.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 90.00           | 0.00            | 0                       | 329.34              | 0.00             |
| 92.50           | 0.00            | 0                       | 329.34              | 0.00             |
| 95.00           | 0.00            | 0                       | 329.33              | 0.00             |
| 97.50           | 0.00            | 0                       | 329.33              | 0.00             |
| 100.00          | 0.00            | 0                       | 329.33              | 0.00             |

**Stage-Discharge for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 329.33              | 0.00                 | 0.00               | 329.86              | 5.26                 | 1.92               |
| 329.34              | 0.48                 | 0.00               | 329.87              | 5.28                 | 1.98               |
| 329.35              | 0.76                 | 0.00               | 329.88              | 5.31                 | 2.03               |
| 329.36              | 1.00                 | 0.01               | 329.89              | 5.34                 | 2.08               |
| 329.37              | 1.20                 | 0.01               | 329.90              | 5.36                 | 2.13               |
| 329.38              | 1.39                 | 0.02               | 329.91              | 5.38                 | 2.18               |
| 329.39              | 1.56                 | 0.03               | 329.92              | 5.40                 | 2.23               |
| 329.40              | 1.73                 | 0.04               | 329.93              | 5.42                 | 2.28               |
| 329.41              | 1.88                 | 0.05               | 329.94              | 5.43                 | 2.32               |
| 329.42              | 2.03                 | 0.06               | 329.95              | 5.45                 | 2.37               |
| 329.43              | 2.16                 | 0.08               | 329.96              | 5.46                 | 2.41               |
| 329.44              | 2.30                 | 0.10               | 329.97              | 5.47                 | 2.46               |
| 329.45              | 2.42                 | 0.12               | 329.98              | 5.48                 | 2.50               |
| 329.46              | 2.55                 | 0.14               | 329.99              | 5.48                 | 2.54               |
| 329.47              | 2.66                 | 0.16               | 330.00              | 5.48                 | 2.58               |
| 329.48              | 2.78                 | 0.19               | 330.01              | <b>5.48</b>          | 2.61               |
| 329.49              | 2.89                 | 0.21               | 330.02              | 5.48                 | 2.65               |
| 329.50              | 2.99                 | 0.24               | 330.03              | 5.48                 | 2.68               |
| 329.51              | 3.10                 | 0.27               | 330.04              | 5.47                 | 2.71               |
| 329.52              | 3.20                 | 0.30               | 330.05              | 5.46                 | 2.74               |
| 329.53              | 3.29                 | 0.33               | 330.06              | 5.45                 | 2.76               |
| 329.54              | 3.39                 | 0.37               | 330.07              | 5.43                 | 2.78               |
| 329.55              | 3.48                 | 0.40               | 330.08              | 5.41                 | 2.80               |
| 329.56              | 3.57                 | 0.44               | 330.09              | 5.38                 | 2.81               |
| 329.57              | 3.65                 | 0.47               | 330.10              | 5.35                 | 2.82               |
| 329.58              | 3.73                 | 0.51               | 330.11              | 5.32                 | <b>2.82</b>        |
| 329.59              | 3.81                 | 0.55               | 330.12              | 5.28                 | 2.82               |
| 329.60              | 3.89                 | 0.60               | 330.13              | 5.22                 | 2.81               |
| 329.61              | 3.97                 | 0.64               | 330.14              | 5.16                 | 2.79               |
| 329.62              | 4.04                 | 0.68               | 330.15              | 5.07                 | 2.76               |
| 329.63              | 4.12                 | 0.73               | 330.16              | 4.90                 | 2.67               |
| 329.64              | 4.19                 | 0.77               |                     |                      |                    |
| 329.65              | 4.25                 | 0.82               |                     |                      |                    |
| 329.66              | 4.32                 | 0.87               |                     |                      |                    |
| 329.67              | 4.38                 | 0.92               |                     |                      |                    |
| 329.68              | 4.44                 | 0.97               |                     |                      |                    |
| 329.69              | 4.50                 | 1.02               |                     |                      |                    |
| 329.70              | 4.56                 | 1.07               |                     |                      |                    |
| 329.71              | 4.62                 | 1.12               |                     |                      |                    |
| 329.72              | 4.67                 | 1.17               |                     |                      |                    |
| 329.73              | 4.73                 | 1.22               |                     |                      |                    |
| 329.74              | 4.78                 | 1.28               |                     |                      |                    |
| 329.75              | 4.83                 | 1.33               |                     |                      |                    |
| 329.76              | 4.87                 | 1.38               |                     |                      |                    |
| 329.77              | 4.92                 | 1.44               |                     |                      |                    |
| 329.78              | 4.96                 | 1.49               |                     |                      |                    |
| 329.79              | 5.01                 | 1.55               |                     |                      |                    |
| 329.80              | 5.05                 | 1.60               |                     |                      |                    |
| 329.81              | 5.09                 | 1.65               |                     |                      |                    |
| 329.82              | 5.12                 | 1.71               |                     |                      |                    |
| 329.83              | 5.16                 | 1.76               |                     |                      |                    |
| 329.84              | 5.19                 | 1.82               |                     |                      |                    |
| 329.85              | 5.23                 | 1.87               |                     |                      |                    |



**Stage-Area-Storage for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 329.33              | 0.0                 | 0                       | 329.86              | 0.4                 | 10                      |
| 329.34              | 0.0                 | 0                       | 329.87              | 0.4                 | 10                      |
| 329.35              | 0.0                 | 0                       | 329.88              | 0.4                 | 10                      |
| 329.36              | 0.0                 | 0                       | 329.89              | 0.4                 | 11                      |
| 329.37              | 0.0                 | 0                       | 329.90              | 0.4                 | 11                      |
| 329.38              | 0.0                 | 0                       | 329.91              | 0.4                 | 11                      |
| 329.39              | 0.0                 | 0                       | 329.92              | 0.4                 | 11                      |
| 329.40              | 0.0                 | 1                       | 329.93              | 0.4                 | 11                      |
| 329.41              | 0.0                 | 1                       | 329.94              | 0.4                 | 12                      |
| 329.42              | 0.0                 | 1                       | 329.95              | 0.4                 | 12                      |
| 329.43              | 0.0                 | 1                       | 329.96              | 0.4                 | 12                      |
| 329.44              | 0.0                 | 1                       | 329.97              | 0.4                 | 12                      |
| 329.45              | 0.0                 | 1                       | 329.98              | 0.5                 | 12                      |
| 329.46              | 0.1                 | 1                       | 329.99              | 0.5                 | 13                      |
| 329.47              | 0.1                 | 2                       | 330.00              | 0.5                 | 13                      |
| 329.48              | 0.1                 | 2                       | 330.01              | 0.5                 | 13                      |
| 329.49              | 0.1                 | 2                       | 330.02              | 0.5                 | 13                      |
| 329.50              | 0.1                 | 2                       | 330.03              | 0.5                 | 13                      |
| 329.51              | 0.1                 | 2                       | 330.04              | 0.5                 | 13                      |
| 329.52              | 0.1                 | 3                       | 330.05              | 0.5                 | 14                      |
| 329.53              | 0.1                 | 3                       | 330.06              | 0.5                 | 14                      |
| 329.54              | 0.1                 | 3                       | 330.07              | 0.5                 | 14                      |
| 329.55              | 0.1                 | 3                       | 330.08              | 0.5                 | 14                      |
| 329.56              | 0.1                 | 3                       | 330.09              | 0.5                 | 14                      |
| 329.57              | 0.1                 | 4                       | 330.10              | 0.5                 | 14                      |
| 329.58              | 0.1                 | 4                       | 330.11              | 0.5                 | 14                      |
| 329.59              | 0.1                 | 4                       | 330.12              | 0.5                 | 14                      |
| 329.60              | 0.2                 | 4                       | 330.13              | 0.5                 | 15                      |
| 329.61              | 0.2                 | 4                       | 330.14              | 0.5                 | 15                      |
| 329.62              | 0.2                 | 5                       | 330.15              | 0.5                 | 15                      |
| 329.63              | 0.2                 | 5                       | 330.16              | <b>0.5</b>          | <b>15</b>               |
| 329.64              | 0.2                 | 5                       |                     |                     |                         |
| 329.65              | 0.2                 | 5                       |                     |                     |                         |
| 329.66              | 0.2                 | 5                       |                     |                     |                         |
| 329.67              | 0.2                 | 6                       |                     |                     |                         |
| 329.68              | 0.2                 | 6                       |                     |                     |                         |
| 329.69              | 0.2                 | 6                       |                     |                     |                         |
| 329.70              | 0.2                 | 6                       |                     |                     |                         |
| 329.71              | 0.2                 | 7                       |                     |                     |                         |
| 329.72              | 0.3                 | 7                       |                     |                     |                         |
| 329.73              | 0.3                 | 7                       |                     |                     |                         |
| 329.74              | 0.3                 | 7                       |                     |                     |                         |
| 329.75              | 0.3                 | 7                       |                     |                     |                         |
| 329.76              | 0.3                 | 8                       |                     |                     |                         |
| 329.77              | 0.3                 | 8                       |                     |                     |                         |
| 329.78              | 0.3                 | 8                       |                     |                     |                         |
| 329.79              | 0.3                 | 8                       |                     |                     |                         |
| 329.80              | 0.3                 | 9                       |                     |                     |                         |
| 329.81              | 0.3                 | 9                       |                     |                     |                         |
| 329.82              | 0.3                 | 9                       |                     |                     |                         |
| 329.83              | 0.3                 | 9                       |                     |                     |                         |
| 329.84              | 0.3                 | 9                       |                     |                     |                         |
| 329.85              | 0.4                 | 10                      |                     |                     |                         |

**Summary for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 1.50" for 100-yr event  
 Inflow = 9.35 cfs @ 12.40 hrs, Volume= 1.274 af  
 Outflow = 9.30 cfs @ 12.43 hrs, Volume= 1.274 af, Atten= 1%, Lag= 1.7 min  
 Routed to Pond 4P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 2.01 fps, Min. Travel Time= 2.2 min  
 Avg. Velocity = 0.83 fps, Avg. Travel Time= 5.4 min

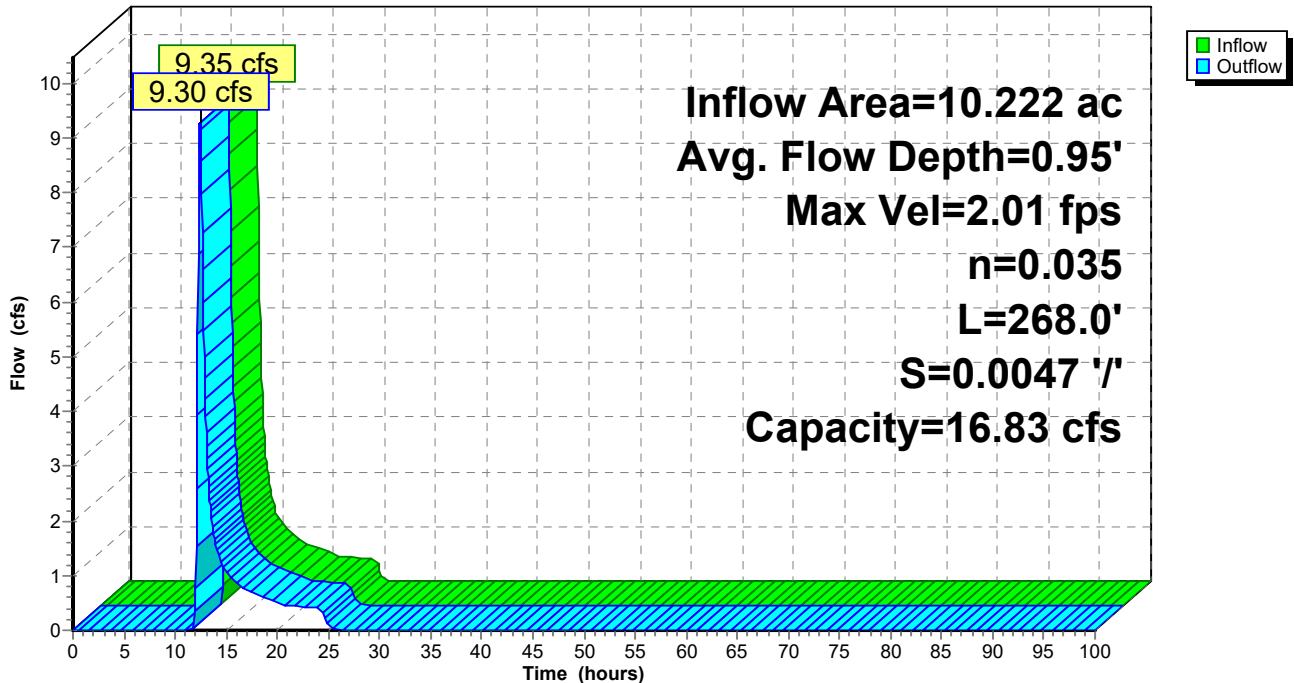
Peak Storage= 1,241 cf @ 12.43 hrs  
 Average Depth at Peak Storage= 0.95' , Surface Width= 7.72'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 16.83 cfs

2.00' x 1.25' deep channel, n= 0.035  
 Side Slope Z-value= 3.0 '/' Top Width= 9.50'  
 Length= 268.0' Slope= 0.0047 '/'  
 Inlet Invert= 341.00', Outlet Invert= 339.75'

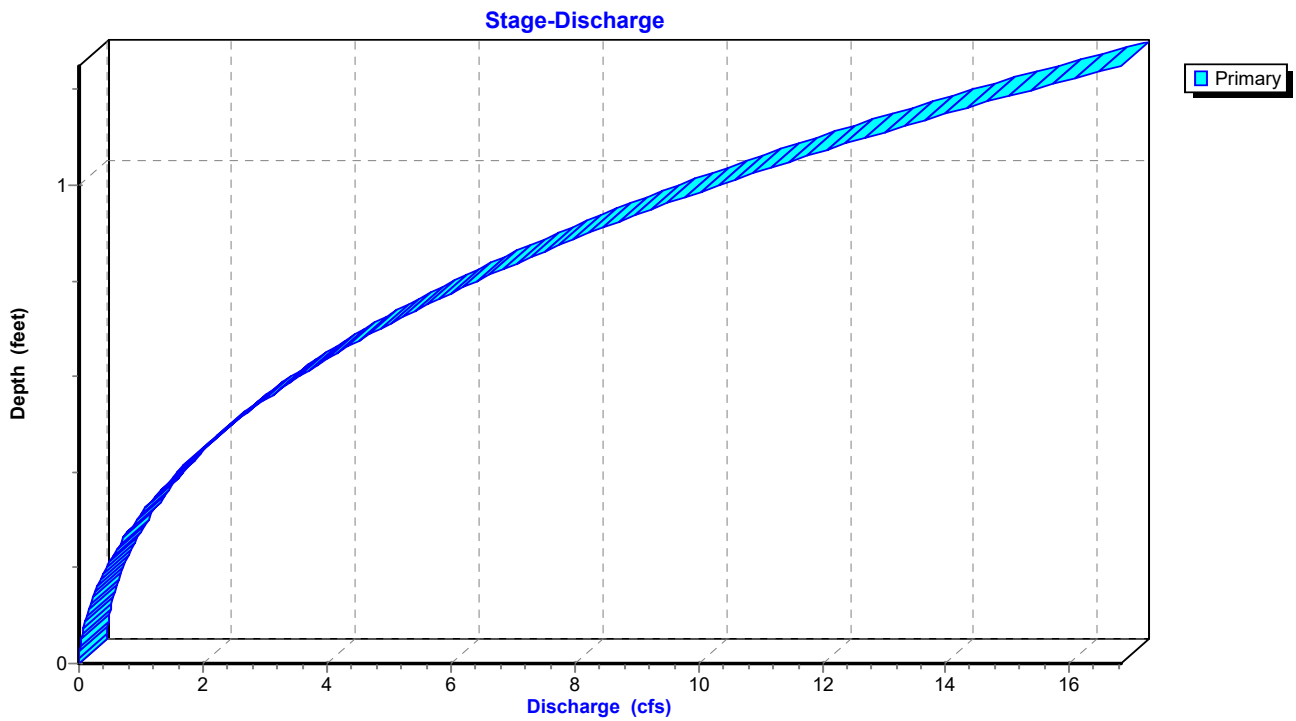


**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

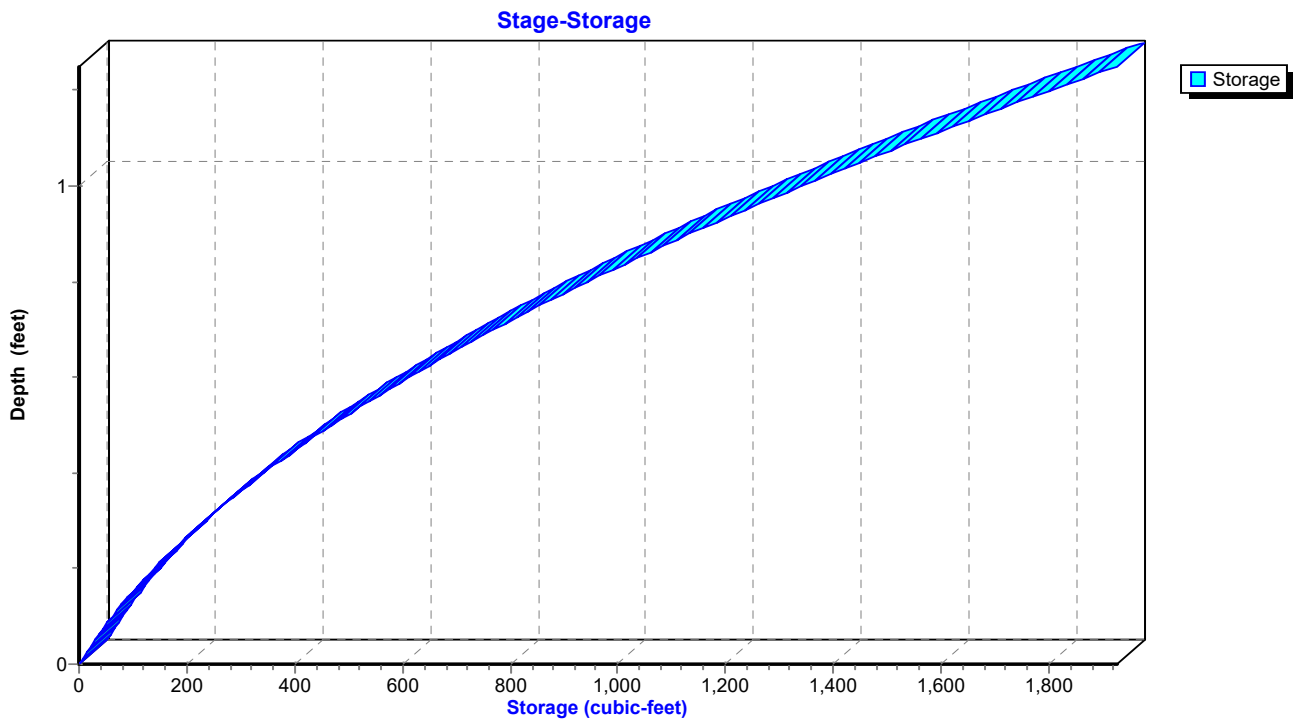
Hydrograph



### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



**Hydrograph for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 341.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 341.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 341.00              | 0.00             |
| 7.50            | 0.00            | 0                       | 341.00              | 0.00             |
| 10.00           | <b>0.00</b>     | <b>0</b>                | <b>341.00</b>       | <b>0.00</b>      |
| 12.50           | <b>8.83</b>     | <b>1,215</b>            | <b>341.94</b>       | <b>9.04</b>      |
| 15.00           | 1.06            | 259                     | 341.32              | 1.07             |
| 17.50           | 0.68            | 189                     | 341.26              | 0.69             |
| 20.00           | 0.50            | 152                     | 341.21              | 0.50             |
| 22.50           | 0.42            | 135                     | 341.20              | 0.43             |
| 25.00           | 0.04            | 36                      | 341.06              | 0.06             |
| 27.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 30.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 341.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 341.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 341.00              | 0.00             |

**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

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**Stage-Discharge for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 341.00              | 0.00                 | 0.00               | 341.53              | 1.46                 | 2.77               | 342.06              | 2.13                 | 11.71              |
| 341.01              | 0.12                 | 0.00               | 341.54              | 1.47                 | 2.87               | 342.07              | 2.14                 | 11.95              |
| 341.02              | 0.21                 | 0.01               | 341.55              | 1.48                 | 2.98               | 342.08              | 2.16                 | 12.20              |
| 341.03              | 0.27                 | 0.02               | 341.56              | 1.50                 | 3.09               | 342.09              | 2.17                 | 12.45              |
| 341.04              | 0.33                 | 0.03               | 341.57              | 1.51                 | 3.20               | 342.10              | 2.18                 | 12.70              |
| 341.05              | 0.37                 | 0.04               | 341.58              | 1.53                 | 3.32               | 342.11              | 2.19                 | 12.95              |
| 341.06              | 0.42                 | 0.06               | 341.59              | 1.54                 | 3.43               | 342.12              | 2.20                 | 13.21              |
| 341.07              | 0.46                 | 0.07               | 341.60              | 1.56                 | 3.55               | 342.13              | 2.21                 | 13.47              |
| 341.08              | 0.50                 | 0.09               | 341.61              | 1.57                 | 3.67               | 342.14              | 2.22                 | 13.73              |
| 341.09              | 0.54                 | 0.11               | 341.62              | 1.59                 | 3.79               | 342.15              | 2.23                 | 14.00              |
| 341.10              | 0.57                 | 0.13               | 341.63              | 1.60                 | 3.92               | 342.16              | 2.24                 | 14.27              |
| 341.11              | 0.60                 | 0.16               | 341.64              | 1.61                 | 4.05               | 342.17              | 2.26                 | 14.54              |
| 341.12              | 0.64                 | 0.18               | 341.65              | 1.63                 | 4.18               | 342.18              | 2.27                 | 14.81              |
| 341.13              | 0.67                 | 0.21               | 341.66              | 1.64                 | 4.31               | 342.19              | 2.28                 | 15.09              |
| 341.14              | 0.70                 | 0.24               | 341.67              | 1.65                 | 4.44               | 342.20              | 2.29                 | 15.37              |
| 341.15              | 0.72                 | 0.27               | 341.68              | 1.67                 | 4.58               | 342.21              | 2.30                 | 15.66              |
| 341.16              | 0.75                 | 0.30               | 341.69              | 1.68                 | 4.72               | 342.22              | 2.31                 | 15.95              |
| 341.17              | 0.78                 | 0.33               | 341.70              | 1.69                 | 4.86               | 342.23              | 2.32                 | 16.24              |
| 341.18              | 0.80                 | 0.37               | 341.71              | 1.71                 | 5.01               | 342.24              | 2.33                 | 16.53              |
| 341.19              | 0.83                 | 0.40               | 341.72              | 1.72                 | 5.15               | 342.25              | <b>2.34</b>          | <b>16.83</b>       |
| 341.20              | 0.85                 | 0.44               | 341.73              | 1.73                 | 5.30               |                     |                      |                    |
| 341.21              | 0.88                 | 0.48               | 341.74              | 1.75                 | 5.45               |                     |                      |                    |
| 341.22              | 0.90                 | 0.53               | 341.75              | 1.76                 | 5.61               |                     |                      |                    |
| 341.23              | 0.92                 | 0.57               | 341.76              | 1.77                 | 5.77               |                     |                      |                    |
| 341.24              | 0.94                 | 0.62               | 341.77              | 1.79                 | 5.92               |                     |                      |                    |
| 341.25              | 0.96                 | 0.66               | 341.78              | 1.80                 | 6.09               |                     |                      |                    |
| 341.26              | 0.99                 | 0.71               | 341.79              | 1.81                 | 6.25               |                     |                      |                    |
| 341.27              | 1.01                 | 0.76               | 341.80              | 1.82                 | 6.42               |                     |                      |                    |
| 341.28              | 1.03                 | 0.82               | 341.81              | 1.84                 | 6.59               |                     |                      |                    |
| 341.29              | 1.05                 | 0.87               | 341.82              | 1.85                 | 6.76               |                     |                      |                    |
| 341.30              | 1.07                 | 0.93               | 341.83              | 1.86                 | 6.93               |                     |                      |                    |
| 341.31              | 1.09                 | 0.99               | 341.84              | 1.87                 | 7.11               |                     |                      |                    |
| 341.32              | 1.11                 | 1.05               | 341.85              | 1.89                 | 7.29               |                     |                      |                    |
| 341.33              | 1.12                 | 1.11               | 341.86              | 1.90                 | 7.48               |                     |                      |                    |
| 341.34              | 1.14                 | 1.17               | 341.87              | 1.91                 | 7.66               |                     |                      |                    |
| 341.35              | 1.16                 | 1.24               | 341.88              | 1.92                 | 7.85               |                     |                      |                    |
| 341.36              | 1.18                 | 1.31               | 341.89              | 1.93                 | 8.04               |                     |                      |                    |
| 341.37              | 1.20                 | 1.38               | 341.90              | 1.95                 | 8.23               |                     |                      |                    |
| 341.38              | 1.21                 | 1.45               | 341.91              | 1.96                 | 8.43               |                     |                      |                    |
| 341.39              | 1.23                 | 1.52               | 341.92              | 1.97                 | 8.63               |                     |                      |                    |
| 341.40              | 1.25                 | 1.60               | 341.93              | 1.98                 | 8.83               |                     |                      |                    |
| 341.41              | 1.27                 | 1.68               | 341.94              | 1.99                 | 9.03               |                     |                      |                    |
| 341.42              | 1.28                 | 1.76               | 341.95              | 2.01                 | 9.24               |                     |                      |                    |
| 341.43              | 1.30                 | 1.84               | 341.96              | 2.02                 | 9.45               |                     |                      |                    |
| 341.44              | 1.32                 | 1.92               | 341.97              | 2.03                 | 9.67               |                     |                      |                    |
| 341.45              | 1.33                 | 2.01               | 341.98              | 2.04                 | 9.88               |                     |                      |                    |
| 341.46              | 1.35                 | 2.09               | 341.99              | 2.05                 | 10.10              |                     |                      |                    |
| 341.47              | 1.36                 | 2.18               | 342.00              | 2.06                 | 10.32              |                     |                      |                    |
| 341.48              | 1.38                 | 2.28               | 342.01              | 2.08                 | 10.55              |                     |                      |                    |
| 341.49              | 1.39                 | 2.37               | 342.02              | 2.09                 | 10.77              |                     |                      |                    |
| 341.50              | 1.41                 | 2.47               | 342.03              | 2.10                 | 11.00              |                     |                      |                    |
| 341.51              | 1.42                 | 2.57               | 342.04              | 2.11                 | 11.24              |                     |                      |                    |
| 341.52              | 1.44                 | 2.67               | 342.05              | 2.12                 | 11.47              |                     |                      |                    |

**Stage-Area-Storage for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 341.00              | 0.0                 | 0                       | 342.06              | 5.5                 | 1,472                   |
| 341.02              | 0.0                 | 11                      | 342.08              | 5.7                 | 1,517                   |
| 341.04              | 0.1                 | 23                      | 342.10              | 5.8                 | 1,562                   |
| 341.06              | 0.1                 | 35                      | 342.12              | 6.0                 | 1,609                   |
| 341.08              | 0.2                 | 48                      | 342.14              | 6.2                 | 1,656                   |
| 341.10              | 0.2                 | 62                      | 342.16              | 6.4                 | 1,704                   |
| 341.12              | 0.3                 | 76                      | 342.18              | 6.5                 | 1,752                   |
| 341.14              | 0.3                 | 91                      | 342.20              | 6.7                 | 1,801                   |
| 341.16              | 0.4                 | 106                     | 342.22              | 6.9                 | 1,851                   |
| 341.18              | 0.5                 | 123                     | 342.24              | <b>7.1</b>          | <b>1,901</b>            |
| 341.20              | 0.5                 | 139                     |                     |                     |                         |
| 341.22              | 0.6                 | 157                     |                     |                     |                         |
| 341.24              | 0.7                 | 175                     |                     |                     |                         |
| 341.26              | 0.7                 | 194                     |                     |                     |                         |
| 341.28              | 0.8                 | 213                     |                     |                     |                         |
| 341.30              | 0.9                 | 233                     |                     |                     |                         |
| 341.32              | 0.9                 | 254                     |                     |                     |                         |
| 341.34              | 1.0                 | 275                     |                     |                     |                         |
| 341.36              | 1.1                 | 297                     |                     |                     |                         |
| 341.38              | 1.2                 | 320                     |                     |                     |                         |
| 341.40              | 1.3                 | 343                     |                     |                     |                         |
| 341.42              | 1.4                 | 367                     |                     |                     |                         |
| 341.44              | 1.5                 | 392                     |                     |                     |                         |
| 341.46              | 1.6                 | 417                     |                     |                     |                         |
| 341.48              | 1.7                 | 443                     |                     |                     |                         |
| 341.50              | 1.8                 | 469                     |                     |                     |                         |
| 341.52              | 1.9                 | 496                     |                     |                     |                         |
| 341.54              | 2.0                 | 524                     |                     |                     |                         |
| 341.56              | 2.1                 | 552                     |                     |                     |                         |
| 341.58              | 2.2                 | 581                     |                     |                     |                         |
| 341.60              | 2.3                 | 611                     |                     |                     |                         |
| 341.62              | 2.4                 | 641                     |                     |                     |                         |
| 341.64              | 2.5                 | 672                     |                     |                     |                         |
| 341.66              | 2.6                 | 704                     |                     |                     |                         |
| 341.68              | 2.7                 | 736                     |                     |                     |                         |
| 341.70              | 2.9                 | 769                     |                     |                     |                         |
| 341.72              | 3.0                 | 803                     |                     |                     |                         |
| 341.74              | 3.1                 | 837                     |                     |                     |                         |
| 341.76              | 3.3                 | 872                     |                     |                     |                         |
| 341.78              | 3.4                 | 907                     |                     |                     |                         |
| 341.80              | 3.5                 | 943                     |                     |                     |                         |
| 341.82              | 3.7                 | 980                     |                     |                     |                         |
| 341.84              | 3.8                 | 1,018                   |                     |                     |                         |
| 341.86              | 3.9                 | 1,056                   |                     |                     |                         |
| 341.88              | 4.1                 | 1,094                   |                     |                     |                         |
| 341.90              | 4.2                 | 1,134                   |                     |                     |                         |
| 341.92              | 4.4                 | 1,174                   |                     |                     |                         |
| 341.94              | 4.5                 | 1,214                   |                     |                     |                         |
| 341.96              | 4.7                 | 1,256                   |                     |                     |                         |
| 341.98              | 4.8                 | 1,297                   |                     |                     |                         |
| 342.00              | 5.0                 | 1,340                   |                     |                     |                         |
| 342.02              | 5.2                 | 1,383                   |                     |                     |                         |
| 342.04              | 5.3                 | 1,427                   |                     |                     |                         |

### Summary for Reach R12: 12" Culvert Pond Discharge

[52] Hint: Inlet/Outlet conditions not evaluated

[55] Hint: Peak inflow is 610% of Manning's capacity

[76] Warning: Detained 0.386 af (Pond w/culvert advised)

[80] Warning: Exceeded Pond 4P by 0.01' @ 0.00 hrs (0.00 cfs 0.005 af)

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth > 0.94" for 100-yr event

Inflow = 2.01 cfs @ 12.45 hrs, Volume= 0.798 af

Outflow = 0.35 cfs @ 39.40 hrs, Volume= 0.798 af, Atten= 82%, Lag= 1,617.0 min

Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2

Max. Velocity= 0.48 fps, Min. Travel Time= 4.8 min

Avg. Velocity = 0.21 fps, Avg. Travel Time= 10.8 min

Peak Storage= 108 cf @ 12.30 hrs

Average Depth at Peak Storage= 1.00'

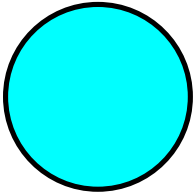
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 0.33 cfs

12.0" Round Pipe

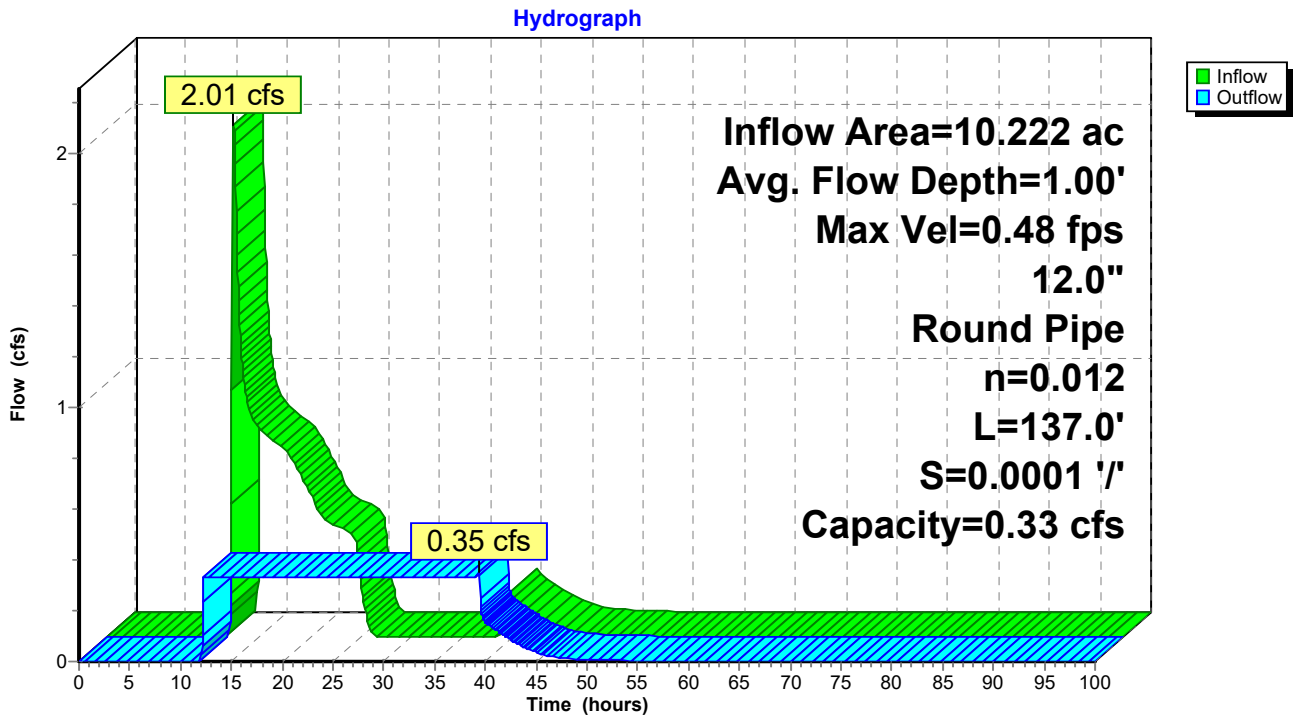
n= 0.012 Corrugated PP, smooth interior

Length= 137.0' Slope= 0.0001 '/'

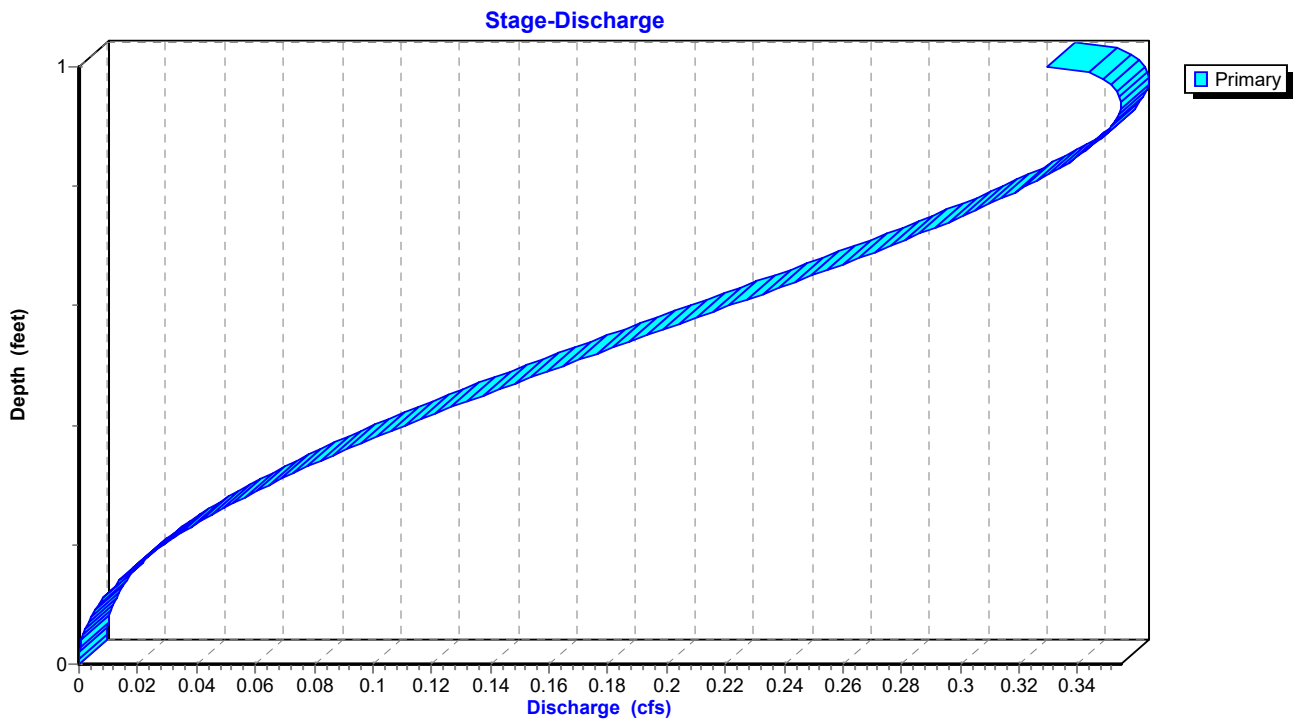
Inlet Invert= 337.01', Outlet Invert= 337.00'



Reach R12: 12" Culvert Pond Discharge

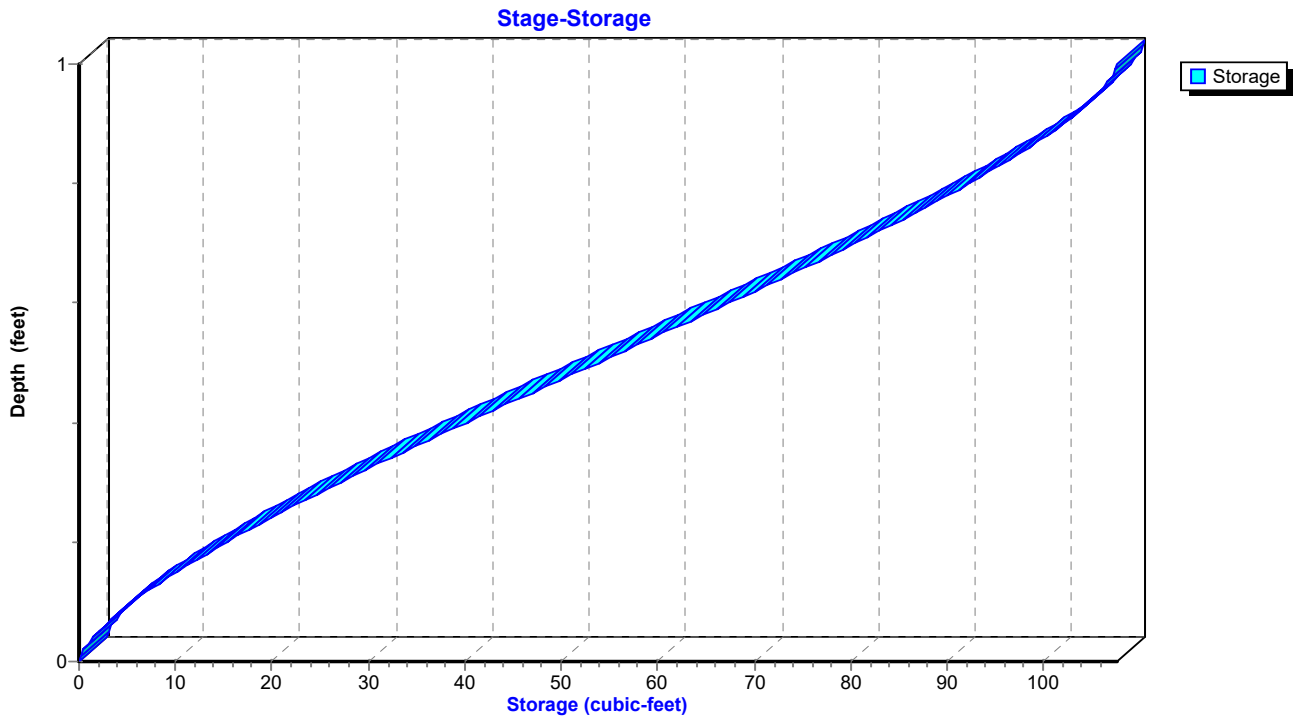


Reach R12: 12" Culvert Pond Discharge





### Reach R12: 12" Culvert Pond Discharge



**Hydrograph for Reach R12: 12" Culvert Pond Discharge**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 337.01              | 0.00             |
| 2.50            | 0.00            | 0                       | 337.01              | 0.00             |
| 5.00            | 0.00            | 0                       | 337.01              | 0.00             |
| 7.50            | 0.00            | 0                       | 337.01              | 0.00             |
| 10.00           | <b>0.00</b>     | <b>0</b>                | <b>337.01</b>       | 0.00             |
| 12.50           | <b>1.99</b>     | <b>108</b>              | <b>338.01</b>       | 0.33             |
| 15.00           | 0.82            | 108                     | 338.01              | 0.33             |
| 17.50           | 0.74            | 108                     | 338.01              | 0.33             |
| 20.00           | 0.57            | 108                     | 338.01              | 0.33             |
| 22.50           | 0.44            | 108                     | 338.01              | 0.33             |
| 25.00           | 0.22            | 108                     | 338.01              | 0.33             |
| 27.50           | 0.00            | 108                     | 338.01              | 0.33             |
| 30.00           | 0.00            | 108                     | 338.01              | 0.33             |
| 32.50           | 0.00            | 108                     | 338.01              | 0.33             |
| 35.00           | 0.00            | 108                     | 338.01              | 0.33             |
| 37.50           | 0.00            | 108                     | 338.01              | <b>0.33</b>      |
| 40.00           | 0.15            | 51                      | 337.49              | <b>0.15</b>      |
| 42.50           | 0.08            | 33                      | 337.36              | 0.08             |
| 45.00           | 0.03            | 18                      | 337.23              | 0.04             |
| 47.50           | 0.01            | 9                       | 337.15              | 0.01             |
| 50.00           | 0.01            | 6                       | 337.11              | 0.01             |
| 52.50           | 0.00            | 4                       | 337.09              | 0.00             |
| 55.00           | 0.00            | 3                       | 337.07              | 0.00             |
| 57.50           | 0.00            | 2                       | 337.06              | 0.00             |
| 60.00           | 0.00            | 2                       | 337.06              | 0.00             |
| 62.50           | 0.00            | 1                       | 337.05              | 0.00             |
| 65.00           | 0.00            | 1                       | 337.05              | 0.00             |
| 67.50           | 0.00            | 1                       | 337.04              | 0.00             |
| 70.00           | 0.00            | 1                       | 337.04              | 0.00             |
| 72.50           | 0.00            | 1                       | 337.04              | 0.00             |
| 75.00           | 0.00            | 1                       | 337.04              | 0.00             |
| 77.50           | 0.00            | 1                       | 337.03              | 0.00             |
| 80.00           | 0.00            | 1                       | 337.03              | 0.00             |
| 82.50           | 0.00            | 1                       | 337.03              | 0.00             |
| 85.00           | 0.00            | 1                       | 337.03              | 0.00             |
| 87.50           | 0.00            | 0                       | 337.03              | 0.00             |
| 90.00           | 0.00            | 0                       | 337.03              | 0.00             |
| 92.50           | 0.00            | 0                       | 337.03              | 0.00             |
| 95.00           | 0.00            | 0                       | 337.03              | 0.00             |
| 97.50           | 0.00            | 0                       | 337.03              | 0.00             |
| 100.00          | 0.00            | 0                       | 337.03              | 0.00             |

**Stage-Discharge for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.01              | 0.00                 | 0.00               | 337.54              | 0.43                 | 0.18               |
| 337.02              | 0.04                 | 0.00               | 337.55              | 0.43                 | 0.19               |
| 337.03              | 0.06                 | 0.00               | 337.56              | 0.44                 | 0.19               |
| 337.04              | 0.08                 | 0.00               | 337.57              | 0.44                 | 0.20               |
| 337.05              | 0.09                 | 0.00               | 337.58              | 0.44                 | 0.20               |
| 337.06              | 0.11                 | 0.00               | 337.59              | 0.45                 | 0.21               |
| 337.07              | 0.12                 | 0.00               | 337.60              | 0.45                 | 0.22               |
| 337.08              | 0.13                 | 0.00               | 337.61              | 0.45                 | 0.22               |
| 337.09              | 0.15                 | 0.00               | 337.62              | 0.45                 | 0.23               |
| 337.10              | 0.16                 | 0.01               | 337.63              | 0.46                 | 0.23               |
| 337.11              | 0.17                 | 0.01               | 337.64              | 0.46                 | 0.24               |
| 337.12              | 0.18                 | 0.01               | 337.65              | 0.46                 | 0.24               |
| 337.13              | 0.19                 | 0.01               | 337.66              | 0.46                 | 0.25               |
| 337.14              | 0.20                 | 0.01               | 337.67              | 0.46                 | 0.25               |
| 337.15              | 0.21                 | 0.01               | 337.68              | 0.47                 | 0.26               |
| 337.16              | 0.22                 | 0.02               | 337.69              | 0.47                 | 0.27               |
| 337.17              | 0.23                 | 0.02               | 337.70              | 0.47                 | 0.27               |
| 337.18              | 0.23                 | 0.02               | 337.71              | 0.47                 | 0.28               |
| 337.19              | 0.24                 | 0.02               | 337.72              | 0.47                 | 0.28               |
| 337.20              | 0.25                 | 0.03               | 337.73              | 0.47                 | 0.29               |
| 337.21              | 0.26                 | 0.03               | 337.74              | 0.47                 | 0.29               |
| 337.22              | 0.27                 | 0.03               | 337.75              | 0.47                 | 0.30               |
| 337.23              | 0.27                 | 0.03               | 337.76              | 0.48                 | 0.30               |
| 337.24              | 0.28                 | 0.04               | 337.77              | 0.48                 | 0.31               |
| 337.25              | 0.29                 | 0.04               | 337.78              | 0.48                 | 0.31               |
| 337.26              | 0.29                 | 0.05               | 337.79              | 0.48                 | 0.31               |
| 337.27              | 0.30                 | 0.05               | 337.80              | 0.48                 | 0.32               |
| 337.28              | 0.31                 | 0.05               | 337.81              | 0.48                 | 0.32               |
| 337.29              | 0.31                 | 0.06               | 337.82              | <b>0.48</b>          | 0.33               |
| 337.30              | 0.32                 | 0.06               | 337.83              | 0.48                 | 0.33               |
| 337.31              | 0.33                 | 0.06               | 337.84              | 0.48                 | 0.33               |
| 337.32              | 0.33                 | 0.07               | 337.85              | 0.48                 | 0.34               |
| 337.33              | 0.34                 | 0.07               | 337.86              | 0.48                 | 0.34               |
| 337.34              | 0.34                 | 0.08               | 337.87              | 0.48                 | 0.34               |
| 337.35              | 0.35                 | 0.08               | 337.88              | 0.48                 | 0.35               |
| 337.36              | 0.35                 | 0.09               | 337.89              | 0.47                 | 0.35               |
| 337.37              | 0.36                 | 0.09               | 337.90              | 0.47                 | 0.35               |
| 337.38              | 0.36                 | 0.10               | 337.91              | 0.47                 | 0.35               |
| 337.39              | 0.37                 | 0.10               | 337.92              | 0.47                 | 0.35               |
| 337.40              | 0.37                 | 0.11               | 337.93              | 0.47                 | 0.35               |
| 337.41              | 0.38                 | 0.11               | 337.94              | 0.47                 | 0.35               |
| 337.42              | 0.38                 | 0.12               | 337.95              | 0.46                 | <b>0.35</b>        |
| 337.43              | 0.39                 | 0.12               | 337.96              | 0.46                 | 0.35               |
| 337.44              | 0.39                 | 0.13               | 337.97              | 0.46                 | 0.35               |
| 337.45              | 0.40                 | 0.13               | 337.98              | 0.45                 | 0.35               |
| 337.46              | 0.40                 | 0.14               | 337.99              | 0.45                 | 0.35               |
| 337.47              | 0.40                 | 0.14               | 338.00              | 0.44                 | 0.34               |
| 337.48              | 0.41                 | 0.15               | 338.01              | 0.42                 | 0.33               |
| 337.49              | 0.41                 | 0.15               |                     |                      |                    |
| 337.50              | 0.42                 | 0.16               |                     |                      |                    |
| 337.51              | 0.42                 | 0.16               |                     |                      |                    |
| 337.52              | 0.42                 | 0.17               |                     |                      |                    |
| 337.53              | 0.43                 | 0.18               |                     |                      |                    |

**Stage-Area-Storage for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.01              | 0.0                 | 0                       | 337.54              | 0.4                 | 58                      |
| 337.02              | 0.0                 | 0                       | 337.55              | 0.4                 | 59                      |
| 337.03              | 0.0                 | 1                       | 337.56              | 0.4                 | 61                      |
| 337.04              | 0.0                 | 1                       | 337.57              | 0.5                 | 62                      |
| 337.05              | 0.0                 | 1                       | 337.58              | 0.5                 | 63                      |
| 337.06              | 0.0                 | 2                       | 337.59              | 0.5                 | 65                      |
| 337.07              | 0.0                 | 3                       | 337.60              | 0.5                 | 66                      |
| 337.08              | 0.0                 | 3                       | 337.61              | 0.5                 | 67                      |
| 337.09              | 0.0                 | 4                       | 337.62              | 0.5                 | 69                      |
| 337.10              | 0.0                 | 5                       | 337.63              | 0.5                 | 70                      |
| 337.11              | 0.0                 | 6                       | 337.64              | 0.5                 | 71                      |
| 337.12              | 0.0                 | 6                       | 337.65              | 0.5                 | 73                      |
| 337.13              | 0.1                 | 7                       | 337.66              | 0.5                 | 74                      |
| 337.14              | 0.1                 | 8                       | 337.67              | 0.5                 | 75                      |
| 337.15              | 0.1                 | 9                       | 337.68              | 0.6                 | 77                      |
| 337.16              | 0.1                 | 10                      | 337.69              | 0.6                 | 78                      |
| 337.17              | 0.1                 | 11                      | 337.70              | 0.6                 | 79                      |
| 337.18              | 0.1                 | 12                      | 337.71              | 0.6                 | 80                      |
| 337.19              | 0.1                 | 13                      | 337.72              | 0.6                 | 82                      |
| 337.20              | 0.1                 | 14                      | 337.73              | 0.6                 | 83                      |
| 337.21              | 0.1                 | 15                      | 337.74              | 0.6                 | 84                      |
| 337.22              | 0.1                 | 16                      | 337.75              | 0.6                 | 85                      |
| 337.23              | 0.1                 | 18                      | 337.76              | 0.6                 | 87                      |
| 337.24              | 0.1                 | 19                      | 337.77              | 0.6                 | 88                      |
| 337.25              | 0.1                 | 20                      | 337.78              | 0.6                 | 89                      |
| 337.26              | 0.2                 | 21                      | 337.79              | 0.7                 | 90                      |
| 337.27              | 0.2                 | 22                      | 337.80              | 0.7                 | 91                      |
| 337.28              | 0.2                 | 23                      | 337.81              | 0.7                 | 92                      |
| 337.29              | 0.2                 | 25                      | 337.82              | 0.7                 | 93                      |
| 337.30              | 0.2                 | 26                      | 337.83              | 0.7                 | 94                      |
| 337.31              | 0.2                 | 27                      | 337.84              | 0.7                 | 95                      |
| 337.32              | 0.2                 | 28                      | 337.85              | 0.7                 | 96                      |
| 337.33              | 0.2                 | 30                      | 337.86              | 0.7                 | 97                      |
| 337.34              | 0.2                 | 31                      | 337.87              | 0.7                 | 98                      |
| 337.35              | 0.2                 | 32                      | 337.88              | 0.7                 | 99                      |
| 337.36              | 0.2                 | 34                      | 337.89              | 0.7                 | 100                     |
| 337.37              | 0.3                 | 35                      | 337.90              | 0.7                 | 101                     |
| 337.38              | 0.3                 | 36                      | 337.91              | 0.7                 | 102                     |
| 337.39              | 0.3                 | 38                      | 337.92              | 0.8                 | 103                     |
| 337.40              | 0.3                 | 39                      | 337.93              | 0.8                 | 104                     |
| 337.41              | 0.3                 | 40                      | 337.94              | 0.8                 | 104                     |
| 337.42              | 0.3                 | 42                      | 337.95              | 0.8                 | 105                     |
| 337.43              | 0.3                 | 43                      | 337.96              | 0.8                 | 106                     |
| 337.44              | 0.3                 | 44                      | 337.97              | 0.8                 | 106                     |
| 337.45              | 0.3                 | 46                      | 337.98              | 0.8                 | 107                     |
| 337.46              | 0.3                 | 47                      | 337.99              | 0.8                 | 107                     |
| 337.47              | 0.4                 | 48                      | 338.00              | 0.8                 | 107                     |
| 337.48              | 0.4                 | 50                      | 338.01              | <b>0.8</b>          | <b>108</b>              |
| 337.49              | 0.4                 | 51                      |                     |                     |                         |
| 337.50              | 0.4                 | 52                      |                     |                     |                         |
| 337.51              | 0.4                 | 54                      |                     |                     |                         |
| 337.52              | 0.4                 | 55                      |                     |                     |                         |
| 337.53              | 0.4                 | 57                      |                     |                     |                         |

**Summary for Reach R7: Proposed RRv Swale**

Inflow Area = 5.515 ac, 54.87% Impervious, Inflow Depth = 4.53" for 100-yr event  
 Inflow = 28.94 cfs @ 12.10 hrs, Volume= 2.082 af  
 Outflow = 28.10 cfs @ 12.13 hrs, Volume= 2.082 af, Atten= 3%, Lag= 1.9 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 2.05 fps, Min. Travel Time= 2.6 min  
 Avg. Velocity = 0.56 fps, Avg. Travel Time= 9.5 min

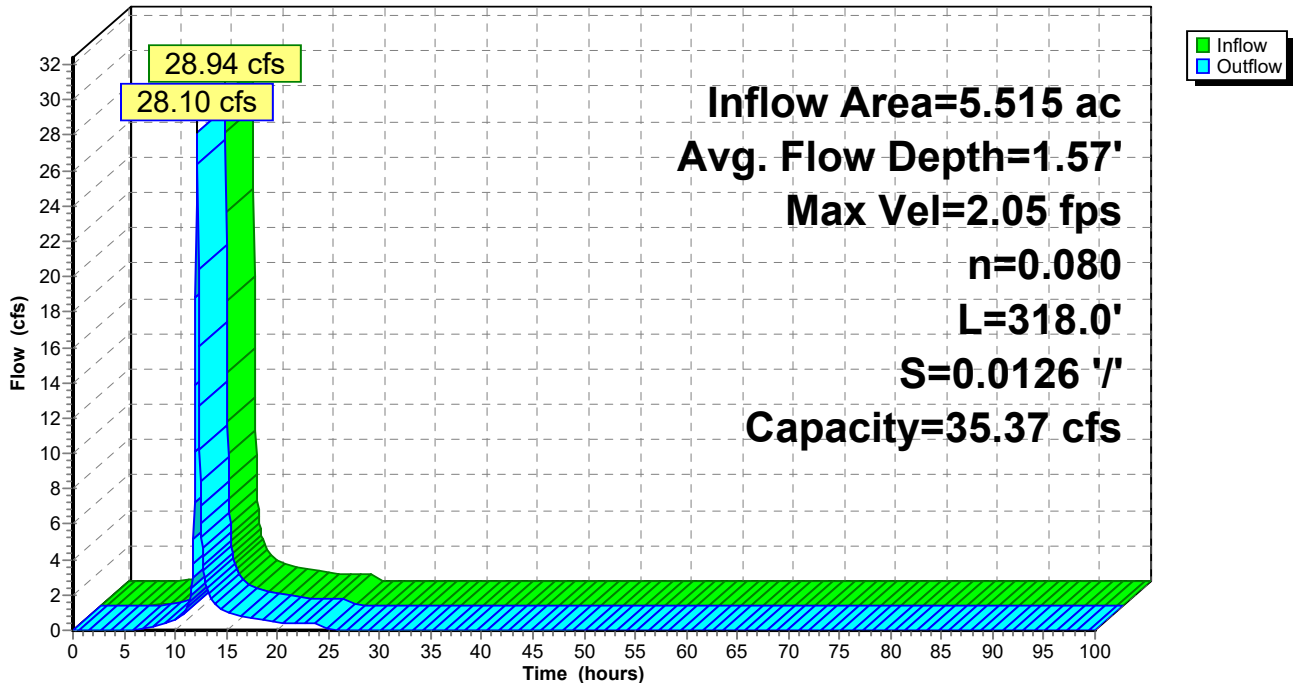
Peak Storage= 4,345 cf @ 12.13 hrs  
 Average Depth at Peak Storage= 1.57' , Surface Width= 13.42'  
 Bank-Full Depth= 1.75' Flow Area= 16.2 sf, Capacity= 35.37 cfs

4.00' x 1.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.50'  
 Length= 318.0' Slope= 0.0126 ' / '  
 Inlet Invert= 335.00', Outlet Invert= 331.00'

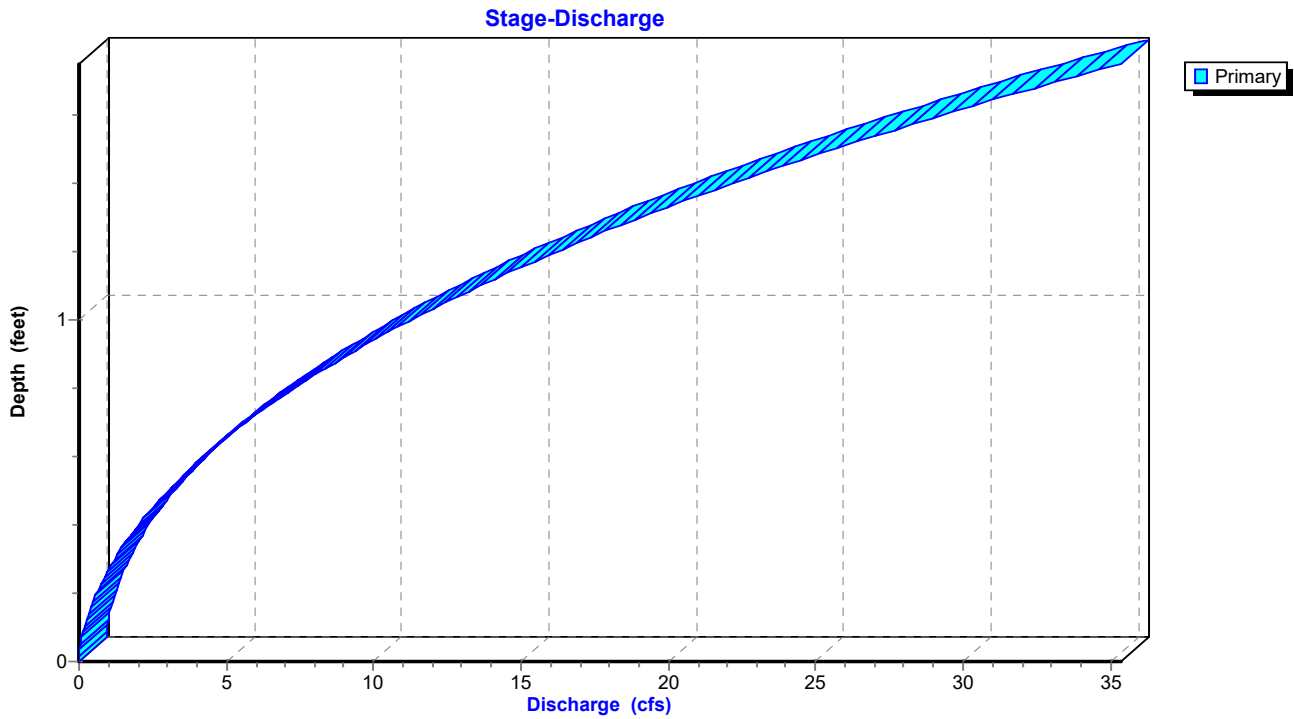


**Reach R7: Proposed RRv Swale**

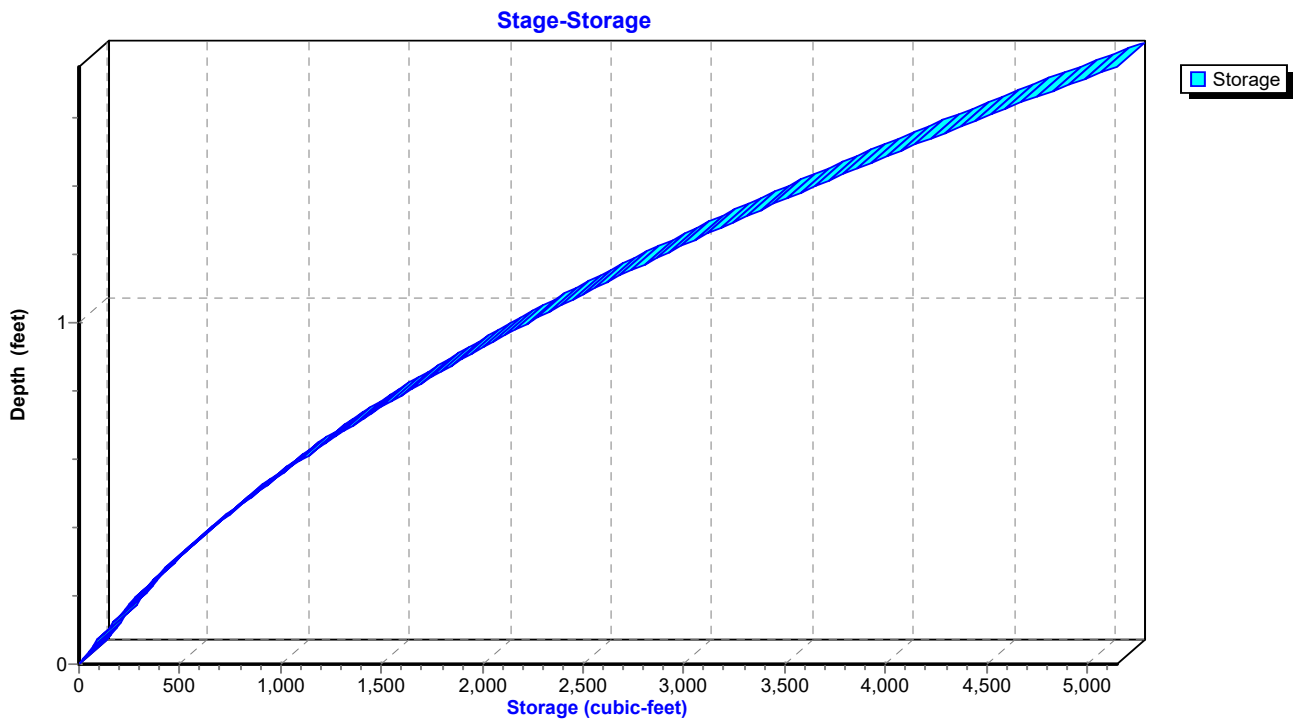
Hydrograph



**Reach R7: Proposed RRv Swale**



**Reach R7: Proposed RRv Swale**



**Hydrograph for Reach R7: Proposed RRv Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 335.00              | 0.00             |
| 5.00            | 0.01            | 3                       | 335.00              | 0.00             |
| 7.50            | 0.19            | 133                     | 335.10              | 0.18             |
| 10.00           | <b>0.61</b>     | <b>287</b>              | <b>335.20</b>       | <b>0.58</b>      |
| 12.50           | <b>6.06</b>     | <b>1,594</b>            | <b>335.79</b>       | <b>7.08</b>      |
| 15.00           | 1.03            | 423                     | 335.28              | 1.05             |
| 17.50           | 0.65            | 310                     | 335.21              | 0.66             |
| 20.00           | 0.45            | 244                     | 335.17              | 0.46             |
| 22.50           | 0.39            | 222                     | 335.16              | 0.39             |
| 25.00           | 0.00            | 27                      | 335.02              | 0.01             |
| 27.50           | 0.00            | 1                       | 335.00              | 0.00             |
| 30.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 335.00              | 0.00             |

**Stage-Discharge for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 335.00              | 0.00                 | 0.00               | 336.06              | 1.66                 | 12.63              |
| 335.02              | 0.15                 | 0.01               | 336.08              | 1.68                 | 13.11              |
| 335.04              | 0.24                 | 0.04               | 336.10              | 1.69                 | 13.60              |
| 335.06              | 0.31                 | 0.08               | 336.12              | 1.71                 | 14.10              |
| 335.08              | 0.37                 | 0.13               | 336.14              | 1.73                 | 14.61              |
| 335.10              | 0.43                 | 0.18               | 336.16              | 1.74                 | 15.13              |
| 335.12              | 0.48                 | 0.25               | 336.18              | 1.76                 | 15.66              |
| 335.14              | 0.53                 | 0.33               | 336.20              | 1.78                 | 16.20              |
| 335.16              | 0.57                 | 0.41               | 336.22              | 1.79                 | 16.75              |
| 335.18              | 0.61                 | 0.50               | 336.24              | 1.81                 | 17.31              |
| 335.20              | 0.65                 | 0.60               | 336.26              | 1.82                 | 17.88              |
| 335.22              | 0.69                 | 0.71               | 336.28              | 1.84                 | 18.46              |
| 335.24              | 0.72                 | 0.82               | 336.30              | 1.86                 | 19.05              |
| 335.26              | 0.76                 | 0.94               | 336.32              | 1.87                 | 19.66              |
| 335.28              | 0.79                 | 1.07               | 336.34              | 1.89                 | 20.27              |
| 335.30              | 0.83                 | 1.21               | 336.36              | 1.90                 | 20.90              |
| 335.32              | 0.86                 | 1.36               | 336.38              | 1.92                 | 21.53              |
| 335.34              | 0.89                 | 1.51               | 336.40              | 1.93                 | 22.18              |
| 335.36              | 0.92                 | 1.68               | 336.42              | 1.95                 | 22.84              |
| 335.38              | 0.94                 | 1.84               | 336.44              | 1.96                 | 23.51              |
| 335.40              | 0.97                 | 2.02               | 336.46              | 1.98                 | 24.19              |
| 335.42              | 1.00                 | 2.21               | 336.48              | 1.99                 | 24.88              |
| 335.44              | 1.02                 | 2.40               | 336.50              | 2.01                 | 25.59              |
| 335.46              | 1.05                 | 2.60               | 336.52              | 2.02                 | 26.30              |
| 335.48              | 1.08                 | 2.81               | 336.54              | 2.04                 | 27.03              |
| 335.50              | 1.10                 | 3.03               | 336.56              | 2.05                 | 27.77              |
| 335.52              | 1.12                 | 3.25               | 336.58              | 2.07                 | 28.52              |
| 335.54              | 1.15                 | 3.49               | 336.60              | 2.08                 | 29.28              |
| 335.56              | 1.17                 | 3.73               | 336.62              | 2.09                 | 30.05              |
| 335.58              | 1.19                 | 3.98               | 336.64              | 2.11                 | 30.84              |
| 335.60              | 1.22                 | 4.24               | 336.66              | 2.12                 | 31.64              |
| 335.62              | 1.24                 | 4.50               | 336.68              | 2.14                 | 32.44              |
| 335.64              | 1.26                 | 4.78               | 336.70              | 2.15                 | 33.27              |
| 335.66              | 1.28                 | 5.06               | 336.72              | 2.16                 | 34.10              |
| 335.68              | 1.30                 | 5.35               | 336.74              | <b>2.18</b>          | <b>34.95</b>       |
| 335.70              | 1.32                 | 5.65               |                     |                      |                    |
| 335.72              | 1.34                 | 5.96               |                     |                      |                    |
| 335.74              | 1.36                 | 6.28               |                     |                      |                    |
| 335.76              | 1.38                 | 6.61               |                     |                      |                    |
| 335.78              | 1.40                 | 6.95               |                     |                      |                    |
| 335.80              | 1.42                 | 7.29               |                     |                      |                    |
| 335.82              | 1.44                 | 7.65               |                     |                      |                    |
| 335.84              | 1.46                 | 8.01               |                     |                      |                    |
| 335.86              | 1.48                 | 8.38               |                     |                      |                    |
| 335.88              | 1.50                 | 8.76               |                     |                      |                    |
| 335.90              | 1.52                 | 9.16               |                     |                      |                    |
| 335.92              | 1.54                 | 9.56               |                     |                      |                    |
| 335.94              | 1.55                 | 9.97               |                     |                      |                    |
| 335.96              | 1.57                 | 10.39              |                     |                      |                    |
| 335.98              | 1.59                 | 10.82              |                     |                      |                    |
| 336.00              | 1.61                 | 11.25              |                     |                      |                    |
| 336.02              | 1.63                 | 11.70              |                     |                      |                    |
| 336.04              | 1.64                 | 12.16              |                     |                      |                    |



**Stage-Area-Storage for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 335.00              | 0.0                 | 0                       | 336.06              | 7.6                 | 2,420                   |
| 335.02              | 0.1                 | 26                      | 336.08              | 7.8                 | 2,487                   |
| 335.04              | 0.2                 | 52                      | 336.10              | 8.0                 | 2,554                   |
| 335.06              | 0.3                 | 80                      | 336.12              | 8.2                 | 2,621                   |
| 335.08              | 0.3                 | 108                     | 336.14              | 8.5                 | 2,690                   |
| 335.10              | 0.4                 | 137                     | 336.16              | 8.7                 | 2,759                   |
| 335.12              | 0.5                 | 166                     | 336.18              | 8.9                 | 2,829                   |
| 335.14              | 0.6                 | 197                     | 336.20              | 9.1                 | 2,900                   |
| 335.16              | 0.7                 | 228                     | 336.22              | 9.3                 | 2,972                   |
| 335.18              | 0.8                 | 260                     | 336.24              | 9.6                 | 3,044                   |
| 335.20              | 0.9                 | 293                     | 336.26              | 9.8                 | 3,117                   |
| 335.22              | 1.0                 | 326                     | 336.28              | 10.0                | 3,191                   |
| 335.24              | 1.1                 | 360                     | 336.30              | 10.3                | 3,266                   |
| 335.26              | 1.2                 | 395                     | 336.32              | 10.5                | 3,341                   |
| 335.28              | 1.4                 | 431                     | 336.34              | 10.7                | 3,418                   |
| 335.30              | 1.5                 | 467                     | 336.36              | 11.0                | 3,494                   |
| 335.32              | 1.6                 | 505                     | 336.38              | 11.2                | 3,572                   |
| 335.34              | 1.7                 | 543                     | 336.40              | 11.5                | 3,651                   |
| 335.36              | 1.8                 | 582                     | 336.42              | 11.7                | 3,730                   |
| 335.38              | 2.0                 | 621                     | 336.44              | 12.0                | 3,810                   |
| 335.40              | 2.1                 | 661                     | 336.46              | 12.2                | 3,891                   |
| 335.42              | 2.2                 | 703                     | 336.48              | 12.5                | 3,972                   |
| 335.44              | 2.3                 | 744                     | 336.50              | 12.8                | 4,055                   |
| 335.46              | 2.5                 | 787                     | 336.52              | 13.0                | 4,138                   |
| 335.48              | 2.6                 | 830                     | 336.54              | 13.3                | 4,221                   |
| 335.50              | 2.8                 | 875                     | 336.56              | 13.5                | 4,306                   |
| 335.52              | 2.9                 | 919                     | 336.58              | 13.8                | 4,391                   |
| 335.54              | 3.0                 | 965                     | 336.60              | 14.1                | 4,478                   |
| 335.56              | 3.2                 | 1,011                   | 336.62              | 14.4                | 4,564                   |
| 335.58              | 3.3                 | 1,059                   | 336.64              | 14.6                | 4,652                   |
| 335.60              | 3.5                 | 1,107                   | 336.66              | 14.9                | 4,740                   |
| 335.62              | 3.6                 | 1,155                   | 336.68              | 15.2                | 4,830                   |
| 335.64              | 3.8                 | 1,205                   | 336.70              | 15.5                | 4,919                   |
| 335.66              | 3.9                 | 1,255                   | 336.72              | 15.8                | 5,010                   |
| 335.68              | 4.1                 | 1,306                   | 336.74              | <b>16.0</b>         | <b>5,102</b>            |
| 335.70              | 4.3                 | 1,358                   |                     |                     |                         |
| 335.72              | 4.4                 | 1,410                   |                     |                     |                         |
| 335.74              | 4.6                 | 1,464                   |                     |                     |                         |
| 335.76              | 4.8                 | 1,518                   |                     |                     |                         |
| 335.78              | 4.9                 | 1,573                   |                     |                     |                         |
| 335.80              | 5.1                 | 1,628                   |                     |                     |                         |
| 335.82              | 5.3                 | 1,685                   |                     |                     |                         |
| 335.84              | 5.5                 | 1,742                   |                     |                     |                         |
| 335.86              | 5.7                 | 1,800                   |                     |                     |                         |
| 335.88              | 5.8                 | 1,858                   |                     |                     |                         |
| 335.90              | 6.0                 | 1,918                   |                     |                     |                         |
| 335.92              | 6.2                 | 1,978                   |                     |                     |                         |
| 335.94              | 6.4                 | 2,039                   |                     |                     |                         |
| 335.96              | 6.6                 | 2,100                   |                     |                     |                         |
| 335.98              | 6.8                 | 2,163                   |                     |                     |                         |
| 336.00              | 7.0                 | 2,226                   |                     |                     |                         |
| 336.02              | 7.2                 | 2,290                   |                     |                     |                         |
| 336.04              | 7.4                 | 2,355                   |                     |                     |                         |

**Summary for Reach R8: Proposed RRv Swale**

Inflow Area = 2.075 ac, 33.06% Impervious, Inflow Depth = 1.42" for 100-yr event  
 Inflow = 1.15 cfs @ 12.83 hrs, Volume= 0.245 af  
 Outflow = 1.11 cfs @ 12.97 hrs, Volume= 0.245 af, Atten= 3%, Lag= 8.3 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.97 fps, Min. Travel Time= 9.8 min  
 Avg. Velocity = 0.36 fps, Avg. Travel Time= 26.5 min

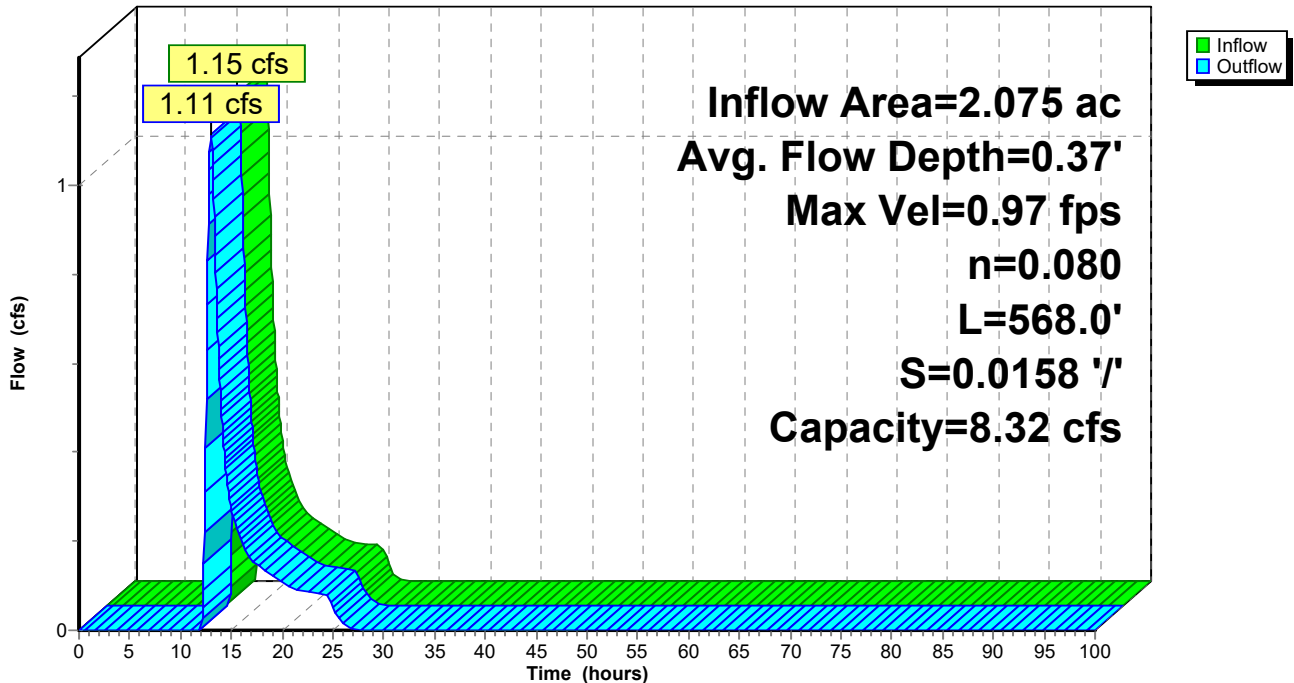
Peak Storage= 655 cf @ 12.97 hrs  
 Average Depth at Peak Storage= 0.37' , Surface Width= 4.22'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 8.32 cfs

2.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/ Top Width= 8.00'  
 Length= 568.0' Slope= 0.0158 '/  
 Inlet Invert= 340.00', Outlet Invert= 331.00'

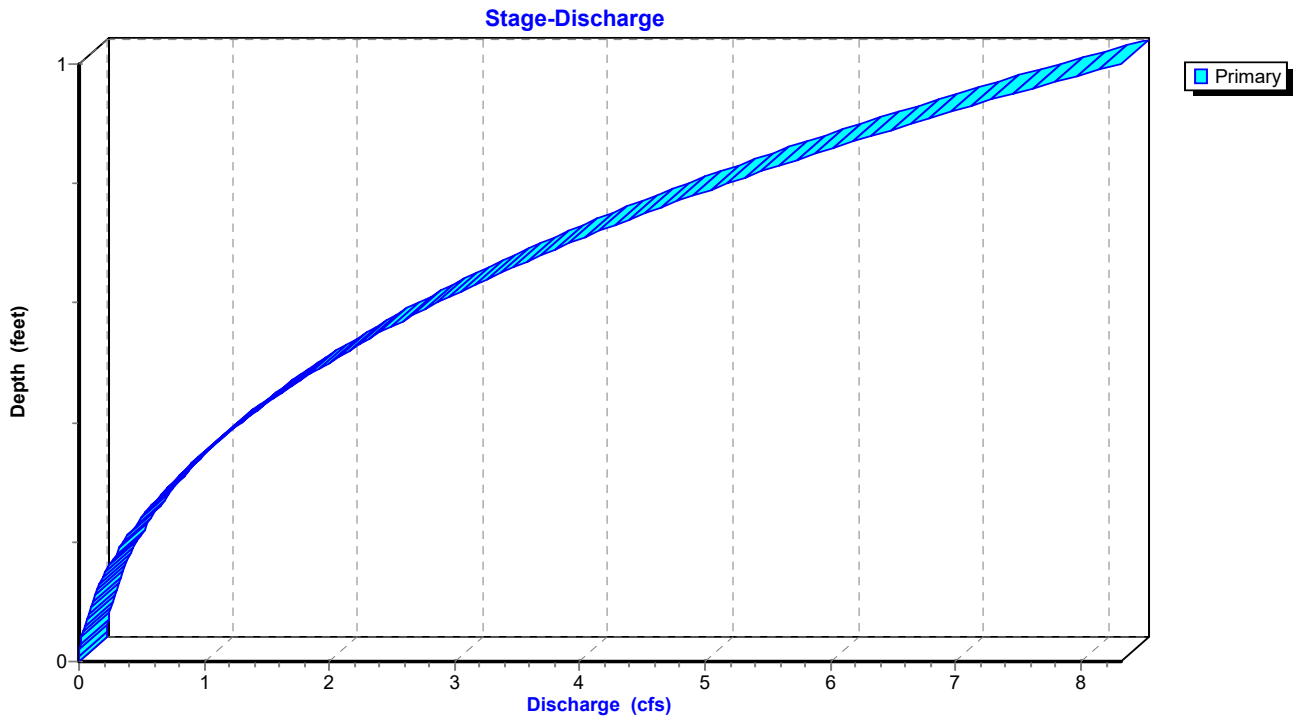


**Reach R8: Proposed RRv Swale**

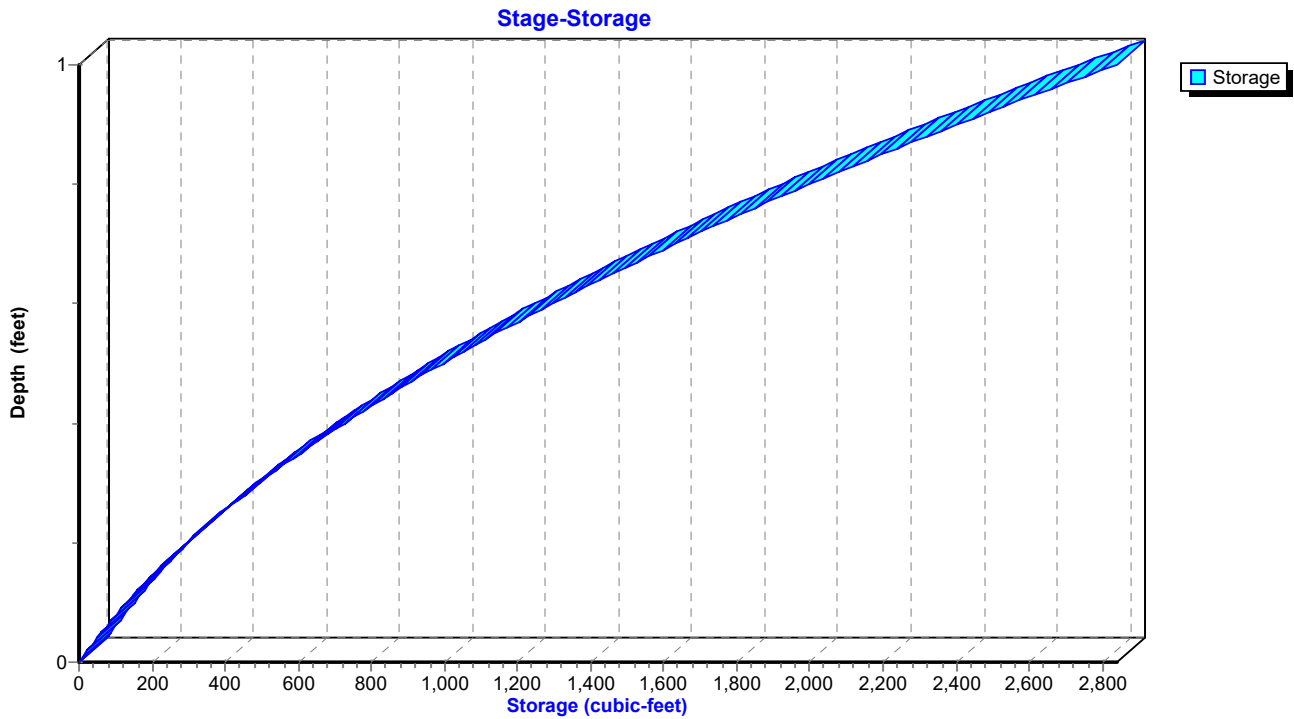
Hydrograph



### Reach R8: Proposed RRv Swale



### Reach R8: Proposed RRv Swale



**Hydrograph for Reach R8: Proposed RRv Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 340.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 340.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 340.00              | 0.00             |
| 7.50            | 0.00            | 0                       | 340.00              | 0.00             |
| 10.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 12.50           | <b>0.83</b>     | <b>382</b>              | <b>340.25</b>       | <b>0.52</b>      |
| 15.00           | <b>0.25</b>     | <b>245</b>              | <b>340.17</b>       | <b>0.27</b>      |
| 17.50           | 0.14            | 162                     | 340.12              | 0.15             |
| 20.00           | 0.10            | 132                     | 340.10              | 0.11             |
| 22.50           | 0.08            | 114                     | 340.09              | 0.09             |
| 25.00           | 0.04            | 85                      | 340.07              | 0.05             |
| 27.50           | 0.00            | 11                      | 340.01              | 0.00             |
| 30.00           | 0.00            | 2                       | 340.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 340.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 340.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 340.00              | 0.00             |

**Stage-Discharge for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 340.00              | 0.00                 | 0.00               | 340.53              | 1.17                 | 2.23               |
| 340.01              | 0.11                 | 0.00               | 340.54              | 1.19                 | 2.32               |
| 340.02              | 0.17                 | 0.01               | 340.55              | 1.20                 | 2.40               |
| 340.03              | 0.22                 | 0.01               | 340.56              | 1.21                 | 2.49               |
| 340.04              | 0.26                 | 0.02               | 340.57              | 1.22                 | 2.58               |
| 340.05              | 0.30                 | 0.03               | 340.58              | 1.23                 | 2.67               |
| 340.06              | 0.34                 | 0.04               | 340.59              | 1.24                 | 2.77               |
| 340.07              | 0.37                 | 0.06               | 340.60              | 1.26                 | 2.86               |
| 340.08              | 0.40                 | 0.07               | 340.61              | 1.27                 | 2.96               |
| 340.09              | 0.43                 | 0.09               | 340.62              | 1.28                 | 3.06               |
| 340.10              | 0.46                 | 0.11               | 340.63              | 1.29                 | 3.16               |
| 340.11              | 0.49                 | 0.12               | 340.64              | 1.30                 | 3.26               |
| 340.12              | 0.51                 | 0.15               | 340.65              | 1.31                 | 3.37               |
| 340.13              | 0.54                 | 0.17               | 340.66              | 1.32                 | 3.47               |
| 340.14              | 0.56                 | 0.19               | 340.67              | 1.33                 | 3.58               |
| 340.15              | 0.58                 | 0.21               | 340.68              | 1.34                 | 3.69               |
| 340.16              | 0.61                 | 0.24               | 340.69              | 1.36                 | 3.81               |
| 340.17              | 0.63                 | 0.27               | 340.70              | 1.37                 | 3.92               |
| 340.18              | 0.65                 | 0.30               | 340.71              | 1.38                 | 4.04               |
| 340.19              | 0.67                 | 0.33               | 340.72              | 1.39                 | 4.16               |
| 340.20              | 0.69                 | 0.36               | 340.73              | 1.40                 | 4.28               |
| 340.21              | 0.71                 | 0.39               | 340.74              | 1.41                 | 4.40               |
| 340.22              | 0.72                 | 0.42               | 340.75              | 1.42                 | 4.52               |
| 340.23              | 0.74                 | 0.46               | 340.76              | 1.43                 | 4.65               |
| 340.24              | 0.76                 | 0.50               | 340.77              | 1.44                 | 4.78               |
| 340.25              | 0.78                 | 0.53               | 340.78              | 1.45                 | 4.91               |
| 340.26              | 0.80                 | 0.57               | 340.79              | 1.46                 | 5.04               |
| 340.27              | 0.81                 | 0.62               | 340.80              | 1.47                 | 5.18               |
| 340.28              | 0.83                 | 0.66               | 340.81              | 1.48                 | 5.31               |
| 340.29              | 0.84                 | 0.70               | 340.82              | 1.49                 | 5.45               |
| 340.30              | 0.86                 | 0.75               | 340.83              | 1.50                 | 5.59               |
| 340.31              | 0.88                 | 0.80               | 340.84              | 1.51                 | 5.73               |
| 340.32              | 0.89                 | 0.84               | 340.85              | 1.52                 | 5.88               |
| 340.33              | 0.91                 | 0.89               | 340.86              | 1.53                 | 6.03               |
| 340.34              | 0.92                 | 0.95               | 340.87              | 1.54                 | 6.18               |
| 340.35              | 0.94                 | 1.00               | 340.88              | 1.55                 | 6.33               |
| 340.36              | 0.95                 | 1.05               | 340.89              | 1.56                 | 6.48               |
| 340.37              | 0.96                 | 1.11               | 340.90              | 1.57                 | 6.64               |
| 340.38              | 0.98                 | 1.17               | 340.91              | 1.58                 | 6.80               |
| 340.39              | 0.99                 | 1.23               | 340.92              | 1.59                 | 6.96               |
| 340.40              | 1.01                 | 1.29               | 340.93              | 1.60                 | 7.12               |
| 340.41              | 1.02                 | 1.35               | 340.94              | 1.61                 | 7.29               |
| 340.42              | 1.03                 | 1.42               | 340.95              | 1.62                 | 7.45               |
| 340.43              | 1.05                 | 1.48               | 340.96              | 1.63                 | 7.62               |
| 340.44              | 1.06                 | 1.55               | 340.97              | 1.64                 | 7.79               |
| 340.45              | 1.07                 | 1.62               | 340.98              | 1.65                 | 7.97               |
| 340.46              | 1.09                 | 1.69               | 340.99              | 1.66                 | 8.14               |
| 340.47              | 1.10                 | 1.76               | 341.00              | <b>1.66</b>          | <b>8.32</b>        |
| 340.48              | 1.11                 | 1.84               |                     |                      |                    |
| 340.49              | 1.12                 | 1.91               |                     |                      |                    |
| 340.50              | 1.14                 | 1.99               |                     |                      |                    |
| 340.51              | 1.15                 | 2.07               |                     |                      |                    |
| 340.52              | 1.16                 | 2.15               |                     |                      |                    |

**Stage-Area-Storage for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 340.00              | 0.0                 | 0                       | 340.53              | 1.9                 | 1,081                   |
| 340.01              | 0.0                 | 12                      | 340.54              | 2.0                 | 1,110                   |
| 340.02              | 0.0                 | 23                      | 340.55              | 2.0                 | 1,140                   |
| 340.03              | 0.1                 | 36                      | 340.56              | 2.1                 | 1,171                   |
| 340.04              | 0.1                 | 48                      | 340.57              | 2.1                 | 1,201                   |
| 340.05              | 0.1                 | 61                      | 340.58              | 2.2                 | 1,232                   |
| 340.06              | 0.1                 | 74                      | 340.59              | 2.2                 | 1,263                   |
| 340.07              | 0.2                 | 88                      | 340.60              | 2.3                 | 1,295                   |
| 340.08              | 0.2                 | 102                     | 340.61              | 2.3                 | 1,327                   |
| 340.09              | 0.2                 | 116                     | 340.62              | 2.4                 | 1,359                   |
| 340.10              | 0.2                 | 131                     | 340.63              | 2.5                 | 1,392                   |
| 340.11              | 0.3                 | 146                     | 340.64              | 2.5                 | 1,425                   |
| 340.12              | 0.3                 | 161                     | 340.65              | 2.6                 | 1,458                   |
| 340.13              | 0.3                 | 176                     | 340.66              | 2.6                 | 1,492                   |
| 340.14              | 0.3                 | 192                     | 340.67              | 2.7                 | 1,526                   |
| 340.15              | 0.4                 | 209                     | 340.68              | 2.7                 | 1,560                   |
| 340.16              | 0.4                 | 225                     | 340.69              | 2.8                 | 1,595                   |
| 340.17              | 0.4                 | 242                     | 340.70              | 2.9                 | 1,630                   |
| 340.18              | 0.5                 | 260                     | 340.71              | 2.9                 | 1,666                   |
| 340.19              | 0.5                 | 277                     | 340.72              | 3.0                 | 1,701                   |
| 340.20              | 0.5                 | 295                     | 340.73              | 3.1                 | 1,737                   |
| 340.21              | 0.6                 | 314                     | 340.74              | 3.1                 | 1,774                   |
| 340.22              | 0.6                 | 332                     | 340.75              | 3.2                 | 1,811                   |
| 340.23              | 0.6                 | 351                     | 340.76              | 3.3                 | 1,848                   |
| 340.24              | 0.7                 | 371                     | 340.77              | 3.3                 | 1,885                   |
| 340.25              | 0.7                 | 391                     | 340.78              | 3.4                 | 1,923                   |
| 340.26              | 0.7                 | 411                     | 340.79              | 3.5                 | 1,961                   |
| 340.27              | 0.8                 | 431                     | 340.80              | 3.5                 | 1,999                   |
| 340.28              | 0.8                 | 452                     | 340.81              | 3.6                 | 2,038                   |
| 340.29              | 0.8                 | 473                     | 340.82              | 3.7                 | 2,077                   |
| 340.30              | 0.9                 | 494                     | 340.83              | 3.7                 | 2,117                   |
| 340.31              | 0.9                 | 516                     | 340.84              | 3.8                 | 2,157                   |
| 340.32              | 0.9                 | 538                     | 340.85              | 3.9                 | 2,197                   |
| 340.33              | 1.0                 | 560                     | 340.86              | 3.9                 | 2,237                   |
| 340.34              | 1.0                 | 583                     | 340.87              | 4.0                 | 2,278                   |
| 340.35              | 1.1                 | 606                     | 340.88              | 4.1                 | 2,319                   |
| 340.36              | 1.1                 | 630                     | 340.89              | 4.2                 | 2,361                   |
| 340.37              | 1.2                 | 654                     | 340.90              | 4.2                 | 2,403                   |
| 340.38              | 1.2                 | 678                     | 340.91              | 4.3                 | 2,445                   |
| 340.39              | 1.2                 | 702                     | 340.92              | 4.4                 | 2,487                   |
| 340.40              | 1.3                 | 727                     | 340.93              | 4.5                 | 2,530                   |
| 340.41              | 1.3                 | 752                     | 340.94              | 4.5                 | 2,573                   |
| 340.42              | 1.4                 | 778                     | 340.95              | 4.6                 | 2,617                   |
| 340.43              | 1.4                 | 804                     | 340.96              | 4.7                 | 2,661                   |
| 340.44              | 1.5                 | 830                     | 340.97              | 4.8                 | 2,705                   |
| 340.45              | 1.5                 | 856                     | 340.98              | 4.8                 | 2,750                   |
| 340.46              | 1.6                 | 883                     | 340.99              | 4.9                 | 2,795                   |
| 340.47              | 1.6                 | 910                     | 341.00              | <b>5.0</b>          | <b>2,840</b>            |
| 340.48              | 1.7                 | 938                     |                     |                     |                         |
| 340.49              | 1.7                 | 966                     |                     |                     |                         |
| 340.50              | 1.8                 | 994                     |                     |                     |                         |
| 340.51              | 1.8                 | 1,023                   |                     |                     |                         |
| 340.52              | 1.9                 | 1,051                   |                     |                     |                         |

### Summary for Reach R9: Proposed RRV Swale

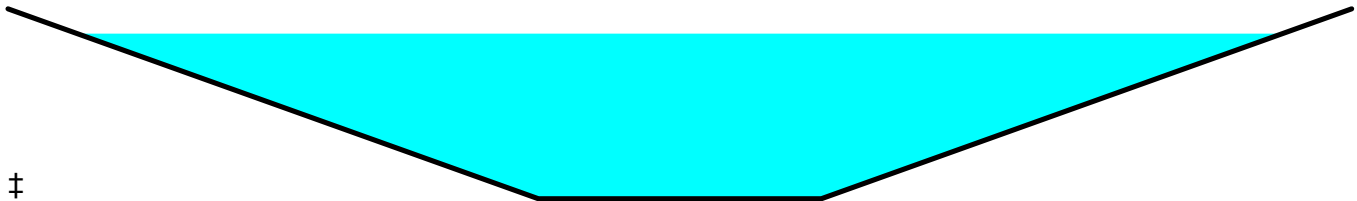
[55] Hint: Peak inflow is 109% of Manning's capacity

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 4.53" for 100-yr event  
Inflow = 8.73 cfs @ 12.01 hrs, Volume= 0.490 af  
Outflow = 5.91 cfs @ 12.10 hrs, Volume= 0.490 af, Atten= 32%, Lag= 5.5 min  
Routed to Pond 6P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 1.03 fps, Min. Travel Time= 12.3 min  
Avg. Velocity = 0.22 fps, Avg. Travel Time= 57.3 min

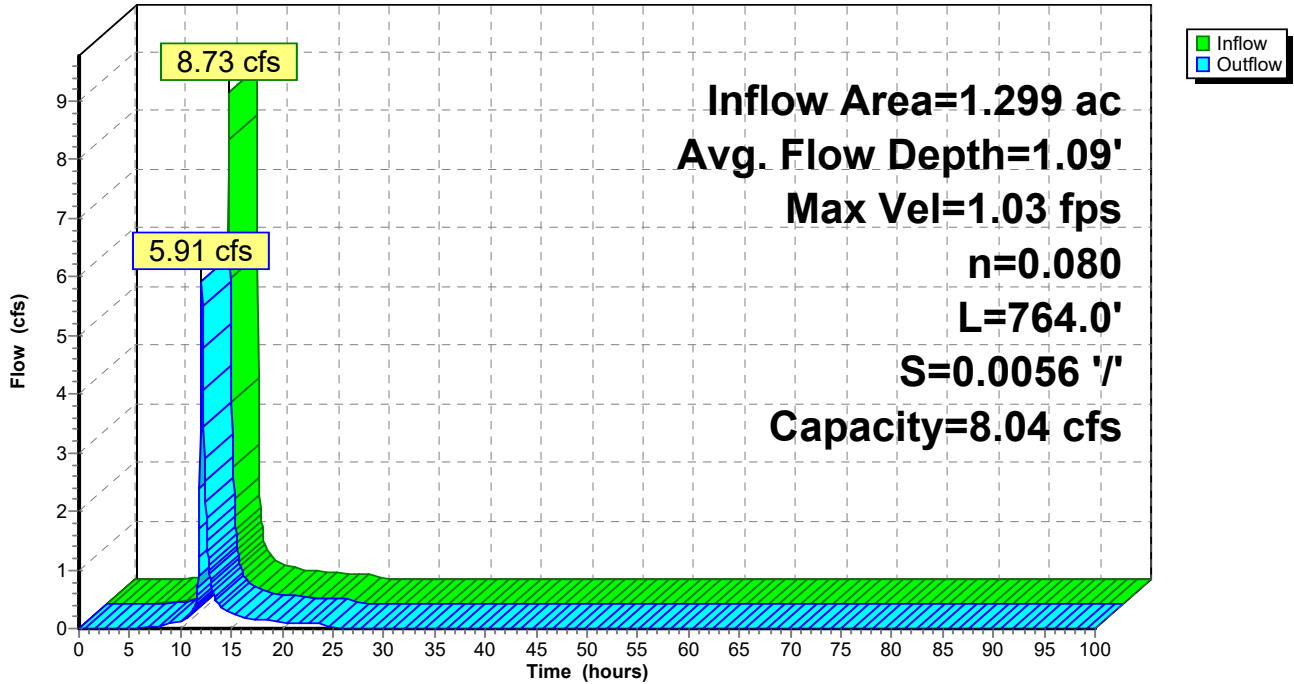
Peak Storage= 4,369 cf @ 12.10 hrs  
Average Depth at Peak Storage= 1.09' , Surface Width= 8.52'  
Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 8.04 cfs

2.00' x 1.25' deep channel, n= 0.080 Earth, long dense weeds  
Side Slope Z-value= 3.0 '/' Top Width= 9.50'  
Length= 764.0' Slope= 0.0056 '/'  
Inlet Invert= 337.00', Outlet Invert= 332.75'



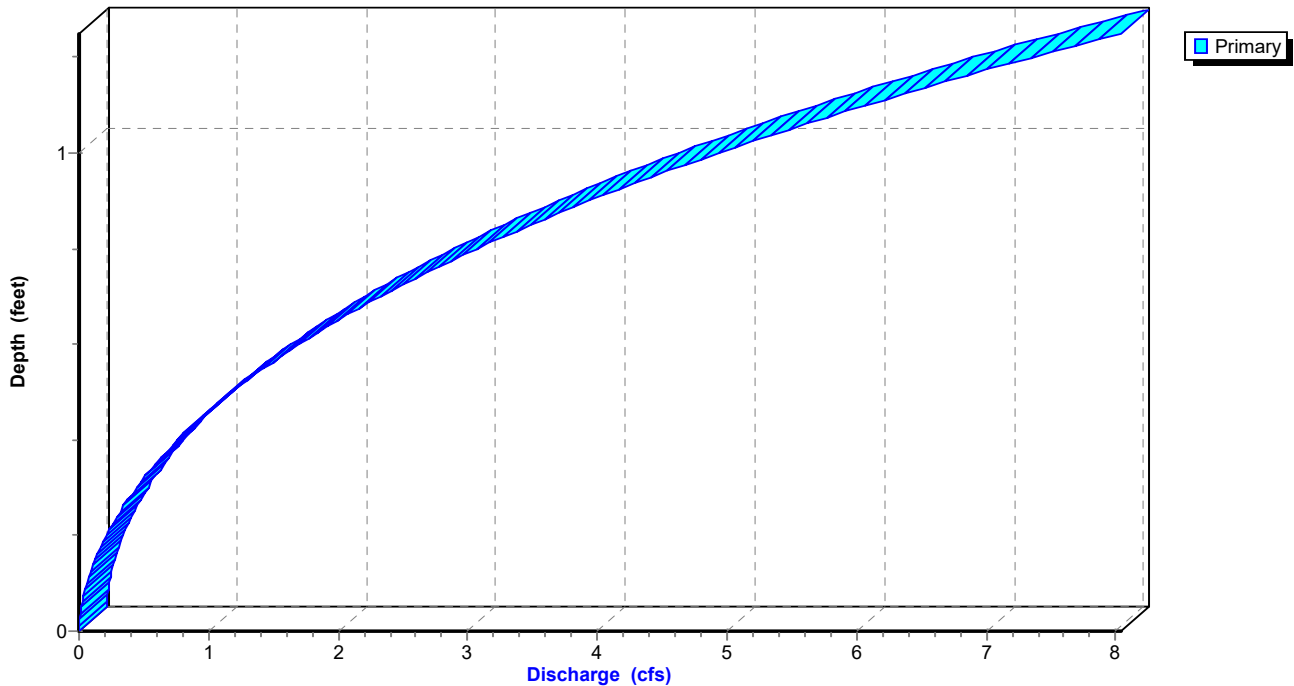
Reach R9: Proposed RRV Swale

Hydrograph



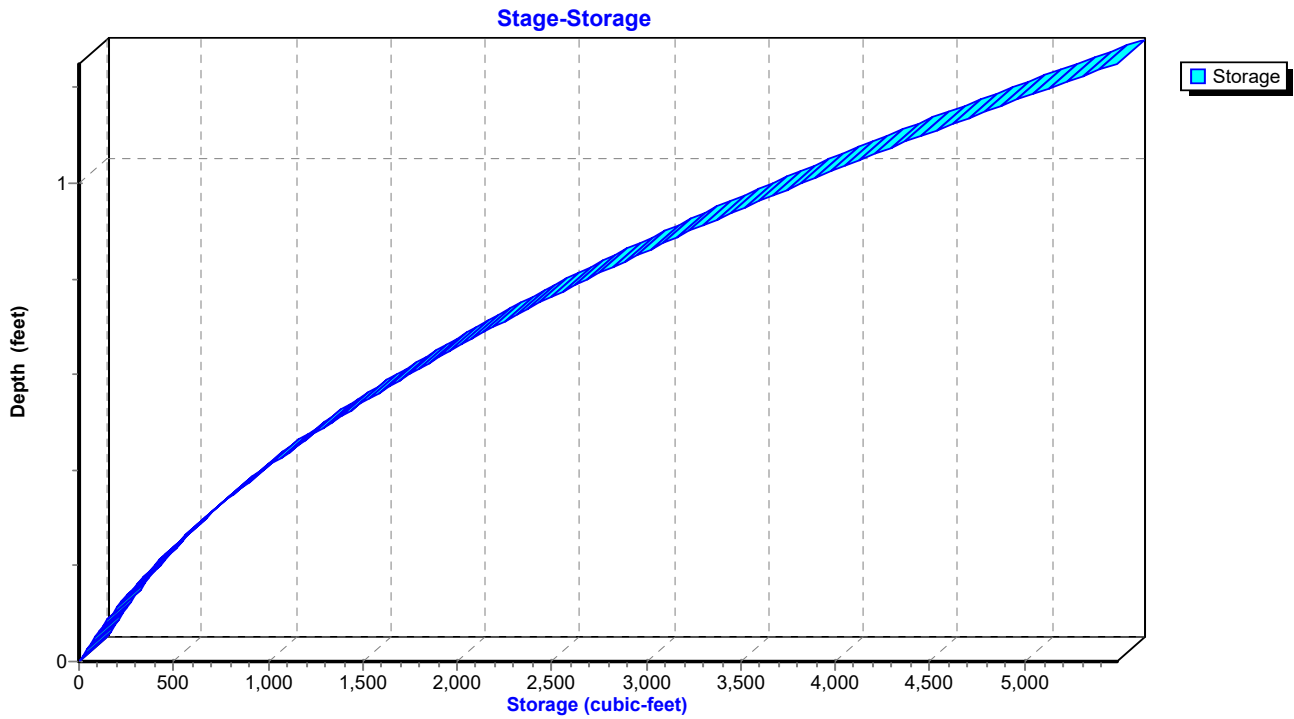
Reach R9: Proposed RRV Swale

Stage-Discharge





### Reach R9: Proposed RRV Swale



**Hydrograph for Reach R9: Proposed RRV Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 337.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 337.00              | 0.00             |
| 5.00            | 0.00            | 2                       | 337.00              | 0.00             |
| 7.50            | 0.05            | 115                     | 337.07              | 0.03             |
| 10.00           | <b>0.16</b>     | <b>281</b>              | <b>337.15</b>       | <b>0.13</b>      |
| 12.50           | <b>0.90</b>     | <b>1,886</b>            | <b>337.63</b>       | <b>1.89</b>      |
| 15.00           | 0.24            | 453                     | 337.22              | 0.26             |
| 17.50           | 0.15            | 325                     | 337.17              | 0.16             |
| 20.00           | 0.10            | 256                     | 337.14              | 0.11             |
| 22.50           | 0.09            | 228                     | 337.13              | 0.09             |
| 25.00           | 0.00            | 85                      | 337.05              | 0.02             |
| 27.50           | 0.00            | 21                      | 337.01              | 0.00             |
| 30.00           | 0.00            | 9                       | 337.01              | 0.00             |
| 32.50           | 0.00            | 4                       | 337.00              | 0.00             |
| 35.00           | 0.00            | 2                       | 337.00              | 0.00             |
| 37.50           | 0.00            | 1                       | 337.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 337.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 337.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 337.00              | 0.00             |

**Stage-Discharge for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.00              | 0.00                 | 0.00               | 337.53              | 0.70                 | 1.32               | 338.06              | 1.02                 | 5.60               |
| 337.01              | 0.06                 | 0.00               | 337.54              | 0.70                 | 1.37               | 338.07              | 1.02                 | 5.71               |
| 337.02              | 0.10                 | 0.00               | 337.55              | 0.71                 | 1.42               | 338.08              | 1.03                 | 5.83               |
| 337.03              | 0.13                 | 0.01               | 337.56              | 0.72                 | 1.48               | 338.09              | 1.04                 | 5.95               |
| 337.04              | 0.16                 | 0.01               | 337.57              | 0.72                 | 1.53               | 338.10              | 1.04                 | 6.07               |
| 337.05              | 0.18                 | 0.02               | 337.58              | 0.73                 | 1.58               | 338.11              | 1.05                 | 6.19               |
| 337.06              | 0.20                 | 0.03               | 337.59              | 0.74                 | 1.64               | 338.12              | 1.05                 | 6.31               |
| 337.07              | 0.22                 | 0.03               | 337.60              | 0.74                 | 1.70               | 338.13              | 1.06                 | 6.43               |
| 337.08              | 0.24                 | 0.04               | 337.61              | 0.75                 | 1.75               | 338.14              | 1.06                 | 6.56               |
| 337.09              | 0.26                 | 0.05               | 337.62              | 0.76                 | 1.81               | 338.15              | 1.07                 | 6.69               |
| 337.10              | 0.27                 | 0.06               | 337.63              | 0.76                 | 1.87               | 338.16              | 1.07                 | 6.82               |
| 337.11              | 0.29                 | 0.07               | 337.64              | 0.77                 | 1.93               | 338.17              | 1.08                 | 6.95               |
| 337.12              | 0.30                 | 0.09               | 337.65              | 0.78                 | 2.00               | 338.18              | 1.08                 | 7.08               |
| 337.13              | 0.32                 | 0.10               | 337.66              | 0.78                 | 2.06               | 338.19              | 1.09                 | 7.21               |
| 337.14              | 0.33                 | 0.11               | 337.67              | 0.79                 | 2.12               | 338.20              | 1.09                 | 7.35               |
| 337.15              | 0.35                 | 0.13               | 337.68              | 0.80                 | 2.19               | 338.21              | 1.10                 | 7.48               |
| 337.16              | 0.36                 | 0.14               | 337.69              | 0.80                 | 2.26               | 338.22              | 1.10                 | 7.62               |
| 337.17              | 0.37                 | 0.16               | 337.70              | 0.81                 | 2.32               | 338.23              | 1.11                 | 7.76               |
| 337.18              | 0.38                 | 0.18               | 337.71              | 0.82                 | 2.39               | 338.24              | 1.11                 | 7.90               |
| 337.19              | 0.40                 | 0.19               | 337.72              | 0.82                 | 2.46               | 338.25              | <b>1.12</b>          | <b>8.04</b>        |
| 337.20              | 0.41                 | 0.21               | 337.73              | 0.83                 | 2.53               |                     |                      |                    |
| 337.21              | 0.42                 | 0.23               | 337.74              | 0.83                 | 2.61               |                     |                      |                    |
| 337.22              | 0.43                 | 0.25               | 337.75              | 0.84                 | 2.68               |                     |                      |                    |
| 337.23              | 0.44                 | 0.27               | 337.76              | 0.85                 | 2.75               |                     |                      |                    |
| 337.24              | 0.45                 | 0.29               | 337.77              | 0.85                 | 2.83               |                     |                      |                    |
| 337.25              | 0.46                 | 0.32               | 337.78              | 0.86                 | 2.91               |                     |                      |                    |
| 337.26              | 0.47                 | 0.34               | 337.79              | 0.87                 | 2.99               |                     |                      |                    |
| 337.27              | 0.48                 | 0.37               | 337.80              | 0.87                 | 3.07               |                     |                      |                    |
| 337.28              | 0.49                 | 0.39               | 337.81              | 0.88                 | 3.15               |                     |                      |                    |
| 337.29              | 0.50                 | 0.42               | 337.82              | 0.88                 | 3.23               |                     |                      |                    |
| 337.30              | 0.51                 | 0.44               | 337.83              | 0.89                 | 3.31               |                     |                      |                    |
| 337.31              | 0.52                 | 0.47               | 337.84              | 0.89                 | 3.40               |                     |                      |                    |
| 337.32              | 0.53                 | 0.50               | 337.85              | 0.90                 | 3.48               |                     |                      |                    |
| 337.33              | 0.54                 | 0.53               | 337.86              | 0.91                 | 3.57               |                     |                      |                    |
| 337.34              | 0.55                 | 0.56               | 337.87              | 0.91                 | 3.66               |                     |                      |                    |
| 337.35              | 0.55                 | 0.59               | 337.88              | 0.92                 | 3.75               |                     |                      |                    |
| 337.36              | 0.56                 | 0.62               | 337.89              | 0.92                 | 3.84               |                     |                      |                    |
| 337.37              | 0.57                 | 0.66               | 337.90              | 0.93                 | 3.93               |                     |                      |                    |
| 337.38              | 0.58                 | 0.69               | 337.91              | 0.94                 | 4.03               |                     |                      |                    |
| 337.39              | 0.59                 | 0.73               | 337.92              | 0.94                 | 4.12               |                     |                      |                    |
| 337.40              | 0.60                 | 0.76               | 337.93              | 0.95                 | 4.22               |                     |                      |                    |
| 337.41              | 0.60                 | 0.80               | 337.94              | 0.95                 | 4.32               |                     |                      |                    |
| 337.42              | 0.61                 | 0.84               | 337.95              | 0.96                 | 4.42               |                     |                      |                    |
| 337.43              | 0.62                 | 0.88               | 337.96              | 0.96                 | 4.52               |                     |                      |                    |
| 337.44              | 0.63                 | 0.92               | 337.97              | 0.97                 | 4.62               |                     |                      |                    |
| 337.45              | 0.64                 | 0.96               | 337.98              | 0.98                 | 4.72               |                     |                      |                    |
| 337.46              | 0.64                 | 1.00               | 337.99              | 0.98                 | 4.83               |                     |                      |                    |
| 337.47              | 0.65                 | 1.04               | 338.00              | 0.99                 | 4.93               |                     |                      |                    |
| 337.48              | 0.66                 | 1.09               | 338.01              | 0.99                 | 5.04               |                     |                      |                    |
| 337.49              | 0.67                 | 1.13               | 338.02              | 1.00                 | 5.15               |                     |                      |                    |
| 337.50              | 0.67                 | 1.18               | 338.03              | 1.00                 | 5.26               |                     |                      |                    |
| 337.51              | 0.68                 | 1.23               | 338.04              | 1.01                 | 5.37               |                     |                      |                    |
| 337.52              | 0.69                 | 1.27               | 338.05              | 1.01                 | 5.48               |                     |                      |                    |

**Stage-Area-Storage for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.00              | 0.0                 | 0                       | 338.06              | 5.5                 | 4,195                   |
| 337.02              | 0.0                 | 32                      | 338.08              | 5.7                 | 4,324                   |
| 337.04              | 0.1                 | 65                      | 338.10              | 5.8                 | 4,454                   |
| 337.06              | 0.1                 | 100                     | 338.12              | 6.0                 | 4,587                   |
| 337.08              | 0.2                 | 137                     | 338.14              | 6.2                 | 4,721                   |
| 337.10              | 0.2                 | 176                     | 338.16              | 6.4                 | 4,857                   |
| 337.12              | 0.3                 | 216                     | 338.18              | 6.5                 | 4,995                   |
| 337.14              | 0.3                 | 259                     | 338.20              | 6.7                 | 5,134                   |
| 337.16              | 0.4                 | 303                     | 338.22              | 6.9                 | 5,276                   |
| 337.18              | 0.5                 | 349                     | 338.24              | <b>7.1</b>          | <b>5,419</b>            |
| 337.20              | 0.5                 | 397                     |                     |                     |                         |
| 337.22              | 0.6                 | 447                     |                     |                     |                         |
| 337.24              | 0.7                 | 499                     |                     |                     |                         |
| 337.26              | 0.7                 | 552                     |                     |                     |                         |
| 337.28              | 0.8                 | 608                     |                     |                     |                         |
| 337.30              | 0.9                 | 665                     |                     |                     |                         |
| 337.32              | 0.9                 | 724                     |                     |                     |                         |
| 337.34              | 1.0                 | 785                     |                     |                     |                         |
| 337.36              | 1.1                 | 847                     |                     |                     |                         |
| 337.38              | 1.2                 | 912                     |                     |                     |                         |
| 337.40              | 1.3                 | 978                     |                     |                     |                         |
| 337.42              | 1.4                 | 1,046                   |                     |                     |                         |
| 337.44              | 1.5                 | 1,116                   |                     |                     |                         |
| 337.46              | 1.6                 | 1,188                   |                     |                     |                         |
| 337.48              | 1.7                 | 1,262                   |                     |                     |                         |
| 337.50              | 1.8                 | 1,337                   |                     |                     |                         |
| 337.52              | 1.9                 | 1,414                   |                     |                     |                         |
| 337.54              | 2.0                 | 1,494                   |                     |                     |                         |
| 337.56              | 2.1                 | 1,575                   |                     |                     |                         |
| 337.58              | 2.2                 | 1,657                   |                     |                     |                         |
| 337.60              | 2.3                 | 1,742                   |                     |                     |                         |
| 337.62              | 2.4                 | 1,828                   |                     |                     |                         |
| 337.64              | 2.5                 | 1,917                   |                     |                     |                         |
| 337.66              | 2.6                 | 2,007                   |                     |                     |                         |
| 337.68              | 2.7                 | 2,099                   |                     |                     |                         |
| 337.70              | 2.9                 | 2,193                   |                     |                     |                         |
| 337.72              | 3.0                 | 2,288                   |                     |                     |                         |
| 337.74              | 3.1                 | 2,386                   |                     |                     |                         |
| 337.76              | 3.3                 | 2,485                   |                     |                     |                         |
| 337.78              | 3.4                 | 2,586                   |                     |                     |                         |
| 337.80              | 3.5                 | 2,689                   |                     |                     |                         |
| 337.82              | 3.7                 | 2,794                   |                     |                     |                         |
| 337.84              | 3.8                 | 2,901                   |                     |                     |                         |
| 337.86              | 3.9                 | 3,009                   |                     |                     |                         |
| 337.88              | 4.1                 | 3,120                   |                     |                     |                         |
| 337.90              | 4.2                 | 3,232                   |                     |                     |                         |
| 337.92              | 4.4                 | 3,346                   |                     |                     |                         |
| 337.94              | 4.5                 | 3,462                   |                     |                     |                         |
| 337.96              | 4.7                 | 3,579                   |                     |                     |                         |
| 337.98              | 4.8                 | 3,699                   |                     |                     |                         |
| 338.00              | 5.0                 | 3,820                   |                     |                     |                         |
| 338.02              | 5.2                 | 3,943                   |                     |                     |                         |
| 338.04              | 5.3                 | 4,068                   |                     |                     |                         |

**Summary for Pond 4P: Proposed Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 1.50" for 100-yr event  
 Inflow = 9.30 cfs @ 12.43 hrs, Volume= 1.274 af  
 Outflow = 9.29 cfs @ 12.45 hrs, Volume= 1.273 af, Atten= 0%, Lag= 1.3 min  
 Primary = 2.01 cfs @ 12.45 hrs, Volume= 0.798 af  
 Routed to Reach R12 : 12" Culvert Pond Discharge  
 Secondary = 7.28 cfs @ 12.45 hrs, Volume= 0.475 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.00' Surf.Area= 1,864 sf Storage= 1,362 cf  
 Peak Elev= 338.72' @ 12.45 hrs Surf.Area= 7,442 sf Storage= 6,223 cf (4,862 cf above start)

Plug-Flow detention time= 119.3 min calculated for 1.242 af (97% of inflow)  
 Center-of-Mass det. time= 98.2 min ( 1,009.4 - 911.2 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 338.50' | 5,344 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 335.00' | 3,537 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 334.50' | 1,862 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 10,742 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 338.50           | 3,608             | 353.0         | 0                      | 0                      | 3,608            |
| 339.00           | 4,127             | 266.0         | 1,932                  | 1,932                  | 7,896            |
| 339.75           | 4,983             | 287.0         | 3,411                  | 5,344                  | 8,843            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 335.00           | 29                | 23.0          | 0                      | 0                      | 29               |
| 336.00           | 189               | 66.0          | 97                     | 97                     | 337              |
| 337.00           | 1,332             | 155.0         | 674                    | 772                    | 1,906            |
| 338.00           | 2,017             | 182.0         | 1,663                  | 2,434                  | 2,649            |
| 338.50           | 2,399             | 200.0         | 1,103                  | 3,537                  | 3,205            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 334.50           | 3                 | 7.6           | 0                      | 0                      | 3                |
| 335.00           | 83                | 48.0          | 17                     | 17                     | 182              |
| 336.00           | 282               | 74.0          | 173                    | 190                    | 442              |
| 337.00           | 532               | 93.0          | 400                    | 590                    | 708              |
| 338.00           | 953               | 118.0         | 732                    | 1,322                  | 1,141            |
| 338.50           | 1,209             | 136.0         | 539                    | 1,862                  | 1,510            |

| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 338.50' | <b>26.0' long x 17.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2     | Primary   | 338.50' | <b>12.0" Horiz. Orifice/Grate</b> C= 0.600   |

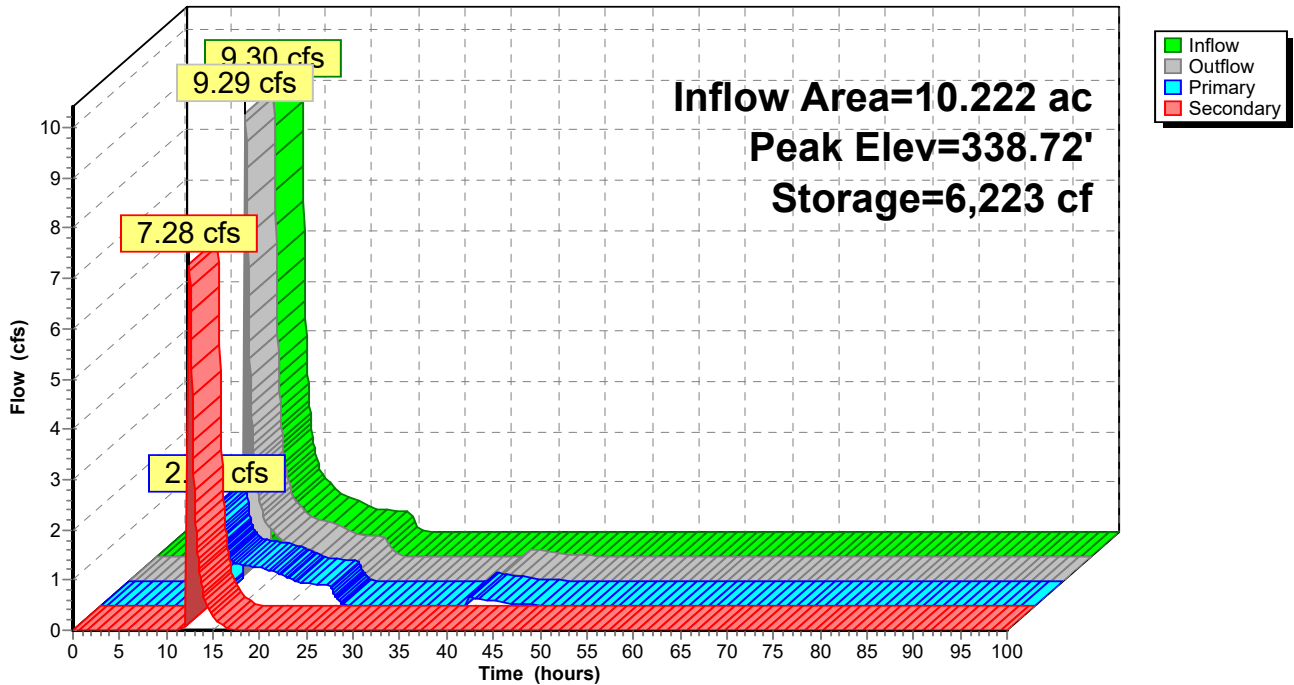
|    |         |         |                                   |          |                                   |
|----|---------|---------|-----------------------------------|----------|-----------------------------------|
|    |         |         | Limited to weir flow at low heads |          |                                   |
| #3 | Primary | 337.86' | <b>6.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |
| #4 | Primary | 337.00' | <b>3.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |

**Primary OutFlow** Max=2.01 cfs @ 12.45 hrs HW=338.72' TW=338.01' (Dynamic Tailwater)  
 ↳ **2=Orifice/Grate** (Weir Controls 1.07 cfs @ 1.54 fps)  
 ↳ **3=Orifice/Grate** (Orifice Controls 0.74 cfs @ 3.77 fps)  
 ↳ **4=Orifice/Grate** (Orifice Controls 0.20 cfs @ 4.06 fps)

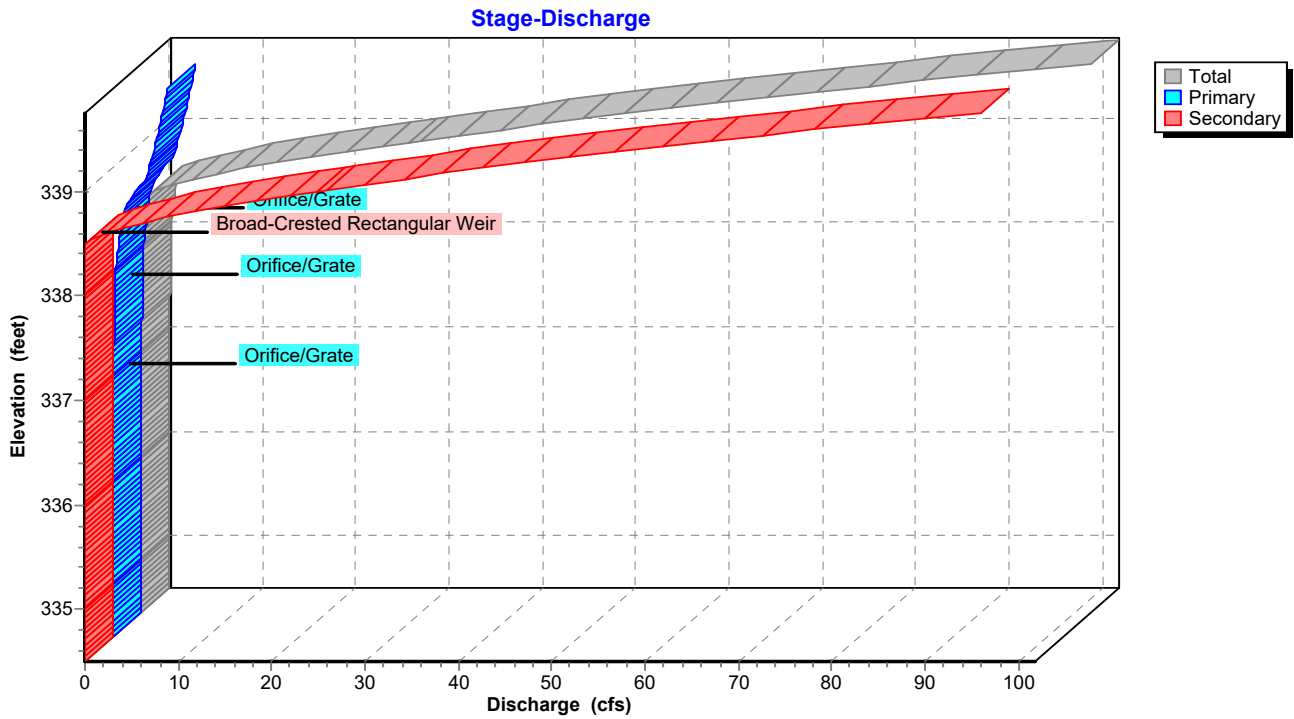
**Secondary OutFlow** Max=7.27 cfs @ 12.45 hrs HW=338.72' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 7.27 cfs @ 1.26 fps)

**Pond 4P: Proposed Stormwater Pond**

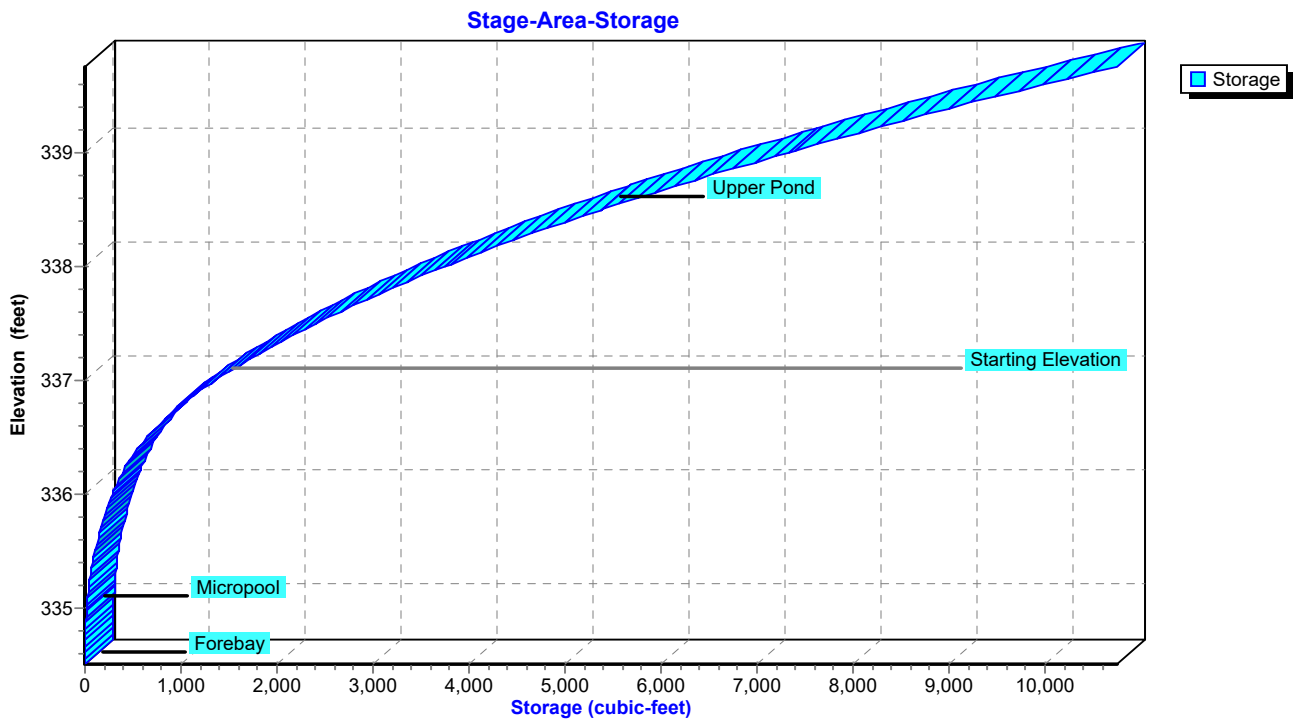
Hydrograph



### Pond 4P: Proposed Stormwater Pond



### Pond 4P: Proposed Stormwater Pond



**Hydrograph for Pond 4P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 2.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.00</b>  | <b>1,362</b>         | <b>337.00</b>    | <b>0.00</b>   | <b>0.00</b>   | <b>0.00</b>     |
| 12.50        | <b>9.04</b>  | <b>6,213</b>         | <b>338.72</b>    | <b>9.14</b>   | <b>1.99</b>   | <b>7.15</b>     |
| 15.00        | 1.07         | 5,487                | 338.52           | 1.09          | 0.82          | 0.27            |
| 17.50        | 0.69         | 5,319                | 338.48           | 0.74          | 0.74          | 0.00            |
| 20.00        | 0.50         | 4,767                | 338.32           | 0.57          | 0.57          | 0.00            |
| 22.50        | 0.43         | 4,476                | 338.23           | 0.44          | 0.44          | 0.00            |
| 25.00        | 0.06         | 4,076                | 338.11           | 0.22          | 0.22          | 0.00            |
| 27.50        | 0.00         | 3,786                | 338.01           | 0.00          | 0.00          | 0.00            |
| 30.00        | 0.00         | 3,786                | 338.01           | 0.00          | 0.00          | 0.00            |
| 32.50        | 0.00         | 3,786                | 338.01           | 0.00          | 0.00          | 0.00            |
| 35.00        | 0.00         | 3,786                | 338.01           | 0.00          | 0.00          | 0.00            |
| 37.50        | 0.00         | 3,786                | 338.01           | 0.00          | 0.00          | 0.00            |
| 40.00        | 0.00         | 3,411                | 337.88           | 0.15          | 0.15          | 0.00            |
| 42.50        | 0.00         | 2,371                | 337.48           | 0.08          | 0.08          | 0.00            |
| 45.00        | 0.00         | 1,864                | 337.25           | 0.03          | 0.03          | 0.00            |
| 47.50        | 0.00         | 1,663                | 337.16           | 0.01          | 0.01          | 0.00            |
| 50.00        | 0.00         | 1,572                | 337.11           | 0.01          | 0.01          | 0.00            |
| 52.50        | 0.00         | 1,526                | 337.09           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,498                | 337.07           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,479                | 337.06           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,466                | 337.05           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,456                | 337.05           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,448                | 337.05           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,441                | 337.04           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,436                | 337.04           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,432                | 337.04           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,428                | 337.04           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,425                | 337.03           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,422                | 337.03           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,420                | 337.03           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,418                | 337.03           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,416                | 337.03           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,414                | 337.03           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,412                | 337.03           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,411                | 337.03           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,410                | 337.03           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,408                | 337.02           | 0.00          | 0.00          | 0.00            |



**Stage-Discharge for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 334.50              | 0.00               | 0.00             | 0.00               | 337.15              | 0.04               | 0.04             | 0.00               |
| 334.55              | 0.00               | 0.00             | 0.00               | 337.20              | 0.06               | 0.06             | 0.00               |
| 334.60              | 0.00               | 0.00             | 0.00               | 337.25              | 0.08               | 0.08             | 0.00               |
| 334.65              | 0.00               | 0.00             | 0.00               | 337.30              | 0.10               | 0.10             | 0.00               |
| 334.70              | 0.00               | 0.00             | 0.00               | 337.35              | 0.11               | 0.11             | 0.00               |
| 334.75              | 0.00               | 0.00             | 0.00               | 337.40              | 0.12               | 0.12             | 0.00               |
| 334.80              | 0.00               | 0.00             | 0.00               | 337.45              | 0.13               | 0.13             | 0.00               |
| 334.85              | 0.00               | 0.00             | 0.00               | 337.50              | 0.14               | 0.14             | 0.00               |
| 334.90              | 0.00               | 0.00             | 0.00               | 337.55              | 0.15               | 0.15             | 0.00               |
| 334.95              | 0.00               | 0.00             | 0.00               | 337.60              | 0.16               | 0.16             | 0.00               |
| 335.00              | 0.00               | 0.00             | 0.00               | 337.65              | 0.17               | 0.17             | 0.00               |
| 335.05              | 0.00               | 0.00             | 0.00               | 337.70              | 0.18               | 0.18             | 0.00               |
| 335.10              | 0.00               | 0.00             | 0.00               | 337.75              | 0.19               | 0.19             | 0.00               |
| 335.15              | 0.00               | 0.00             | 0.00               | 337.80              | 0.19               | 0.19             | 0.00               |
| 335.20              | 0.00               | 0.00             | 0.00               | 337.85              | 0.20               | 0.20             | 0.00               |
| 335.25              | 0.00               | 0.00             | 0.00               | 337.90              | 0.21               | 0.21             | 0.00               |
| 335.30              | 0.00               | 0.00             | 0.00               | 337.95              | 0.24               | 0.24             | 0.00               |
| 335.35              | 0.00               | 0.00             | 0.00               | 338.00              | 0.28               | 0.28             | 0.00               |
| 335.40              | 0.00               | 0.00             | 0.00               | 338.05              | 0.33               | 0.33             | 0.00               |
| 335.45              | 0.00               | 0.00             | 0.00               | 338.10              | 0.39               | 0.39             | 0.00               |
| 335.50              | 0.00               | 0.00             | 0.00               | 338.15              | 0.46               | 0.46             | 0.00               |
| 335.55              | 0.00               | 0.00             | 0.00               | 338.20              | 0.53               | 0.53             | 0.00               |
| 335.60              | 0.00               | 0.00             | 0.00               | 338.25              | 0.60               | 0.60             | 0.00               |
| 335.65              | 0.00               | 0.00             | 0.00               | 338.30              | 0.67               | 0.67             | 0.00               |
| 335.70              | 0.00               | 0.00             | 0.00               | 338.35              | 0.73               | 0.73             | 0.00               |
| 335.75              | 0.00               | 0.00             | 0.00               | 338.40              | 0.78               | 0.78             | 0.00               |
| 335.80              | 0.00               | 0.00             | 0.00               | 338.45              | 0.82               | 0.82             | 0.00               |
| 335.85              | 0.00               | 0.00             | 0.00               | 338.50              | 0.87               | 0.87             | 0.00               |
| 335.90              | 0.00               | 0.00             | 0.00               | 338.55              | 1.80               | 1.02             | 0.78               |
| 335.95              | 0.00               | 0.00             | 0.00               | 338.60              | 3.48               | 1.27             | 2.20               |
| 336.00              | 0.00               | 0.00             | 0.00               | 338.65              | 5.63               | 1.58             | 4.05               |
| 336.05              | 0.00               | 0.00             | 0.00               | 338.70              | 8.17               | 1.94             | 6.23               |
| 336.10              | 0.00               | 0.00             | 0.00               | 338.75              | 11.07              | 2.34             | 8.73               |
| 336.15              | 0.00               | 0.00             | 0.00               | 338.80              | 14.27              | 2.78             | 11.49              |
| 336.20              | 0.00               | 0.00             | 0.00               | 338.85              | 17.76              | 3.25             | 14.51              |
| 336.25              | 0.00               | 0.00             | 0.00               | 338.90              | 21.31              | 3.55             | 17.76              |
| 336.30              | 0.00               | 0.00             | 0.00               | 338.95              | 24.91              | 3.72             | 21.19              |
| 336.35              | 0.00               | 0.00             | 0.00               | 339.00              | 28.71              | 3.89             | 24.82              |
| 336.40              | 0.00               | 0.00             | 0.00               | 339.05              | 32.68              | 4.05             | 28.63              |
| 336.45              | 0.00               | 0.00             | 0.00               | 339.10              | 36.83              | 4.20             | 32.63              |
| 336.50              | 0.00               | 0.00             | 0.00               | 339.15              | 40.93              | 4.35             | 36.58              |
| 336.55              | 0.00               | 0.00             | 0.00               | 339.20              | 45.15              | 4.49             | 40.66              |
| 336.60              | 0.00               | 0.00             | 0.00               | 339.25              | 49.47              | 4.63             | 44.84              |
| 336.65              | 0.00               | 0.00             | 0.00               | 339.30              | 53.88              | 4.76             | 49.11              |
| 336.70              | 0.00               | 0.00             | 0.00               | 339.35              | 58.63              | 4.89             | 53.74              |
| 336.75              | 0.00               | 0.00             | 0.00               | 339.40              | 63.51              | 5.02             | 58.49              |
| 336.80              | 0.00               | 0.00             | 0.00               | 339.45              | 68.52              | 5.14             | 63.38              |
| 336.85              | 0.00               | 0.00             | 0.00               | 339.50              | 73.64              | 5.26             | 68.38              |
| 336.90              | 0.00               | 0.00             | 0.00               | 339.55              | 79.02              | 5.38             | 73.64              |
| 336.95              | 0.00               | 0.00             | 0.00               | 339.60              | 84.53              | 5.49             | 79.04              |
| 337.00              | 0.00               | 0.00             | 0.00               | 339.65              | 90.17              | 5.60             | 84.57              |
| 337.05              | 0.01               | 0.01             | 0.00               | 339.70              | 95.94              | 5.71             | 90.23              |
| 337.10              | 0.02               | 0.02             | 0.00               | 339.75              | <b>101.75</b>      | <b>5.82</b>      | <b>95.93</b>       |

**Stage-Area-Storage for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 334.50              | 0                       | 337.15              | 1,652                   |
| 334.55              | 0                       | 337.20              | 1,754                   |
| 334.60              | 1                       | 337.25              | 1,859                   |
| 334.65              | 1                       | 337.30              | 1,966                   |
| 334.70              | 2                       | 337.35              | 2,076                   |
| 334.75              | 3                       | 337.40              | 2,188                   |
| 334.80              | 5                       | 337.45              | 2,303                   |
| 334.85              | 7                       | 337.50              | 2,421                   |
| 334.90              | 10                      | 337.55              | 2,542                   |
| 334.95              | 13                      | 337.60              | 2,665                   |
| 335.00              | 17                      | 337.65              | 2,791                   |
| 335.05              | 23                      | 337.70              | 2,920                   |
| 335.10              | 29                      | 337.75              | 3,052                   |
| 335.15              | 36                      | 337.80              | 3,187                   |
| 335.20              | 44                      | 337.85              | 3,325                   |
| 335.25              | 53                      | 337.90              | 3,466                   |
| 335.30              | 62                      | 337.95              | 3,610                   |
| 335.35              | 72                      | 338.00              | 3,757                   |
| 335.40              | 83                      | 338.05              | 3,907                   |
| 335.45              | 95                      | 338.10              | 4,060                   |
| 335.50              | 107                     | 338.15              | 4,216                   |
| 335.55              | 121                     | 338.20              | 4,375                   |
| 335.60              | 135                     | 338.25              | 4,538                   |
| 335.65              | 150                     | 338.30              | 4,703                   |
| 335.70              | 166                     | 338.35              | 4,872                   |
| 335.75              | 184                     | 338.40              | 5,044                   |
| 335.80              | 202                     | 338.45              | 5,220                   |
| 335.85              | 222                     | 338.50              | 5,399                   |
| 335.90              | 242                     | 338.55              | 5,580                   |
| 335.95              | 264                     | 338.60              | 5,764                   |
| 336.00              | 287                     | 338.65              | 5,951                   |
| 336.05              | 312                     | 338.70              | 6,140                   |
| 336.10              | 338                     | 338.75              | 6,332                   |
| 336.15              | 368                     | 338.80              | 6,527                   |
| 336.20              | 399                     | 338.85              | 6,724                   |
| 336.25              | 434                     | 338.90              | 6,923                   |
| 336.30              | 471                     | 338.95              | 7,126                   |
| 336.35              | 511                     | 339.00              | 7,331                   |
| 336.40              | 554                     | 339.05              | 7,539                   |
| 336.45              | 600                     | 339.10              | 7,749                   |
| 336.50              | 650                     | 339.15              | 7,962                   |
| 336.55              | 703                     | 339.20              | 8,178                   |
| 336.60              | 760                     | 339.25              | 8,397                   |
| 336.65              | 821                     | 339.30              | 8,619                   |
| 336.70              | 885                     | 339.35              | 8,843                   |
| 336.75              | 954                     | 339.40              | 9,070                   |
| 336.80              | 1,026                   | 339.45              | 9,300                   |
| 336.85              | 1,103                   | 339.50              | 9,533                   |
| 336.90              | 1,185                   | 339.55              | 9,769                   |
| 336.95              | 1,271                   | 339.60              | 10,008                  |
| 337.00              | 1,362                   | 339.65              | 10,250                  |
| 337.05              | 1,456                   | 339.70              | 10,494                  |
| 337.10              | 1,553                   | 339.75              | <b>10,742</b>           |

**Summary for Pond 5P: Proposed Infiltration Basin**

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 3.68" for 100-yr event  
 Inflow = 28.12 cfs @ 12.13 hrs, Volume= 2.327 af  
 Outflow = 15.22 cfs @ 12.33 hrs, Volume= 2.327 af, Atten= 46%, Lag= 11.8 min  
 Discarded = 15.22 cfs @ 12.33 hrs, Volume= 2.327 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Primary area = Inflow area x 0.000  
 Peak Elev= 330.53' @ 12.32 hrs Surf.Area= 6,557 sf Storage= 17,528 cf

Plug-Flow detention time= 8.2 min calculated for 2.325 af (100% of inflow)  
 Center-of-Mass det. time= 8.2 min ( 835.3 - 827.0 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 330.50' | 10,455 cf     | <b>Upper Pond (Irregular)</b> Listed below (Recalc) -Impervious |
| #2     | 325.50' | 11,031 cf     | <b>Micropool (Irregular)</b> Listed below (Recalc)              |
| #3     | 325.50' | 6,296 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)                |
|        |         | 27,781 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 330.50           | 6,557             | 358.9         | 0                      | 0                      | 6,557            |
| 331.00           | 7,966             | 544.5         | 3,625                  | 3,625                  | 19,902           |
| 331.75           | 10,297            | 768.6         | 6,830                  | 10,455                 | 43,324           |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 906               | 129.8         | 0                      | 0                      | 906              |
| 326.00           | 1,122             | 143.2         | 506                    | 506                    | 1,205            |
| 327.00           | 1,594             | 165.7         | 1,351                  | 1,857                  | 1,779            |
| 328.00           | 2,135             | 187.0         | 1,858                  | 3,715                  | 2,403            |
| 329.00           | 2,732             | 208.0         | 2,427                  | 6,142                  | 3,092            |
| 330.00           | 3,382             | 226.7         | 3,051                  | 9,194                  | 3,774            |
| 330.50           | 3,974             | 250.8         | 1,837                  | 11,031                 | 4,697            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 295               | 81.6          | 0                      | 0                      | 295              |
| 326.00           | 426               | 92.6          | 179                    | 179                    | 454              |
| 327.00           | 755               | 119.2         | 583                    | 762                    | 914              |
| 328.00           | 1,185             | 151.4         | 962                    | 1,724                  | 1,621            |
| 329.00           | 1,678             | 173.2         | 1,424                  | 3,148                  | 2,207            |
| 330.00           | 2,227             | 192.4         | 1,946                  | 5,094                  | 2,794            |
| 330.50           | 2,583             | 209.3         | 1,201                  | 6,296                  | 3,344            |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.25' | <b>10.0' long x 13.2' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |

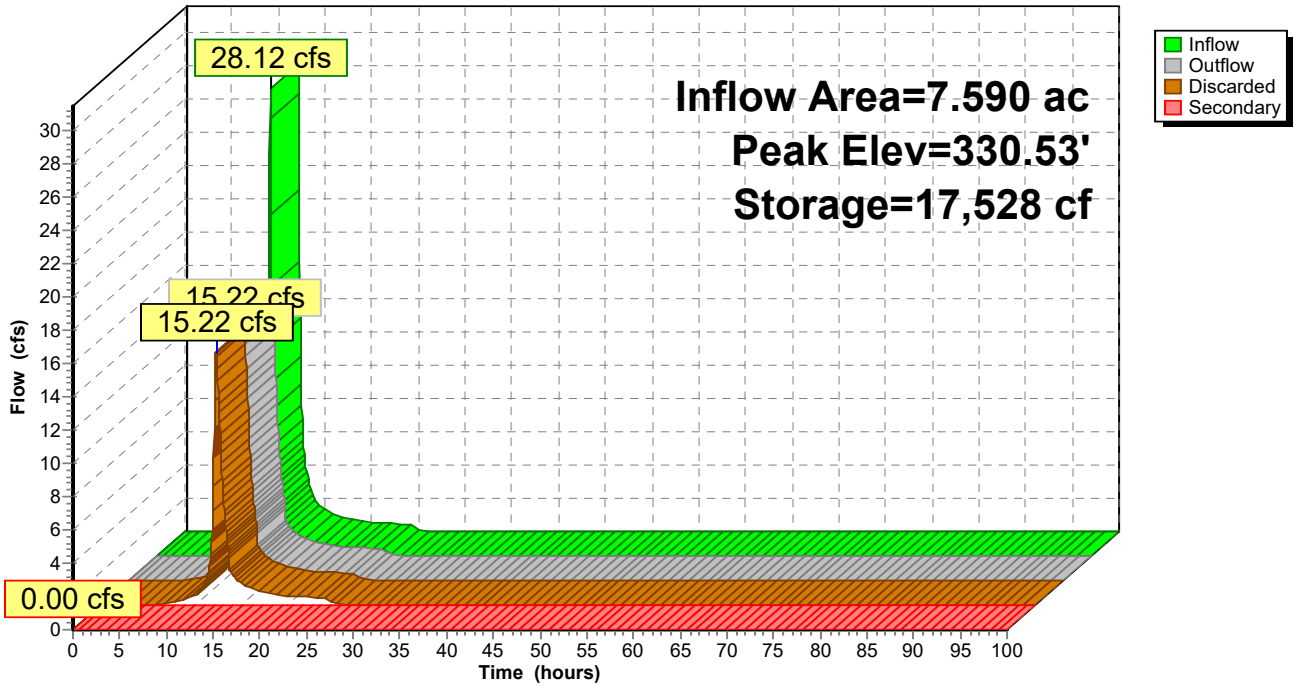
#2 Discarded 325.50' **100.00 in/hr Exfiltration over Horizontal area** Phase-In= 0.03'  
 Coef. (English) 2.61 2.65 2.70 2.66 2.65 2.66 2.65 2.63

**Discarded OutFlow** Max=15.18 cfs @ 12.33 hrs HW=330.52' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 15.18 cfs)

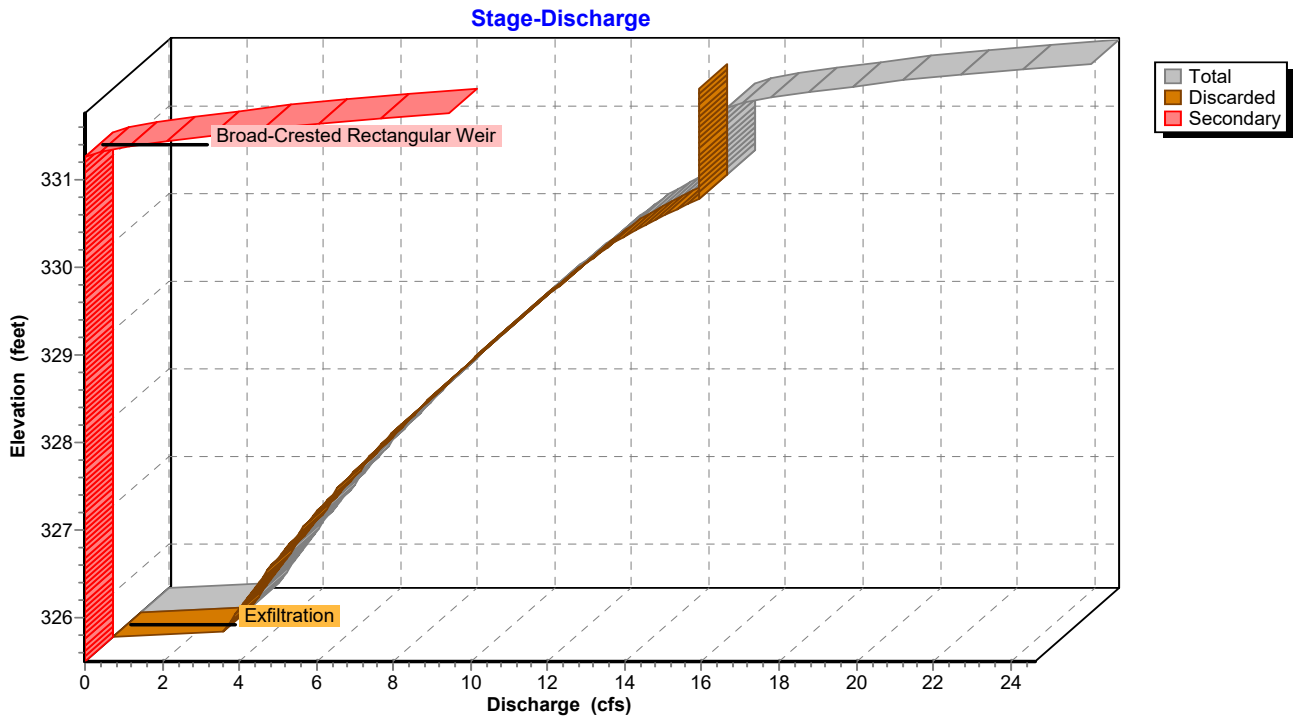
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=325.50' TW=0.00' (Dynamic Tailwater)  
 ↳1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond 5P: Proposed Infiltration Basin**

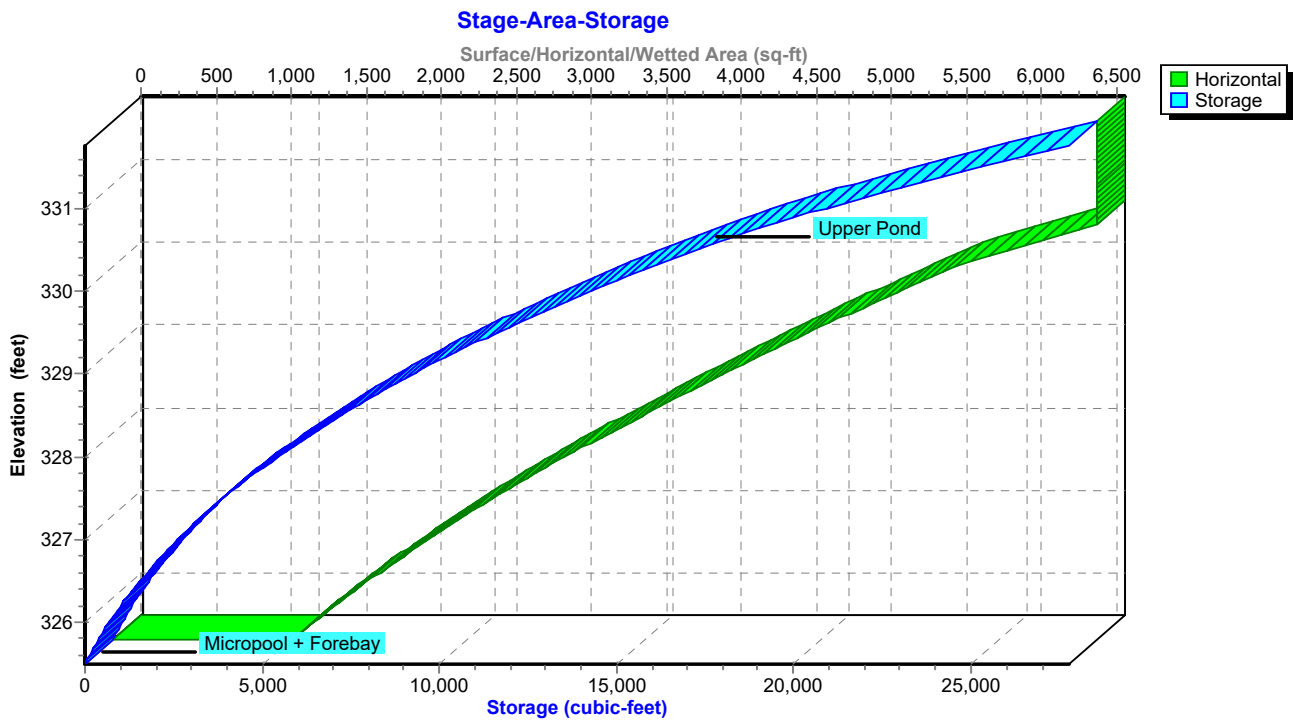
Hydrograph



### Pond 5P: Proposed Infiltration Basin



### Pond 5P: Proposed Infiltration Basin



**Hydrograph for Pond 5P: Proposed Infiltration Basin**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|-----------------|-----------------|
| 0.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | <b>0.00</b>     |
| 2.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 5.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 7.50         | 0.18         | 2                    | 325.50           | 0.18          | 0.18            | 0.00            |
| 10.00        | <b>0.58</b>  | <b>8</b>             | <b>325.51</b>    | <b>0.58</b>   | <b>0.58</b>     | 0.00            |
| 12.50        | <b>7.60</b>  | <b>14,904</b>        | <b>330.11</b>    | <b>13.44</b>  | <b>13.44</b>    | 0.00            |
| 15.00        | 1.32         | 17                   | 325.51           | 1.32          | 1.32            | 0.00            |
| 17.50        | 0.80         | 10                   | 325.51           | 0.80          | 0.80            | 0.00            |
| 20.00        | 0.56         | 7                    | 325.51           | 0.56          | 0.56            | 0.00            |
| 22.50        | 0.48         | 6                    | 325.51           | 0.48          | 0.48            | 0.00            |
| 25.00        | 0.07         | 1                    | 325.50           | 0.07          | 0.07            | 0.00            |
| 27.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 30.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 32.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 35.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 37.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 40.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 42.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 45.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 47.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 50.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 52.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 55.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 57.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 60.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 62.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 65.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 67.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 70.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 72.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 75.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 77.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 80.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 82.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 85.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 87.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 90.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 92.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 95.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 97.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 100.00       | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |

**Stage-Discharge for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| 325.50              | 0.00               | 0.00               | 0.00               | 330.80              | 15.18              | 15.18              | 0.00               |
| 325.60              | 2.93               | 2.93               | 0.00               | 330.90              | 15.18              | 15.18              | 0.00               |
| 325.70              | 3.09               | 3.09               | 0.00               | 331.00              | 15.18              | 15.18              | 0.00               |
| 325.80              | 3.25               | 3.25               | 0.00               | 331.10              | 15.18              | 15.18              | 0.00               |
| 325.90              | 3.41               | 3.41               | 0.00               | 331.20              | 15.18              | 15.18              | 0.00               |
| 326.00              | 3.58               | 3.58               | 0.00               | 331.30              | 15.47              | 15.18              | 0.29               |
| 326.10              | 3.75               | 3.75               | 0.00               | 331.40              | 16.69              | 15.18              | 1.52               |
| 326.20              | 3.92               | 3.92               | 0.00               | 331.50              | 18.45              | 15.18              | 3.27               |
| 326.30              | 4.10               | 4.10               | 0.00               | 331.60              | 20.64              | 15.18              | 5.47               |
| 326.40              | 4.28               | 4.28               | 0.00               | 331.70              | <b>23.22</b>       | 15.18              | <b>8.04</b>        |
| 326.50              | 4.46               | 4.46               | 0.00               |                     |                    |                    |                    |
| 326.60              | 4.65               | 4.65               | 0.00               |                     |                    |                    |                    |
| 326.70              | 4.84               | 4.84               | 0.00               |                     |                    |                    |                    |
| 326.80              | 5.03               | 5.03               | 0.00               |                     |                    |                    |                    |
| 326.90              | 5.23               | 5.23               | 0.00               |                     |                    |                    |                    |
| 327.00              | 5.44               | 5.44               | 0.00               |                     |                    |                    |                    |
| 327.10              | 5.64               | 5.64               | 0.00               |                     |                    |                    |                    |
| 327.20              | 5.85               | 5.85               | 0.00               |                     |                    |                    |                    |
| 327.30              | 6.07               | 6.07               | 0.00               |                     |                    |                    |                    |
| 327.40              | 6.29               | 6.29               | 0.00               |                     |                    |                    |                    |
| 327.50              | 6.51               | 6.51               | 0.00               |                     |                    |                    |                    |
| 327.60              | 6.74               | 6.74               | 0.00               |                     |                    |                    |                    |
| 327.70              | 6.97               | 6.97               | 0.00               |                     |                    |                    |                    |
| 327.80              | 7.20               | 7.20               | 0.00               |                     |                    |                    |                    |
| 327.90              | 7.44               | 7.44               | 0.00               |                     |                    |                    |                    |
| 328.00              | 7.69               | 7.69               | 0.00               |                     |                    |                    |                    |
| 328.10              | 7.92               | 7.92               | 0.00               |                     |                    |                    |                    |
| 328.20              | 8.16               | 8.16               | 0.00               |                     |                    |                    |                    |
| 328.30              | 8.40               | 8.40               | 0.00               |                     |                    |                    |                    |
| 328.40              | 8.65               | 8.65               | 0.00               |                     |                    |                    |                    |
| 328.50              | 8.90               | 8.90               | 0.00               |                     |                    |                    |                    |
| 328.60              | 9.15               | 9.15               | 0.00               |                     |                    |                    |                    |
| 328.70              | 9.41               | 9.41               | 0.00               |                     |                    |                    |                    |
| 328.80              | 9.67               | 9.67               | 0.00               |                     |                    |                    |                    |
| 328.90              | 9.94               | 9.94               | 0.00               |                     |                    |                    |                    |
| 329.00              | 10.21              | 10.21              | 0.00               |                     |                    |                    |                    |
| 329.10              | 10.47              | 10.47              | 0.00               |                     |                    |                    |                    |
| 329.20              | 10.74              | 10.74              | 0.00               |                     |                    |                    |                    |
| 329.30              | 11.01              | 11.01              | 0.00               |                     |                    |                    |                    |
| 329.40              | 11.28              | 11.28              | 0.00               |                     |                    |                    |                    |
| 329.50              | 11.55              | 11.55              | 0.00               |                     |                    |                    |                    |
| 329.60              | 11.83              | 11.83              | 0.00               |                     |                    |                    |                    |
| 329.70              | 12.12              | 12.12              | 0.00               |                     |                    |                    |                    |
| 329.80              | 12.40              | 12.40              | 0.00               |                     |                    |                    |                    |
| 329.90              | 12.69              | 12.69              | 0.00               |                     |                    |                    |                    |
| 330.00              | 12.98              | 12.98              | 0.00               |                     |                    |                    |                    |
| 330.10              | 13.41              | 13.41              | 0.00               |                     |                    |                    |                    |
| 330.20              | 13.84              | 13.84              | 0.00               |                     |                    |                    |                    |
| 330.30              | 14.28              | 14.28              | 0.00               |                     |                    |                    |                    |
| 330.40              | 14.73              | 14.73              | 0.00               |                     |                    |                    |                    |
| 330.50              | 15.18              | <b>15.18</b>       | 0.00               |                     |                    |                    |                    |
| 330.60              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |
| 330.70              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |

**Stage-Area-Storage for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 325.50              | 1,201                 | 0                       | 330.80              | 6,557                 | 19,417                  |
| 325.60              | 1,267                 | 123                     | 330.90              | 6,557                 | 20,170                  |
| 325.70              | 1,334                 | 253                     | 331.00              | 6,557                 | 20,951                  |
| 325.80              | 1,404                 | 390                     | 331.10              | 6,557                 | 21,763                  |
| 325.90              | 1,475                 | 534                     | 331.20              | 6,557                 | 22,604                  |
| 326.00              | 1,548                 | 685                     | 331.30              | 6,557                 | 23,475                  |
| 326.10              | 1,620                 | 844                     | 331.40              | 6,557                 | 24,376                  |
| 326.20              | 1,694                 | 1,009                   | 331.50              | 6,557                 | 25,309                  |
| 326.30              | 1,770                 | 1,183                   | 331.60              | 6,557                 | 26,274                  |
| 326.40              | 1,847                 | 1,363                   | 331.70              | 6,557                 | <b>27,271</b>           |
| 326.50              | 1,926                 | 1,552                   |                     |                       |                         |
| 326.60              | 2,007                 | 1,749                   |                     |                       |                         |
| 326.70              | 2,090                 | 1,954                   |                     |                       |                         |
| 326.80              | 2,175                 | 2,167                   |                     |                       |                         |
| 326.90              | 2,261                 | 2,389                   |                     |                       |                         |
| 327.00              | 2,349                 | 2,619                   |                     |                       |                         |
| 327.10              | 2,438                 | 2,858                   |                     |                       |                         |
| 327.20              | 2,529                 | 3,107                   |                     |                       |                         |
| 327.30              | 2,622                 | 3,364                   |                     |                       |                         |
| 327.40              | 2,716                 | 3,631                   |                     |                       |                         |
| 327.50              | 2,813                 | 3,908                   |                     |                       |                         |
| 327.60              | 2,911                 | 4,194                   |                     |                       |                         |
| 327.70              | 3,010                 | 4,490                   |                     |                       |                         |
| 327.80              | 3,112                 | 4,796                   |                     |                       |                         |
| 327.90              | 3,215                 | 5,112                   |                     |                       |                         |
| 328.00              | 3,320                 | 5,439                   |                     |                       |                         |
| 328.10              | 3,422                 | 5,776                   |                     |                       |                         |
| 328.20              | 3,525                 | 6,123                   |                     |                       |                         |
| 328.30              | 3,630                 | 6,481                   |                     |                       |                         |
| 328.40              | 3,737                 | 6,850                   |                     |                       |                         |
| 328.50              | 3,845                 | 7,229                   |                     |                       |                         |
| 328.60              | 3,955                 | 7,619                   |                     |                       |                         |
| 328.70              | 4,066                 | 8,020                   |                     |                       |                         |
| 328.80              | 4,179                 | 8,432                   |                     |                       |                         |
| 328.90              | 4,294                 | 8,856                   |                     |                       |                         |
| 329.00              | 4,410                 | 9,291                   |                     |                       |                         |
| 329.10              | 4,523                 | 9,737                   |                     |                       |                         |
| 329.20              | 4,638                 | 10,195                  |                     |                       |                         |
| 329.30              | 4,754                 | 10,665                  |                     |                       |                         |
| 329.40              | 4,872                 | 11,146                  |                     |                       |                         |
| 329.50              | 4,991                 | 11,639                  |                     |                       |                         |
| 329.60              | 5,112                 | 12,145                  |                     |                       |                         |
| 329.70              | 5,234                 | 12,662                  |                     |                       |                         |
| 329.80              | 5,357                 | 13,191                  |                     |                       |                         |
| 329.90              | 5,482                 | 13,733                  |                     |                       |                         |
| 330.00              | 5,609                 | 14,288                  |                     |                       |                         |
| 330.10              | 5,793                 | 14,858                  |                     |                       |                         |
| 330.20              | 5,979                 | 15,447                  |                     |                       |                         |
| 330.30              | 6,169                 | 16,054                  |                     |                       |                         |
| 330.40              | 6,361                 | 16,681                  |                     |                       |                         |
| 330.50              | <b>6,557</b>          | 17,326                  |                     |                       |                         |
| 330.60              | 6,557                 | 17,996                  |                     |                       |                         |
| 330.70              | 6,557                 | 18,692                  |                     |                       |                         |



**Summary for Pond 6P: Proposed Stormwater Pond**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 4.53" for 100-yr event  
 Inflow = 5.91 cfs @ 12.10 hrs, Volume= 0.490 af  
 Outflow = 2.30 cfs @ 12.43 hrs, Volume= 0.490 af, Atten= 61%, Lag= 20.2 min  
 Primary = 1.51 cfs @ 12.43 hrs, Volume= 0.469 af  
 Routed to Reach R10 : 10" Culvert Pond Discharge  
 Secondary = 0.80 cfs @ 12.43 hrs, Volume= 0.021 af  
 Routed to Link AP5 : Analysis Point 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 329.33' Surf.Area= 2,011 sf Storage= 1,574 cf  
 Peak Elev= 331.73' @ 12.43 hrs Surf.Area= 5,493 sf Storage= 10,479 cf (8,905 cf above start)

Plug-Flow detention time= 338.8 min calculated for 0.453 af (92% of inflow)  
 Center-of-Mass det. time= 268.0 min ( 1,090.9 - 822.9 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 331.75' | 6,028 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 327.75' | 8,305 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 327.50' | 2,269 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 16,603 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 331.75           | 5,523             | 306.7         | 0                      | 0                      | 5,523            |
| 332.00           | 5,830             | 312.4         | 1,419                  | 1,419                  | 5,814            |
| 332.75           | 6,467             | 324.9         | 4,609                  | 6,028                  | 6,492            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.75           | 200               | 93.4          | 0                      | 0                      | 200              |
| 328.00           | 271               | 98.0          | 59                     | 59                     | 274              |
| 329.00           | 1,297             | 155.9         | 720                    | 779                    | 1,451            |
| 330.00           | 2,476             | 197.8         | 1,855                  | 2,634                  | 2,643            |
| 331.00           | 3,318             | 222.9         | 2,887                  | 5,521                  | 3,510            |
| 331.75           | 4,121             | 250.8         | 2,784                  | 8,305                  | 4,576            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.50           | 29                | 23.3          | 0                      | 0                      | 29               |
| 328.00           | 88                | 35.9          | 28                     | 28                     | 90               |
| 329.00           | 282               | 61.1          | 176                    | 204                    | 291              |
| 330.00           | 574               | 85.9          | 419                    | 623                    | 590              |
| 331.00           | 968               | 111.0         | 762                    | 1,386                  | 995              |
| 331.75           | 1,402             | 143.0         | 884                    | 2,269                  | 1,649            |

**1096 Proposed Stormwater Conditions\_Final D Soils GType II 24-hr 100-yr Rainfall=6.24"**

Prepared by CLA Site

Printed 12/13/2024

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| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.63' | <b>10.0' long x 7.8' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.42 2.53 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.67 2.68 2.71 2.75 |
| #2     | Primary   | 331.61' | <b>10.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads   |
| #3     | Primary   | 330.12' | <b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |
| #4     | Primary   | 329.33' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

**Primary OutFlow** Max=1.50 cfs @ 12.43 hrs HW=331.73' TW=329.78' (Dynamic Tailwater)

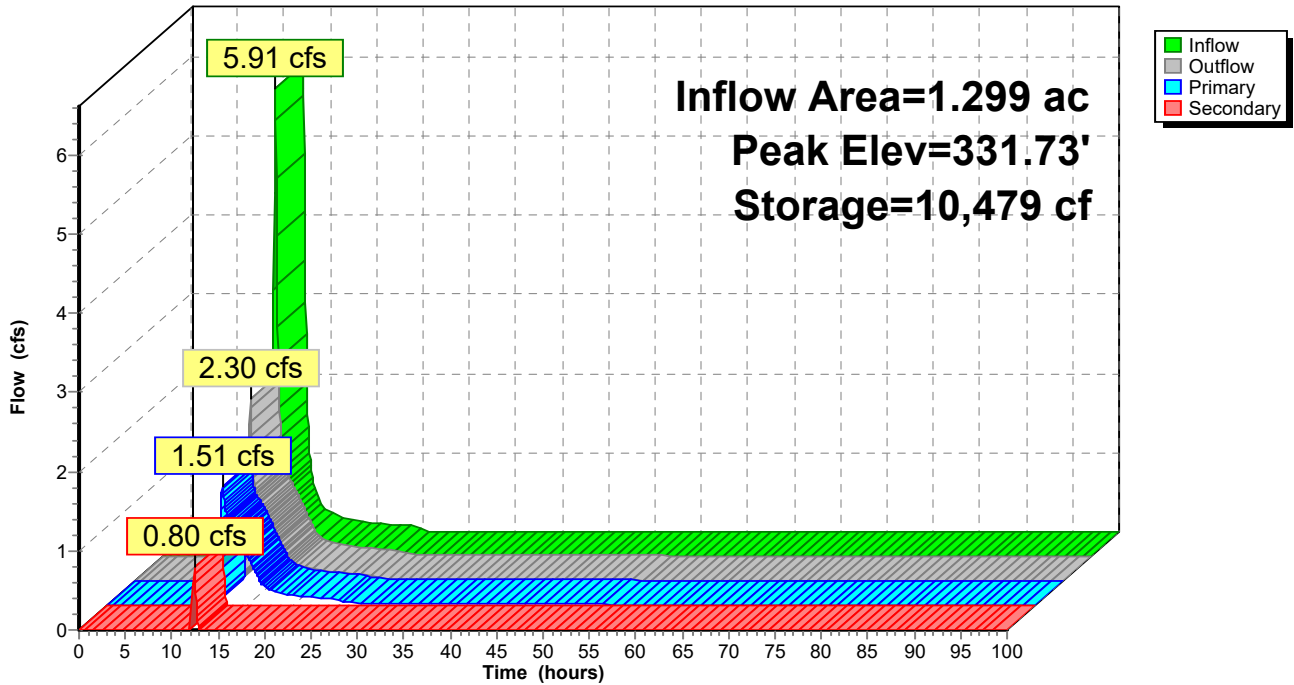
- ↳ **2=Orifice/Grate** (Weir Controls 0.36 cfs @ 1.14 fps)
- ↳ **3=Orifice/Grate** (Orifice Controls 1.10 cfs @ 5.62 fps)
- ↳ **4=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.72 fps)

**Secondary OutFlow** Max=0.79 cfs @ 12.43 hrs HW=331.73' TW=0.00' (Dynamic Tailwater)

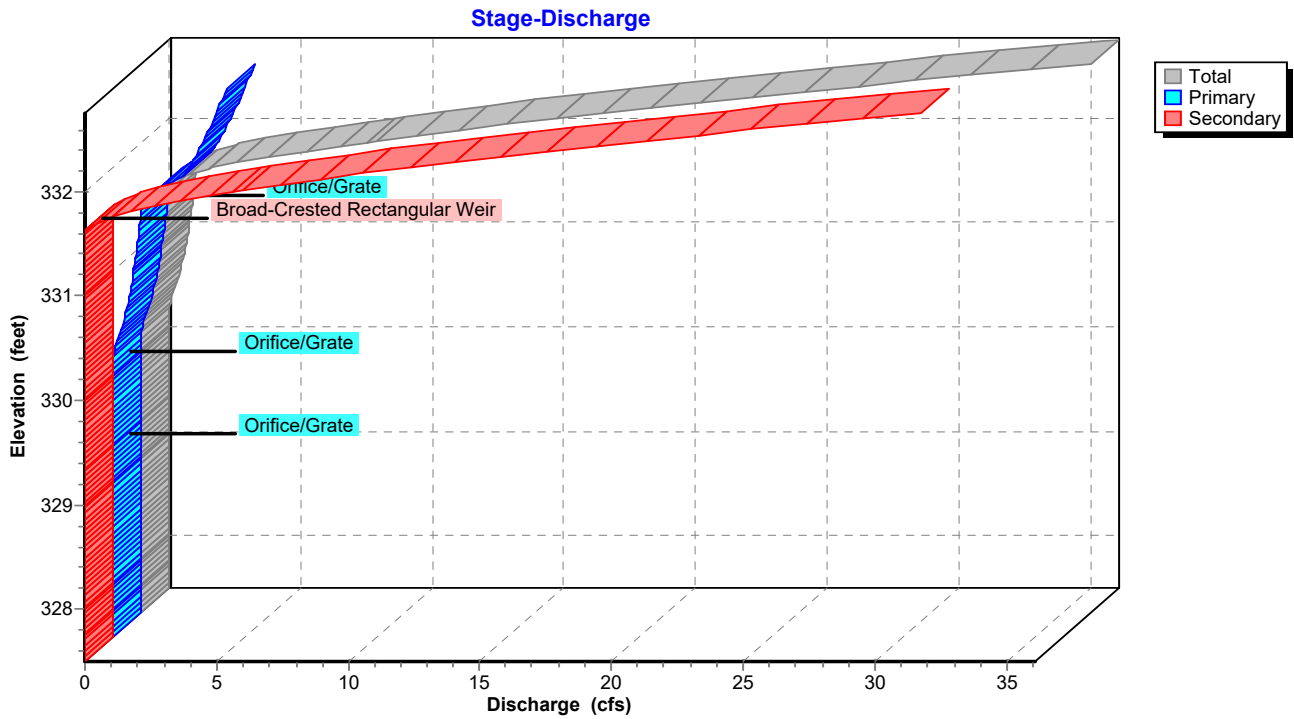
- ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.79 cfs @ 0.77 fps)

**Pond 6P: Proposed Stormwater Pond**

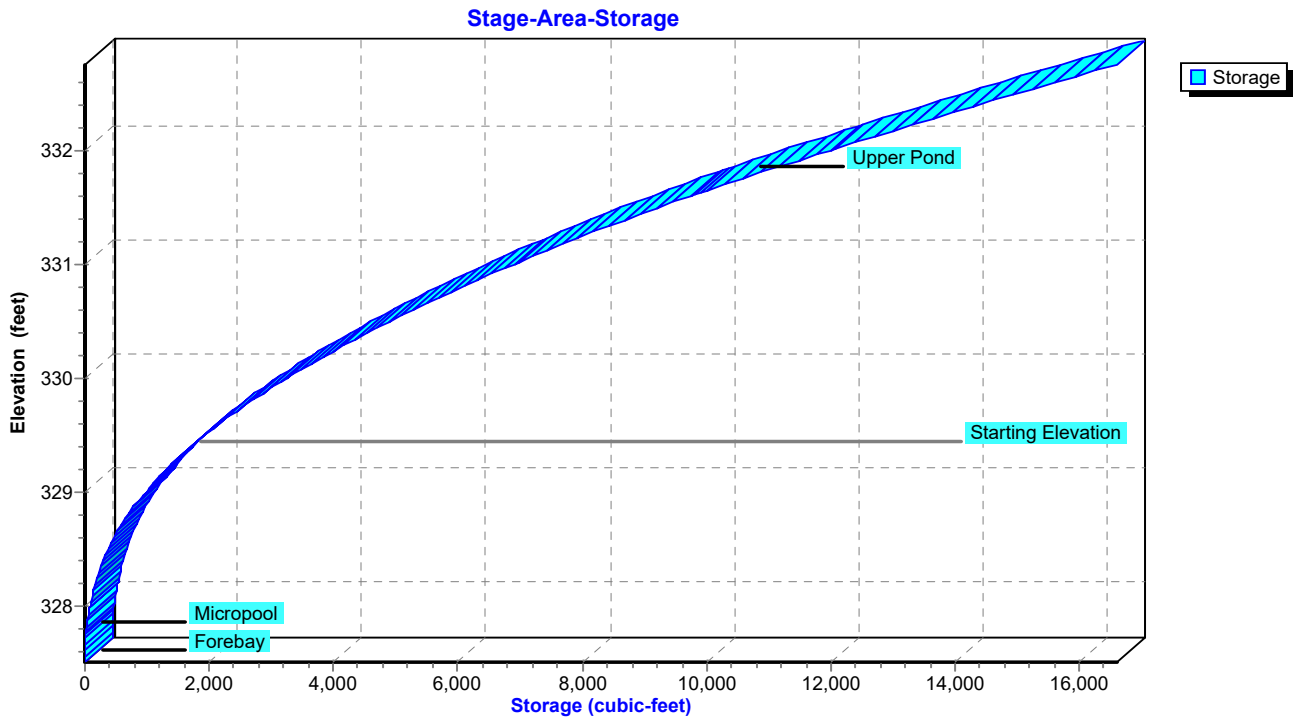
Hydrograph



### Pond 6P: Proposed Stormwater Pond



### Pond 6P: Proposed Stormwater Pond



**Hydrograph for Pond 6P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 2.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.03         | 1,673                | 329.38           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.13</b>  | <b>2,250</b>         | <b>329.63</b>    | <b>0.01</b>   | <b>0.01</b>   | <b>0.00</b>     |
| 12.50        | <b>1.89</b>  | <b>10,438</b>        | <b>331.73</b>    | <b>2.18</b>   | <b>1.47</b>   | <b>0.71</b>     |
| 15.00        | 0.26         | 6,197                | 330.83           | 0.67          | 0.67          | 0.00            |
| 17.50        | 0.16         | 4,499                | 330.38           | 0.20          | 0.20          | 0.00            |
| 20.00        | 0.11         | 4,270                | 330.31           | 0.13          | 0.13          | 0.00            |
| 22.50        | 0.09         | 4,162                | 330.28           | 0.10          | 0.10          | 0.00            |
| 25.00        | 0.02         | 4,018                | 330.24           | 0.07          | 0.07          | 0.00            |
| 27.50        | 0.00         | 3,725                | 330.15           | 0.03          | 0.03          | 0.00            |
| 30.00        | 0.00         | 3,531                | 330.09           | 0.02          | 0.02          | 0.00            |
| 32.50        | 0.00         | 3,342                | 330.03           | 0.02          | 0.02          | 0.00            |
| 35.00        | 0.00         | 3,158                | 329.97           | 0.02          | 0.02          | 0.00            |
| 37.50        | 0.00         | 2,983                | 329.91           | 0.02          | 0.02          | 0.00            |
| 40.00        | 0.00         | 2,817                | 329.85           | 0.02          | 0.02          | 0.00            |
| 42.50        | 0.00         | 2,660                | 329.79           | 0.02          | 0.02          | 0.00            |
| 45.00        | 0.00         | 2,513                | 329.74           | 0.02          | 0.02          | 0.00            |
| 47.50        | 0.00         | 2,376                | 329.68           | 0.01          | 0.01          | 0.00            |
| 50.00        | 0.00         | 2,250                | 329.63           | 0.01          | 0.01          | 0.00            |
| 52.50        | 0.00         | 2,135                | 329.59           | 0.01          | 0.01          | 0.00            |
| 55.00        | 0.00         | 2,031                | 329.54           | 0.01          | 0.01          | 0.00            |
| 57.50        | 0.00         | 1,940                | 329.50           | 0.01          | 0.01          | 0.00            |
| 60.00        | 0.00         | 1,861                | 329.47           | 0.01          | 0.01          | 0.00            |
| 62.50        | 0.00         | 1,795                | 329.44           | 0.01          | 0.01          | 0.00            |
| 65.00        | 0.00         | 1,741                | 329.41           | 0.01          | 0.01          | 0.00            |
| 67.50        | 0.00         | 1,701                | 329.39           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,674                | 329.38           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,655                | 329.37           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,641                | 329.36           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,632                | 329.36           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,624                | 329.35           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,618                | 329.35           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,613                | 329.35           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,610                | 329.35           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,606                | 329.35           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,604                | 329.34           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,601                | 329.34           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,600                | 329.34           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,598                | 329.34           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 327.50              | 0.00               | 0.00             | 0.00               | 330.15              | 0.03               | 0.03             | 0.00               |
| 327.55              | 0.00               | 0.00             | 0.00               | 330.20              | 0.04               | 0.04             | 0.00               |
| 327.60              | 0.00               | 0.00             | 0.00               | 330.25              | 0.07               | 0.07             | 0.00               |
| 327.65              | 0.00               | 0.00             | 0.00               | 330.30              | 0.12               | 0.12             | 0.00               |
| 327.70              | 0.00               | 0.00             | 0.00               | 330.35              | 0.17               | 0.17             | 0.00               |
| 327.75              | 0.00               | 0.00             | 0.00               | 330.40              | 0.23               | 0.23             | 0.00               |
| 327.80              | 0.00               | 0.00             | 0.00               | 330.45              | 0.30               | 0.30             | 0.00               |
| 327.85              | 0.00               | 0.00             | 0.00               | 330.50              | 0.36               | 0.36             | 0.00               |
| 327.90              | 0.00               | 0.00             | 0.00               | 330.55              | 0.43               | 0.43             | 0.00               |
| 327.95              | 0.00               | 0.00             | 0.00               | 330.60              | 0.49               | 0.49             | 0.00               |
| 328.00              | 0.00               | 0.00             | 0.00               | 330.65              | 0.53               | 0.53             | 0.00               |
| 328.05              | 0.00               | 0.00             | 0.00               | 330.70              | 0.57               | 0.57             | 0.00               |
| 328.10              | 0.00               | 0.00             | 0.00               | 330.75              | 0.61               | 0.61             | 0.00               |
| 328.15              | 0.00               | 0.00             | 0.00               | 330.80              | 0.65               | 0.65             | 0.00               |
| 328.20              | 0.00               | 0.00             | 0.00               | 330.85              | 0.69               | 0.69             | 0.00               |
| 328.25              | 0.00               | 0.00             | 0.00               | 330.90              | 0.72               | 0.72             | 0.00               |
| 328.30              | 0.00               | 0.00             | 0.00               | 330.95              | 0.75               | 0.75             | 0.00               |
| 328.35              | 0.00               | 0.00             | 0.00               | 331.00              | 0.78               | 0.78             | 0.00               |
| 328.40              | 0.00               | 0.00             | 0.00               | 331.05              | 0.81               | 0.81             | 0.00               |
| 328.45              | 0.00               | 0.00             | 0.00               | 331.10              | 0.84               | 0.84             | 0.00               |
| 328.50              | 0.00               | 0.00             | 0.00               | 331.15              | 0.87               | 0.87             | 0.00               |
| 328.55              | 0.00               | 0.00             | 0.00               | 331.20              | 0.90               | 0.90             | 0.00               |
| 328.60              | 0.00               | 0.00             | 0.00               | 331.25              | 0.92               | 0.92             | 0.00               |
| 328.65              | 0.00               | 0.00             | 0.00               | 331.30              | 0.95               | 0.95             | 0.00               |
| 328.70              | 0.00               | 0.00             | 0.00               | 331.35              | 0.97               | 0.97             | 0.00               |
| 328.75              | 0.00               | 0.00             | 0.00               | 331.40              | 1.00               | 1.00             | 0.00               |
| 328.80              | 0.00               | 0.00             | 0.00               | 331.45              | 1.02               | 1.02             | 0.00               |
| 328.85              | 0.00               | 0.00             | 0.00               | 331.50              | 1.04               | 1.04             | 0.00               |
| 328.90              | 0.00               | 0.00             | 0.00               | 331.55              | 1.07               | 1.07             | 0.00               |
| 328.95              | 0.00               | 0.00             | 0.00               | 331.60              | 1.09               | 1.09             | 0.00               |
| 329.00              | 0.00               | 0.00             | 0.00               | 331.65              | 1.25               | 1.18             | 0.07               |
| 329.05              | 0.00               | 0.00             | 0.00               | 331.70              | 1.81               | 1.36             | 0.45               |
| 329.10              | 0.00               | 0.00             | 0.00               | 331.75              | 2.61               | 1.60             | 1.01               |
| 329.15              | 0.00               | 0.00             | 0.00               | 331.80              | 3.58               | 1.88             | 1.70               |
| 329.20              | 0.00               | 0.00             | 0.00               | 331.85              | 4.71               | 2.20             | 2.51               |
| 329.25              | 0.00               | 0.00             | 0.00               | 331.90              | 6.00               | 2.55             | 3.45               |
| 329.30              | 0.00               | 0.00             | 0.00               | 331.95              | 7.26               | 2.76             | 4.50               |
| 329.35              | 0.00               | 0.00             | 0.00               | 332.00              | 8.55               | 2.89             | 5.66               |
| 329.40              | 0.00               | 0.00             | 0.00               | 332.05              | 9.94               | 3.01             | 6.93               |
| 329.45              | 0.01               | 0.01             | 0.00               | 332.10              | 11.47              | 3.13             | 8.34               |
| 329.50              | 0.01               | 0.01             | 0.00               | 332.15              | 13.10              | 3.23             | 9.87               |
| 329.55              | 0.01               | 0.01             | 0.00               | 332.20              | 14.85              | 3.34             | 11.51              |
| 329.60              | 0.01               | 0.01             | 0.00               | 332.25              | 16.62              | 3.44             | 13.18              |
| 329.65              | 0.01               | 0.01             | 0.00               | 332.30              | 18.33              | 3.54             | 14.79              |
| 329.70              | 0.02               | 0.02             | 0.00               | 332.35              | 20.09              | 3.63             | 16.46              |
| 329.75              | 0.02               | 0.02             | 0.00               | 332.40              | 21.91              | 3.73             | 18.19              |
| 329.80              | 0.02               | 0.02             | 0.00               | 332.45              | 23.78              | 3.82             | 19.97              |
| 329.85              | 0.02               | 0.02             | 0.00               | 332.50              | 25.70              | 3.90             | 21.80              |
| 329.90              | 0.02               | 0.02             | 0.00               | 332.55              | 27.67              | 3.99             | 23.68              |
| 329.95              | 0.02               | 0.02             | 0.00               | 332.60              | 29.69              | 4.07             | 25.62              |
| 330.00              | 0.02               | 0.02             | 0.00               | 332.65              | 31.76              | 4.15             | 27.61              |
| 330.05              | 0.02               | 0.02             | 0.00               | 332.70              | 33.90              | 4.23             | 29.66              |
| 330.10              | 0.02               | 0.02             | 0.00               | 332.75              | <b>36.08</b>       | <b>4.31</b>      | <b>31.77</b>       |

**Stage-Area-Storage for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 327.50              | 0                       | 330.15              | 3,727                   |
| 327.55              | 2                       | 330.20              | 3,890                   |
| 327.60              | 3                       | 330.25              | 4,055                   |
| 327.65              | 5                       | 330.30              | 4,224                   |
| 327.70              | 8                       | 330.35              | 4,395                   |
| 327.75              | 10                      | 330.40              | 4,569                   |
| 327.80              | 23                      | 330.45              | 4,747                   |
| 327.85              | 38                      | 330.50              | 4,927                   |
| 327.90              | 53                      | 330.55              | 5,111                   |
| 327.95              | 69                      | 330.60              | 5,297                   |
| 328.00              | 87                      | 330.65              | 5,487                   |
| 328.05              | 106                     | 330.70              | 5,680                   |
| 328.10              | 127                     | 330.75              | 5,876                   |
| 328.15              | 150                     | 330.80              | 6,076                   |
| 328.20              | 175                     | 330.85              | 6,279                   |
| 328.25              | 203                     | 330.90              | 6,484                   |
| 328.30              | 233                     | 330.95              | 6,694                   |
| 328.35              | 266                     | 331.00              | 6,906                   |
| 328.40              | 302                     | 331.05              | 7,123                   |
| 328.45              | 341                     | 331.10              | 7,343                   |
| 328.50              | 382                     | 331.15              | 7,567                   |
| 328.55              | 427                     | 331.20              | 7,795                   |
| 328.60              | 474                     | 331.25              | 8,027                   |
| 328.65              | 525                     | 331.30              | 8,263                   |
| 328.70              | 580                     | 331.35              | 8,503                   |
| 328.75              | 637                     | 331.40              | 8,747                   |
| 328.80              | 699                     | 331.45              | 8,995                   |
| 328.85              | 764                     | 331.50              | 9,248                   |
| 328.90              | 833                     | 331.55              | 9,505                   |
| 328.95              | 906                     | 331.60              | 9,765                   |
| 329.00              | 983                     | 331.65              | 10,031                  |
| 329.05              | 1,063                   | 331.70              | 10,300                  |
| 329.10              | 1,147                   | 331.75              | 10,574                  |
| 329.15              | 1,234                   | 331.80              | 10,852                  |
| 329.20              | 1,324                   | 331.85              | 11,133                  |
| 329.25              | 1,417                   | 331.90              | 11,416                  |
| 329.30              | 1,514                   | 331.95              | 11,703                  |
| 329.35              | 1,614                   | 332.00              | 11,993                  |
| 329.40              | 1,718                   | 332.05              | 12,286                  |
| 329.45              | 1,825                   | 332.10              | 12,580                  |
| 329.50              | 1,936                   | 332.15              | 12,877                  |
| 329.55              | 2,051                   | 332.20              | 13,176                  |
| 329.60              | 2,169                   | 332.25              | 13,477                  |
| 329.65              | 2,291                   | 332.30              | 13,780                  |
| 329.70              | 2,417                   | 332.35              | 14,085                  |
| 329.75              | 2,547                   | 332.40              | 14,392                  |
| 329.80              | 2,681                   | 332.45              | 14,701                  |
| 329.85              | 2,819                   | 332.50              | 15,013                  |
| 329.90              | 2,961                   | 332.55              | 15,327                  |
| 329.95              | 3,107                   | 332.60              | 15,642                  |
| 330.00              | 3,257                   | 332.65              | 15,960                  |
| 330.05              | 3,411                   | 332.70              | 16,280                  |
| 330.10              | 3,568                   | 332.75              | <b>16,603</b>           |

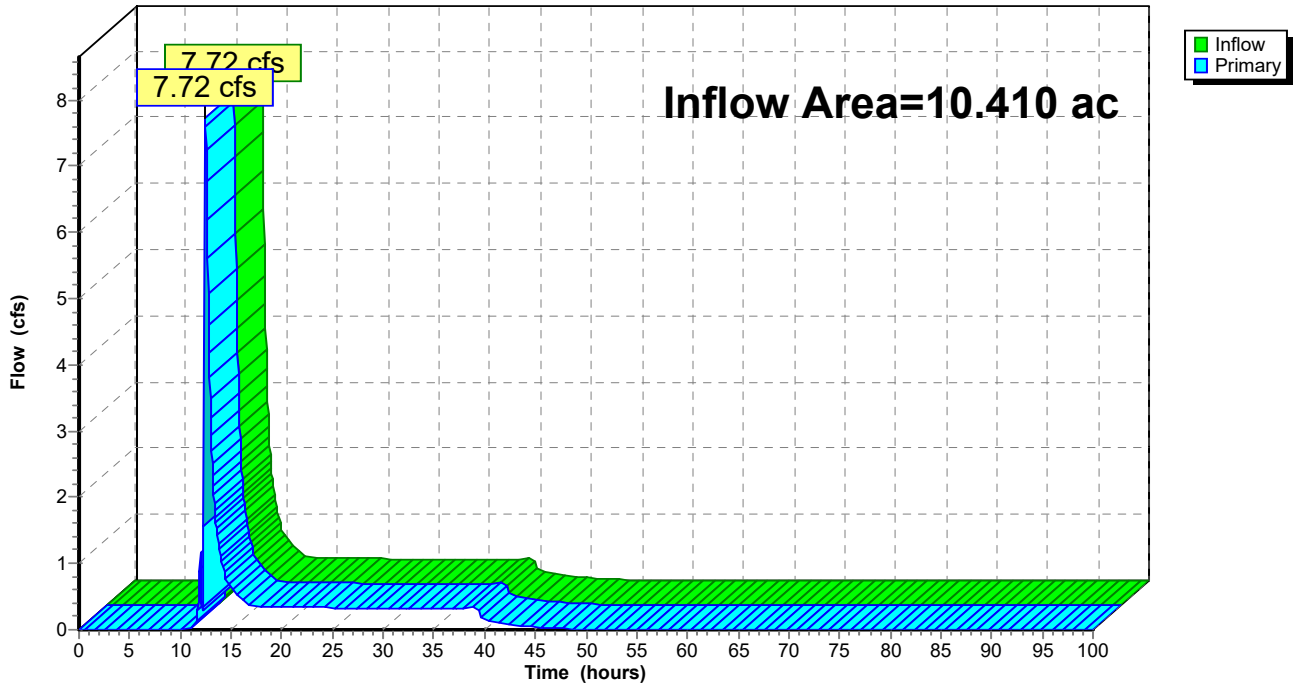
### Summary for Link AP3: Analysis Point 3

Inflow Area = 10.410 ac, 13.37% Impervious, Inflow Depth = 1.53" for 100-yr event  
Inflow = 7.72 cfs @ 12.45 hrs, Volume= 1.331 af  
Primary = 7.72 cfs @ 12.45 hrs, Volume= 1.331 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3

Hydrograph



**Hydrograph for Link AP3: Analysis Point 3**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.01         | 0.00             | 0.01          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.01         | 0.00             | 0.01          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.03         | 0.00             | 0.03          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>1.12</b>  | 0.00             | <b>1.12</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>3.20</b>  | 0.00             | <b>3.20</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 1.05         | 0.00             | 1.05          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.63         | 0.00             | 0.63          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.46         | 0.00             | 0.46          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.35         | 0.00             | 0.35          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.35         | 0.00             | 0.35          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.35         | 0.00             | 0.35          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.34         | 0.00             | 0.34          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.34         | 0.00             | 0.34          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.34         | 0.00             | 0.34          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.34         | 0.00             | 0.34          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.34         | 0.00             | 0.34          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.33         | 0.00             | 0.33          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.33         | 0.00             | 0.33          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.33         | 0.00             | 0.33          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.33         | 0.00             | 0.33          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.33         | 0.00             | 0.33          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.33         | 0.00             | 0.33          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.33         | 0.00             | 0.33          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.33         | 0.00             | 0.33          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.33         | 0.00             | 0.33          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.33         | 0.00             | 0.33          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.33         | 0.00             | 0.33          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.33         | 0.00             | 0.33          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.33         | 0.00             | 0.33          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.33         | 0.00             | 0.33          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.33         | 0.00             | 0.33          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.15         | 0.00             | 0.15          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.12         | 0.00             | 0.12          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.10         | 0.00             | 0.10          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.07         | 0.00             | 0.07          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.05         | 0.00             | 0.05          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.04         | 0.00             | 0.04          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.02         | 0.00             | 0.02          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.02         | 0.00             | 0.02          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 49.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 50.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 51.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

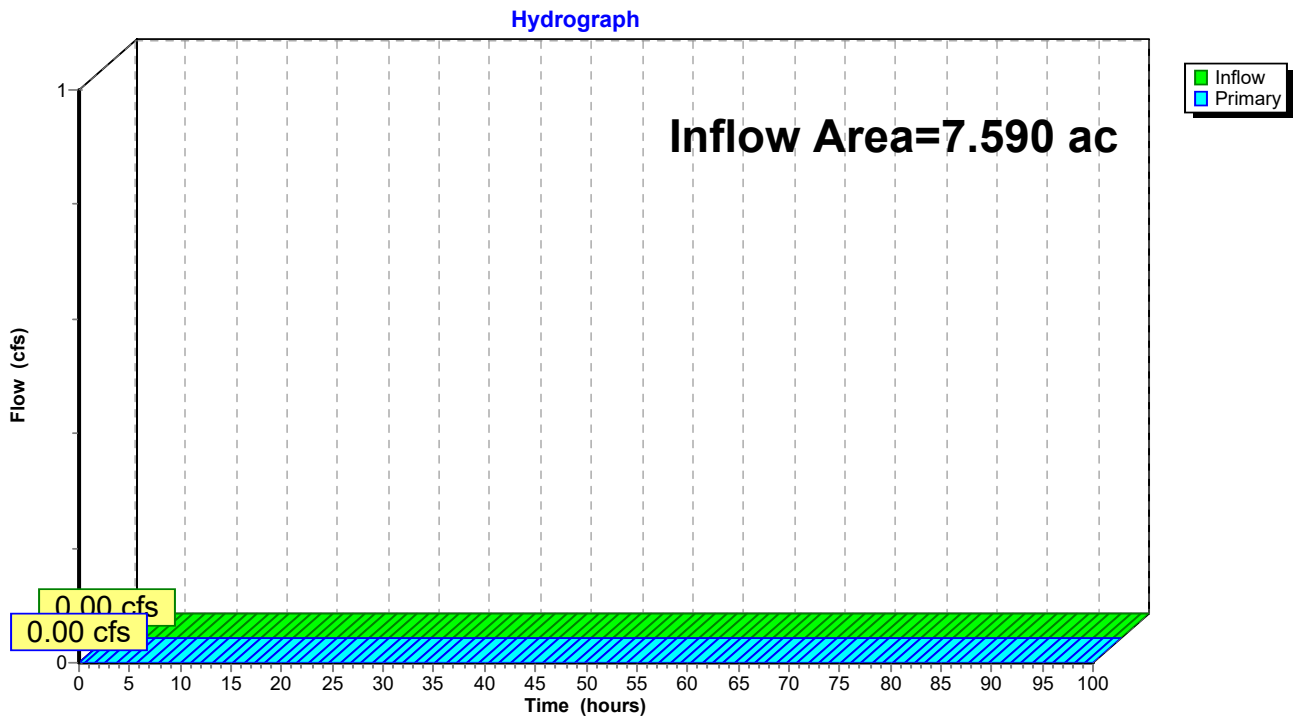


### Summary for Link AP4: Analysis Point 4

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.00" for 100-yr event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

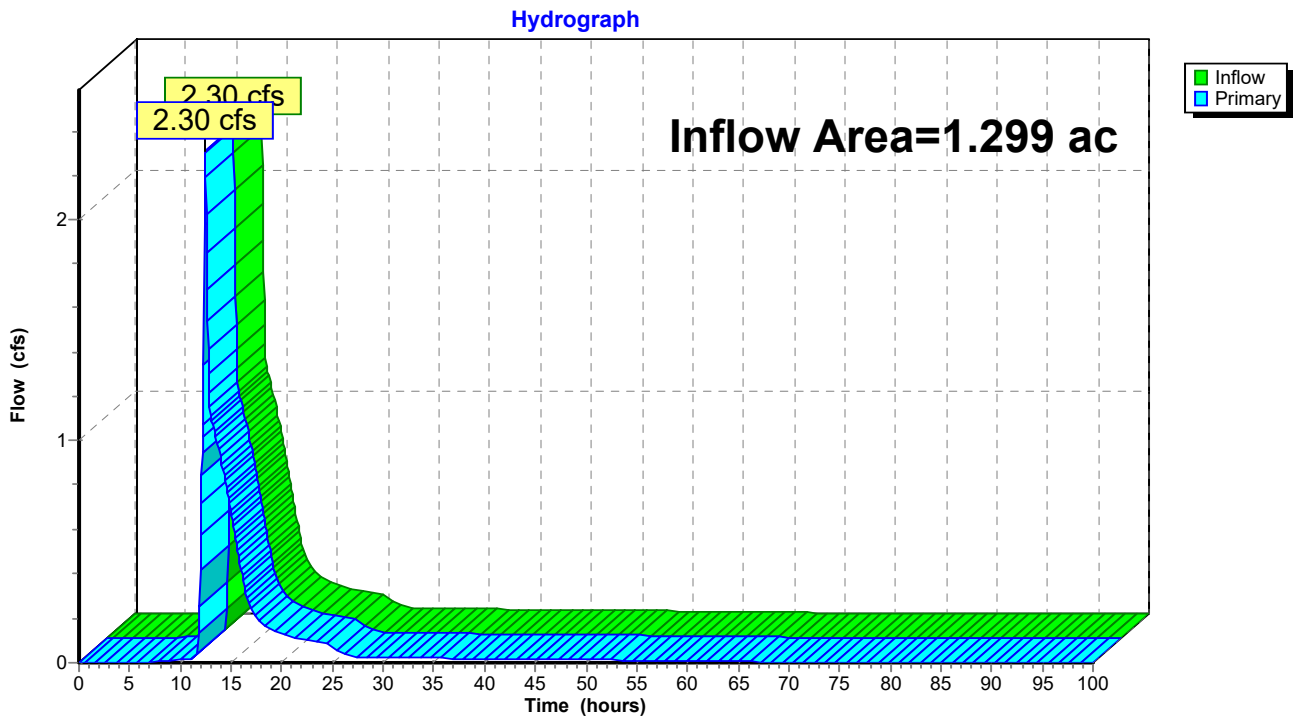
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP5: Analysis Point 5

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 4.52" for 100-yr event  
Inflow = 2.30 cfs @ 12.43 hrs, Volume= 0.490 af  
Primary = 2.30 cfs @ 12.43 hrs, Volume= 0.490 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5



**Hydrograph for Link AP5: Analysis Point 5**

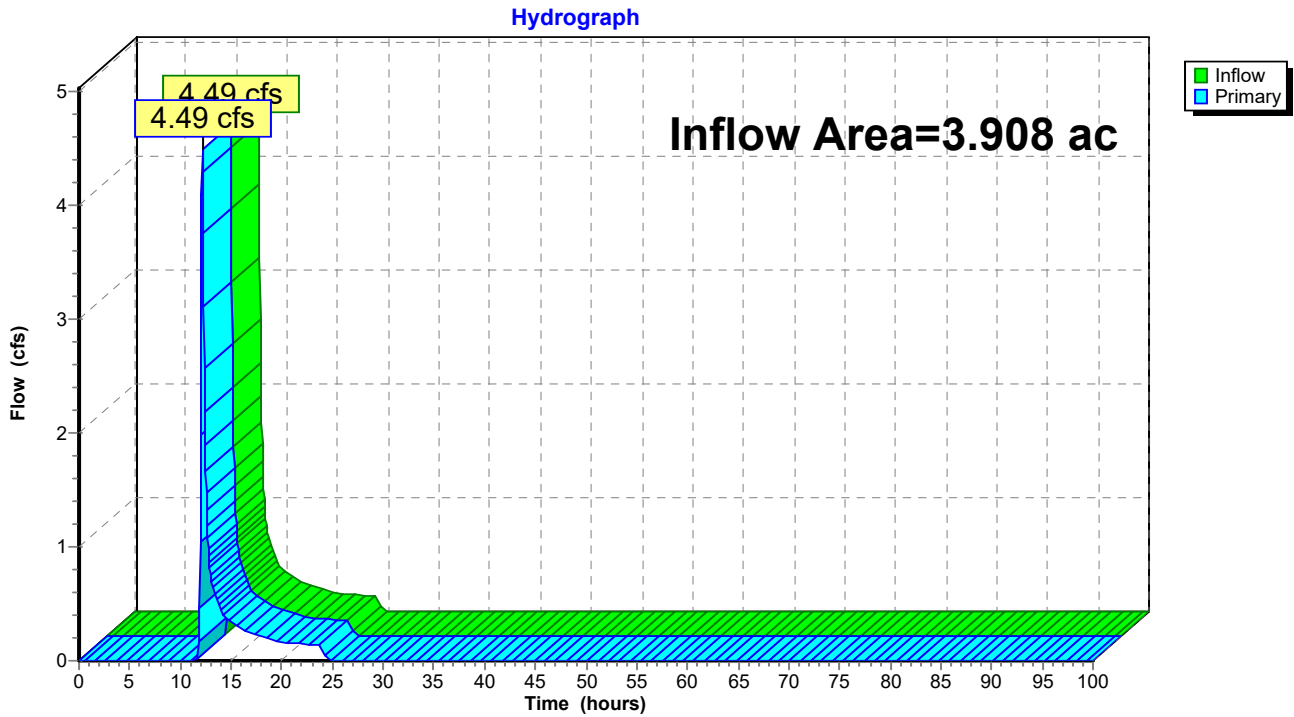
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.01         | 0.00             | 0.01          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.01         | 0.00             | 0.01          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.01         | 0.00             | 0.01          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.01         | 0.00             | 0.01          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.01         | 0.00             | 0.01          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.01         | 0.00             | 0.01          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.01         | 0.00             | 0.01          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.01         | 0.00             | 0.01          |
| 8.00         | 0.01         | 0.00             | 0.01          | 61.00        | 0.01         | 0.00             | 0.01          |
| 9.00         | 0.01         | 0.00             | 0.01          | 62.00        | 0.01         | 0.00             | 0.01          |
| 10.00        | 0.01         | 0.00             | 0.01          | 63.00        | 0.01         | 0.00             | 0.01          |
| 11.00        | 0.02         | 0.00             | 0.02          | 64.00        | 0.01         | 0.00             | 0.01          |
| 12.00        | <b>0.58</b>  | 0.00             | <b>0.58</b>   | 65.00        | 0.01         | 0.00             | 0.01          |
| 13.00        | <b>1.09</b>  | 0.00             | <b>1.09</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.92         | 0.00             | 0.92          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.67         | 0.00             | 0.67          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.41         | 0.00             | 0.41          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.24         | 0.00             | 0.24          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.18         | 0.00             | 0.18          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.15         | 0.00             | 0.15          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.13         | 0.00             | 0.13          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.11         | 0.00             | 0.11          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.10         | 0.00             | 0.10          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.10         | 0.00             | 0.10          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.09         | 0.00             | 0.09          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.07         | 0.00             | 0.07          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.04         | 0.00             | 0.04          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.03         | 0.00             | 0.03          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.02         | 0.00             | 0.02          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.02         | 0.00             | 0.02          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.02         | 0.00             | 0.02          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.02         | 0.00             | 0.02          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.02         | 0.00             | 0.02          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.02         | 0.00             | 0.02          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.02         | 0.00             | 0.02          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.02         | 0.00             | 0.02          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.02         | 0.00             | 0.02          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.02         | 0.00             | 0.02          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.02         | 0.00             | 0.02          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.02         | 0.00             | 0.02          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.02         | 0.00             | 0.02          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.02         | 0.00             | 0.02          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.02         | 0.00             | 0.02          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.02         | 0.00             | 0.02          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.02         | 0.00             | 0.02          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.02         | 0.00             | 0.02          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.02         | 0.00             | 0.02          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.01         | 0.00             | 0.01          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 49.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 50.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 51.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |
| 52.00        | 0.01         | 0.00             | 0.01          |              |              |                  |               |

**Summary for Link AP6: Analysis Point 6**

Inflow Area = 3.908 ac, 0.00% Impervious, Inflow Depth = 1.26" for 100-yr event  
 Inflow = 4.49 cfs @ 12.16 hrs, Volume= 0.411 af  
 Primary = 4.49 cfs @ 12.16 hrs, Volume= 0.411 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

**Link AP6: Analysis Point 6**



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>1.98</b>  | 0.00             | <b>1.98</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | <b>0.74</b>  | 0.00             | <b>0.74</b>   | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.44         | 0.00             | 0.44          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.34         | 0.00             | 0.34          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.28         | 0.00             | 0.28          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.24         | 0.00             | 0.24          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.22         | 0.00             | 0.22          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.19         | 0.00             | 0.19          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.16         | 0.00             | 0.16          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.15         | 0.00             | 0.15          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.15         | 0.00             | 0.15          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.14         | 0.00             | 0.14          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.14         | 0.00             | 0.14          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr WQv Rainfall=1.20"**

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Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points x 2  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 6S: Subcatchment 6** Runoff Area=1.299 ac 35.18% Impervious Runoff Depth=0.27"  
Flow Length=73' Tc=9.6 min CN=85 Runoff=0.50 cfs 0.030 af

**Subcatchment S4a: Subcatchment 4a** Runoff Area=10.222 ac 13.62% Impervious Runoff Depth=0.00"  
Flow Length=907' Tc=38.7 min CN=53 Runoff=0.00 cfs 0.000 af

**Subcatchment S4b: Subcatchment 4b** Runoff Area=0.188 ac 0.00% Impervious Runoff Depth=0.10"  
Tc=6.0 min CN=77 Runoff=0.02 cfs 0.002 af

**Subcatchment S5a: Subcatchment 5a** Runoff Area=5.515 ac 54.87% Impervious Runoff Depth=0.27"  
Flow Length=634' Tc=17.7 min CN=85 Runoff=1.56 cfs 0.126 af

**Subcatchment S5b: Subcatchment 5b** Runoff Area=2.075 ac 33.06% Impervious Runoff Depth=0.00"  
Flow Length=207' Tc=68.8 min CN=52 Runoff=0.00 cfs 0.000 af

**Subcatchment S7: Subcatchment 7** Runoff Area=3.908 ac 0.00% Impervious Runoff Depth=0.00"  
Flow Length=531' Tc=19.9 min CN=50 Runoff=0.00 cfs 0.000 af

**Reach R10: 10" Culvert Pond Discharge** Avg. Flow Depth=0.04' Max Vel=1.28 fps Inflow=0.01 cfs 0.029 af  
10.0" Round Pipe n=0.012 L=27.0' S=0.0122 '/' Capacity=2.62 cfs Outflow=0.01 cfs 0.029 af

**Reach R11: Proposed RRv Swale - 268'** Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
n=0.035 L=268.0' S=0.0047 '/' Capacity=16.83 cfs Outflow=0.00 cfs 0.000 af

**Reach R12: 12" Culvert Pond Discharge** Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
12.0" Round Pipe n=0.012 L=137.0' S=0.0001 '/' Capacity=0.33 cfs Outflow=0.00 cfs 0.000 af

**Reach R7: Proposed RRv Swale** Avg. Flow Depth=0.32' Max Vel=0.86 fps Inflow=1.56 cfs 0.126 af  
n=0.080 L=318.0' S=0.0126 '/' Capacity=35.37 cfs Outflow=1.36 cfs 0.126 af

**Reach R8: Proposed RRv Swale** Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
n=0.080 L=568.0' S=0.0158 '/' Capacity=8.32 cfs Outflow=0.00 cfs 0.000 af

**Reach R9: Proposed RRV Swale** Avg. Flow Depth=0.17' Max Vel=0.37 fps Inflow=0.50 cfs 0.030 af  
n=0.080 L=764.0' S=0.0056 '/' Capacity=8.04 cfs Outflow=0.16 cfs 0.030 af

**Pond 4P: Proposed Stormwater Pond** Peak Elev=337.00' Storage=1,362 cf Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

**Pond 5P: Proposed Infiltration Basin** Peak Elev=325.51' Storage=18 cf Inflow=1.36 cfs 0.126 af  
Discarded=1.36 cfs 0.126 af Secondary=0.00 cfs 0.000 af Outflow=1.36 cfs 0.126 af

**Pond 6P: Proposed Stormwater Pond** Peak Elev=329.65' Storage=2,301 cf Inflow=0.16 cfs 0.030 af  
Primary=0.01 cfs 0.029 af Secondary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.029 af

**Link AP3: Analysis Point 3** Inflow=0.02 cfs 0.002 af  
Primary=0.02 cfs 0.002 af

**Link AP4: Analysis Point 4**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Link AP5: Analysis Point 5**

Inflow=0.01 cfs 0.029 af  
Primary=0.01 cfs 0.029 af

**Link AP6: Analysis Point 6**

Inflow=0.00 cfs 0.000 af  
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 23.207 ac   Runoff Volume = 0.158 af   Average Runoff Depth = 0.08"**  
**76.04% Pervious = 17.646 ac   23.96% Impervious = 5.561 ac**



**Summary for Subcatchment 6S: Subcatchment 6**

Runoff = 0.50 cfs @ 12.03 hrs, Volume= 0.030 af, Depth= 0.27"  
 Routed to Reach R9 : Proposed RRV Swale

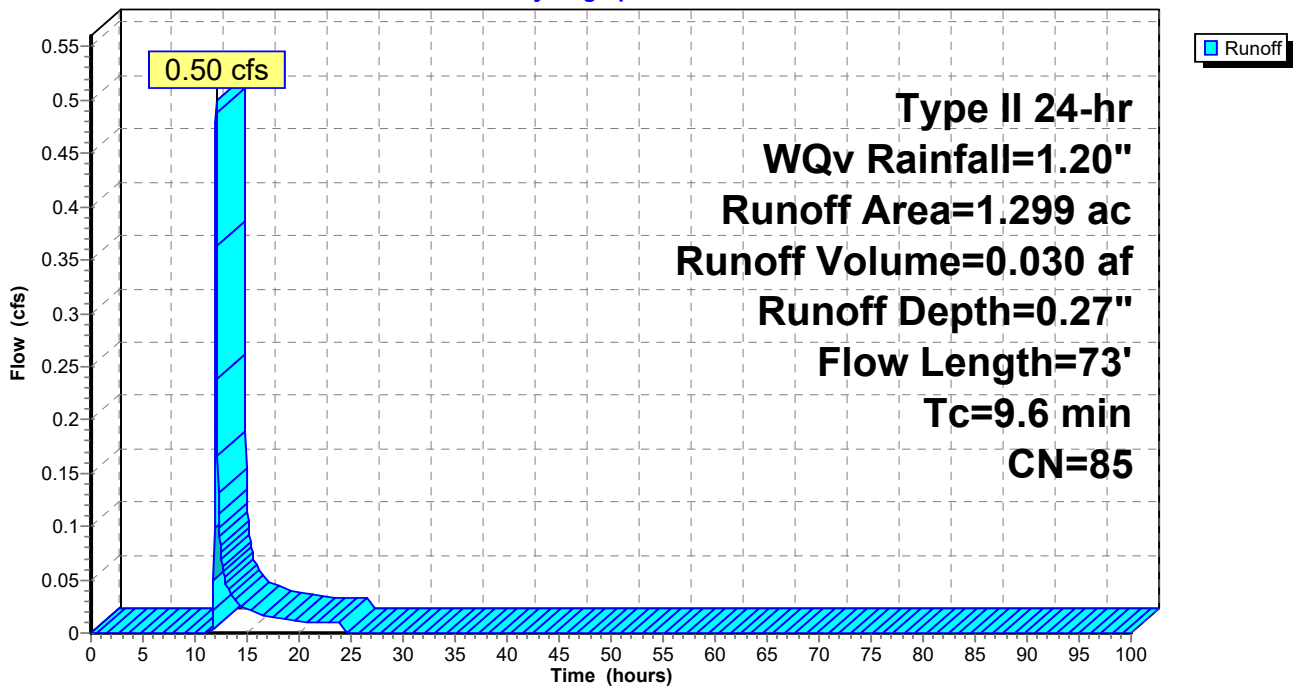
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.411     | 98 | Paved parking, HSG D      |
| 0.021     | 30 | Meadow, non-grazed, HSG A |
| 0.057     | 94 | Fallow, bare soil, HSG D  |
| 0.764     | 78 | Meadow, non-grazed, HSG D |
| * 0.046   | 98 | Water Surface, HSG D      |
| 1.299     | 85 | Weighted Average          |
| 0.842     |    | 64.82% Pervious Area      |
| 0.457     |    | 35.18% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.6      | 65            | 0.0154        | 0.13              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59" |
| 1.0      | 8             | 0.1328        | 0.14              |                | <b>Sheet Flow, Hydro Flow</b><br>Grass: Dense n= 0.240 P2= 2.59" |
| 9.6      | 73            | Total         |                   |                |  |

**Subcatchment 6S: Subcatchment 6**

Hydrograph



**Hydrograph for Subcatchment 6S: Subcatchment 6**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.27            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.27            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.27            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.27            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.27            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.27            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.27            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.27            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.27            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.27            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.27            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.27            | 0.00         |
| 12.00        | 0.80             | 0.09            | <b>0.48</b>  | 65.00        | 1.20             | 0.27            | 0.00         |
| 13.00        | 0.93             | 0.14            | <b>0.05</b>  | 66.00        | 1.20             | 0.27            | 0.00         |
| 14.00        | 0.98             | 0.17            | 0.03         | 67.00        | 1.20             | 0.27            | 0.00         |
| 15.00        | 1.02             | 0.18            | 0.02         | 68.00        | 1.20             | 0.27            | 0.00         |
| 16.00        | 1.06             | 0.20            | 0.02         | 69.00        | 1.20             | 0.27            | 0.00         |
| 17.00        | 1.08             | 0.21            | 0.02         | 70.00        | 1.20             | 0.27            | 0.00         |
| 18.00        | 1.11             | 0.22            | 0.01         | 71.00        | 1.20             | 0.27            | 0.00         |
| 19.00        | 1.13             | 0.24            | 0.01         | 72.00        | 1.20             | 0.27            | 0.00         |
| 20.00        | 1.14             | 0.24            | 0.01         | 73.00        | 1.20             | 0.27            | 0.00         |
| 21.00        | 1.16             | 0.25            | 0.01         | 74.00        | 1.20             | 0.27            | 0.00         |
| 22.00        | 1.17             | 0.26            | 0.01         | 75.00        | 1.20             | 0.27            | 0.00         |
| 23.00        | 1.19             | 0.27            | 0.01         | 76.00        | 1.20             | 0.27            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.27</b>     | 0.01         | 77.00        | 1.20             | 0.27            | 0.00         |
| 25.00        | 1.20             | 0.27            | 0.00         | 78.00        | 1.20             | 0.27            | 0.00         |
| 26.00        | 1.20             | 0.27            | 0.00         | 79.00        | 1.20             | 0.27            | 0.00         |
| 27.00        | 1.20             | 0.27            | 0.00         | 80.00        | 1.20             | 0.27            | 0.00         |
| 28.00        | 1.20             | 0.27            | 0.00         | 81.00        | 1.20             | 0.27            | 0.00         |
| 29.00        | 1.20             | 0.27            | 0.00         | 82.00        | 1.20             | 0.27            | 0.00         |
| 30.00        | 1.20             | 0.27            | 0.00         | 83.00        | 1.20             | 0.27            | 0.00         |
| 31.00        | 1.20             | 0.27            | 0.00         | 84.00        | 1.20             | 0.27            | 0.00         |
| 32.00        | 1.20             | 0.27            | 0.00         | 85.00        | 1.20             | 0.27            | 0.00         |
| 33.00        | 1.20             | 0.27            | 0.00         | 86.00        | 1.20             | 0.27            | 0.00         |
| 34.00        | 1.20             | 0.27            | 0.00         | 87.00        | 1.20             | 0.27            | 0.00         |
| 35.00        | 1.20             | 0.27            | 0.00         | 88.00        | 1.20             | 0.27            | 0.00         |
| 36.00        | 1.20             | 0.27            | 0.00         | 89.00        | 1.20             | 0.27            | 0.00         |
| 37.00        | 1.20             | 0.27            | 0.00         | 90.00        | 1.20             | 0.27            | 0.00         |
| 38.00        | 1.20             | 0.27            | 0.00         | 91.00        | 1.20             | 0.27            | 0.00         |
| 39.00        | 1.20             | 0.27            | 0.00         | 92.00        | 1.20             | 0.27            | 0.00         |
| 40.00        | 1.20             | 0.27            | 0.00         | 93.00        | 1.20             | 0.27            | 0.00         |
| 41.00        | 1.20             | 0.27            | 0.00         | 94.00        | 1.20             | 0.27            | 0.00         |
| 42.00        | 1.20             | 0.27            | 0.00         | 95.00        | 1.20             | 0.27            | 0.00         |
| 43.00        | 1.20             | 0.27            | 0.00         | 96.00        | 1.20             | 0.27            | 0.00         |
| 44.00        | 1.20             | 0.27            | 0.00         | 97.00        | 1.20             | 0.27            | 0.00         |
| 45.00        | 1.20             | 0.27            | 0.00         | 98.00        | 1.20             | 0.27            | 0.00         |
| 46.00        | 1.20             | 0.27            | 0.00         | 99.00        | 1.20             | 0.27            | 0.00         |
| 47.00        | 1.20             | 0.27            | 0.00         | 100.00       | 1.20             | 0.27            | 0.00         |
| 48.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S4a: Subcatchment 4a**

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"  
 Routed to Reach R11 : Proposed RRv Swale - 268' Prior to Stormwater Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description                   |
|-----------|----|-------------------------------|
| * 0.470   | 98 | Paved roads, HSG A            |
| 0.681     | 39 | >75% Grass cover, Good, HSG A |
| 0.818     | 30 | Meadow, non-grazed, HSG A     |
| 0.105     | 98 | Roofs, HSG A                  |
| 0.331     | 98 | Paved parking, HSG A          |
| 0.247     | 98 | Paved parking, HSG D          |
| 4.615     | 30 | Woods, Good, HSG A            |
| 0.519     | 77 | Woods, Good, HSG D            |
| 0.020     | 94 | Fallow, bare soil, HSG D      |
| 2.177     | 80 | >75% Grass cover, Good, HSG D |
| 0.118     | 98 | Roofs, HSG D                  |
| 0.079     | 98 | Paved parking, HSG D          |
| 0.042     | 98 | Water Surface, HSG D          |
| 10.222    | 53 | Weighted Average              |
| 8.830     |    | 86.38% Pervious Area          |
| 1.392     |    | 13.62% Impervious Area        |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr WQv Rainfall=1.20"**

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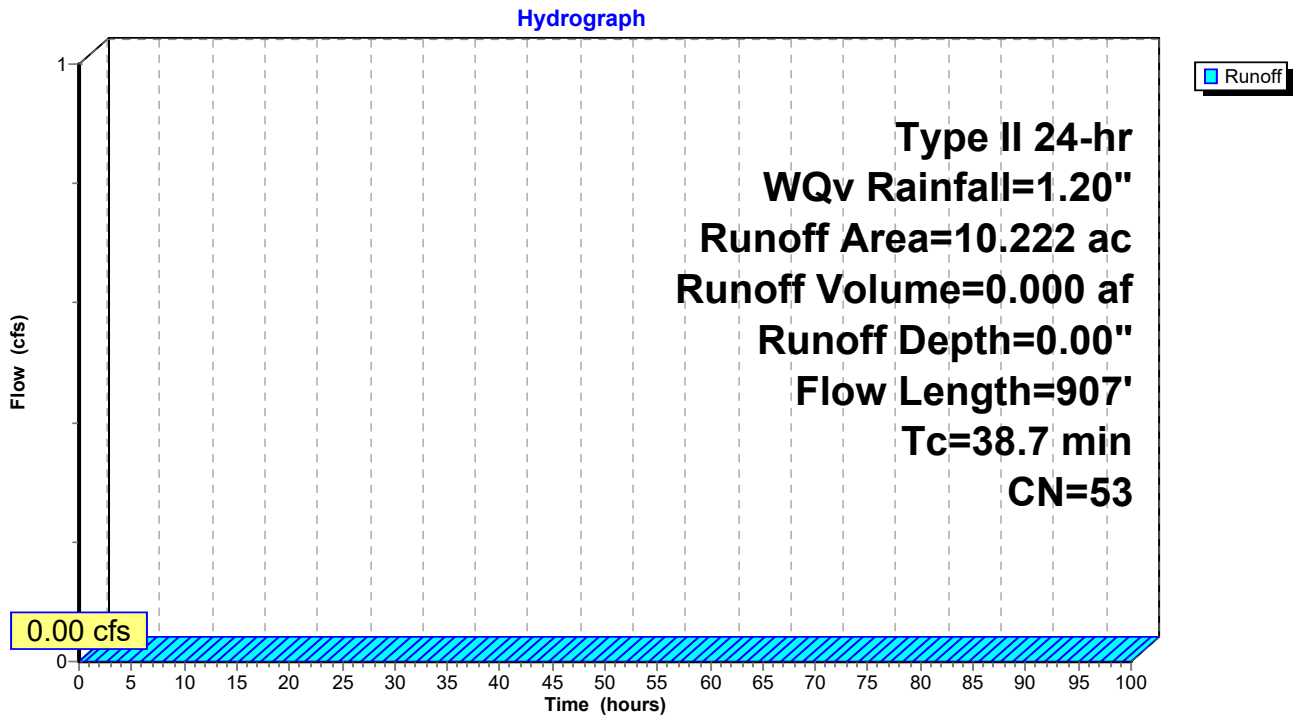
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| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description   |
|-------------|------------------|------------------|----------------------|-------------------|---|
| 0.2         | 7                | 0.0176           | 0.69                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"             |
| 1.5         | 13               | 0.0447           | 0.14                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Grass: Short n= 0.150 P2= 2.59"                |
| 6.2         | 43               | 0.4276           | 0.12                 |                   | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 0.5         | 42               | 0.0809           | 1.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 1.8         | 66               | 0.0151           | 0.61                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 38               | 0.0526           | 1.15                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.6         | 32               | 0.0312           | 0.88                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 3.5         | 130              | 0.0155           | 0.62                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 6.9         | 205              | 0.0098           | 0.49                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.6         | 65               | 0.0069           | 0.42                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.3         | 7                | 0.0001           | 0.05                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 2.4         | 10               | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 1.2         | 5                | 0.0001           | 0.07                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 7.7         | 172              | 0.0028           | 0.37                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.4         | 46               | 0.0100           | 2.03                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps              |
| 0.1         | 9                | 0.0890           | 2.09                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.2         | 17               | 0.0360           | 1.33                 |                   | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 38.7        | 907              | Total            |                      |                   |   |

### Subcatchment S4a: Subcatchment 4a



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr WQv Rainfall=1.20"**

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**Hydrograph for Subcatchment S4a: Subcatchment 4a**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | <b>0.00</b>        | <b>0.00</b>     | 53.00           | 1.20                | 0.00               | 0.00            |
| 1.00            | 0.01                | 0.00               | 0.00            | 54.00           | 1.20                | 0.00               | 0.00            |
| 2.00            | 0.03                | 0.00               | 0.00            | 55.00           | 1.20                | 0.00               | 0.00            |
| 3.00            | 0.04                | 0.00               | 0.00            | 56.00           | 1.20                | 0.00               | 0.00            |
| 4.00            | 0.06                | 0.00               | 0.00            | 57.00           | 1.20                | 0.00               | 0.00            |
| 5.00            | 0.08                | 0.00               | 0.00            | 58.00           | 1.20                | 0.00               | 0.00            |
| 6.00            | 0.10                | 0.00               | 0.00            | 59.00           | 1.20                | 0.00               | 0.00            |
| 7.00            | 0.12                | 0.00               | 0.00            | 60.00           | 1.20                | 0.00               | 0.00            |
| 8.00            | 0.14                | 0.00               | 0.00            | 61.00           | 1.20                | 0.00               | 0.00            |
| 9.00            | 0.18                | 0.00               | 0.00            | 62.00           | 1.20                | 0.00               | 0.00            |
| 10.00           | 0.22                | 0.00               | 0.00            | 63.00           | 1.20                | 0.00               | 0.00            |
| 11.00           | 0.28                | 0.00               | 0.00            | 64.00           | 1.20                | 0.00               | 0.00            |
| 12.00           | 0.80                | 0.00               | 0.00            | 65.00           | 1.20                | 0.00               | 0.00            |
| 13.00           | 0.93                | 0.00               | 0.00            | 66.00           | 1.20                | 0.00               | 0.00            |
| 14.00           | 0.98                | 0.00               | 0.00            | 67.00           | 1.20                | 0.00               | 0.00            |
| 15.00           | 1.02                | 0.00               | 0.00            | 68.00           | 1.20                | 0.00               | 0.00            |
| 16.00           | 1.06                | 0.00               | 0.00            | 69.00           | 1.20                | 0.00               | 0.00            |
| 17.00           | 1.08                | 0.00               | 0.00            | 70.00           | 1.20                | 0.00               | 0.00            |
| 18.00           | 1.11                | 0.00               | 0.00            | 71.00           | 1.20                | 0.00               | 0.00            |
| 19.00           | 1.13                | 0.00               | 0.00            | 72.00           | 1.20                | 0.00               | 0.00            |
| 20.00           | 1.14                | 0.00               | 0.00            | 73.00           | 1.20                | 0.00               | 0.00            |
| 21.00           | 1.16                | 0.00               | 0.00            | 74.00           | 1.20                | 0.00               | 0.00            |
| 22.00           | 1.17                | 0.00               | 0.00            | 75.00           | 1.20                | 0.00               | 0.00            |
| 23.00           | 1.19                | 0.00               | 0.00            | 76.00           | 1.20                | 0.00               | 0.00            |
| 24.00           | <b>1.20</b>         | 0.00               | 0.00            | 77.00           | 1.20                | 0.00               | 0.00            |
| 25.00           | 1.20                | 0.00               | 0.00            | 78.00           | 1.20                | 0.00               | 0.00            |
| 26.00           | 1.20                | 0.00               | 0.00            | 79.00           | 1.20                | 0.00               | 0.00            |
| 27.00           | 1.20                | 0.00               | 0.00            | 80.00           | 1.20                | 0.00               | 0.00            |
| 28.00           | 1.20                | 0.00               | 0.00            | 81.00           | 1.20                | 0.00               | 0.00            |
| 29.00           | 1.20                | 0.00               | 0.00            | 82.00           | 1.20                | 0.00               | 0.00            |
| 30.00           | 1.20                | 0.00               | 0.00            | 83.00           | 1.20                | 0.00               | 0.00            |
| 31.00           | 1.20                | 0.00               | 0.00            | 84.00           | 1.20                | 0.00               | 0.00            |
| 32.00           | 1.20                | 0.00               | 0.00            | 85.00           | 1.20                | 0.00               | 0.00            |
| 33.00           | 1.20                | 0.00               | 0.00            | 86.00           | 1.20                | 0.00               | 0.00            |
| 34.00           | 1.20                | 0.00               | 0.00            | 87.00           | 1.20                | 0.00               | 0.00            |
| 35.00           | 1.20                | 0.00               | 0.00            | 88.00           | 1.20                | 0.00               | 0.00            |
| 36.00           | 1.20                | 0.00               | 0.00            | 89.00           | 1.20                | 0.00               | 0.00            |
| 37.00           | 1.20                | 0.00               | 0.00            | 90.00           | 1.20                | 0.00               | 0.00            |
| 38.00           | 1.20                | 0.00               | 0.00            | 91.00           | 1.20                | 0.00               | 0.00            |
| 39.00           | 1.20                | 0.00               | 0.00            | 92.00           | 1.20                | 0.00               | 0.00            |
| 40.00           | 1.20                | 0.00               | 0.00            | 93.00           | 1.20                | 0.00               | 0.00            |
| 41.00           | 1.20                | 0.00               | 0.00            | 94.00           | 1.20                | 0.00               | 0.00            |
| 42.00           | 1.20                | 0.00               | 0.00            | 95.00           | 1.20                | 0.00               | 0.00            |
| 43.00           | 1.20                | 0.00               | 0.00            | 96.00           | 1.20                | 0.00               | 0.00            |
| 44.00           | 1.20                | 0.00               | 0.00            | 97.00           | 1.20                | 0.00               | 0.00            |
| 45.00           | 1.20                | 0.00               | 0.00            | 98.00           | 1.20                | 0.00               | 0.00            |
| 46.00           | 1.20                | 0.00               | 0.00            | 99.00           | 1.20                | 0.00               | 0.00            |
| 47.00           | 1.20                | 0.00               | 0.00            | 100.00          | 1.20                | 0.00               | 0.00            |
| 48.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 49.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 50.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 51.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 52.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S4b: Subcatchment 4b**

Runoff = 0.02 cfs @ 12.02 hrs, Volume= 0.002 af, Depth= 0.10"  
 Routed to Link AP3 : Analysis Point 3

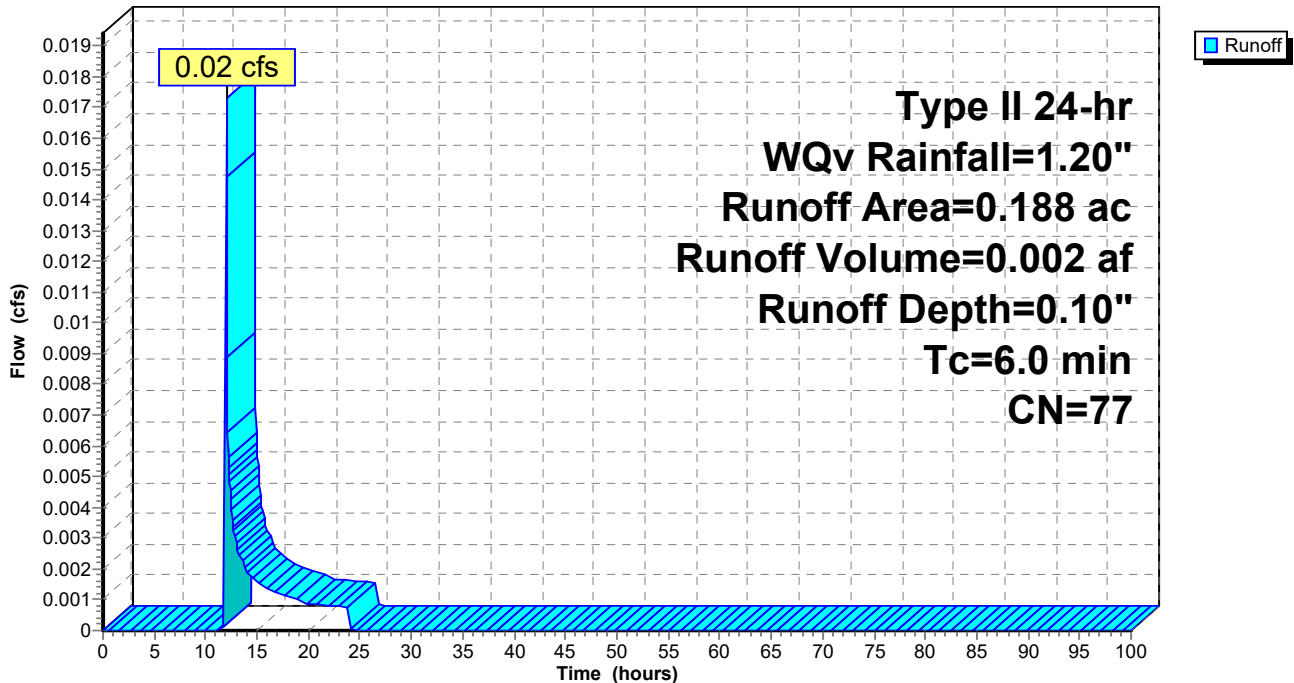
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.114     | 77 | Woods, Good, HSG D        |
| 0.074     | 78 | Meadow, non-grazed, HSG D |
| 0.188     | 77 | Weighted Average          |
| 0.188     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description              |
|----------|---------------|---------------|-------------------|----------------|--------------------------|
| 6.0      |               |               |                   |                | Direct Entry, Hydro Flow |

**Subcatchment S4b: Subcatchment 4b**

Hydrograph



**Hydrograph for Subcatchment S4b: Subcatchment 4b**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.10            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.10            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.10            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.10            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.10            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.10            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.10            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.10            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.10            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.10            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.10            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.10            | 0.00         |
| 12.00        | 0.80             | 0.01            | <b>0.02</b>  | 65.00        | 1.20             | 0.10            | 0.00         |
| 13.00        | 0.93             | 0.03            | 0.00         | 66.00        | 1.20             | 0.10            | 0.00         |
| 14.00        | 0.98             | 0.04            | 0.00         | 67.00        | 1.20             | 0.10            | 0.00         |
| 15.00        | 1.02             | 0.05            | 0.00         | 68.00        | 1.20             | 0.10            | 0.00         |
| 16.00        | 1.06             | 0.06            | 0.00         | 69.00        | 1.20             | 0.10            | 0.00         |
| 17.00        | 1.08             | 0.07            | 0.00         | 70.00        | 1.20             | 0.10            | 0.00         |
| 18.00        | 1.11             | 0.07            | 0.00         | 71.00        | 1.20             | 0.10            | 0.00         |
| 19.00        | 1.13             | 0.08            | 0.00         | 72.00        | 1.20             | 0.10            | 0.00         |
| 20.00        | 1.14             | 0.08            | 0.00         | 73.00        | 1.20             | 0.10            | 0.00         |
| 21.00        | 1.16             | 0.09            | 0.00         | 74.00        | 1.20             | 0.10            | 0.00         |
| 22.00        | 1.17             | 0.09            | 0.00         | 75.00        | 1.20             | 0.10            | 0.00         |
| 23.00        | 1.19             | 0.10            | 0.00         | 76.00        | 1.20             | 0.10            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.10</b>     | 0.00         | 77.00        | 1.20             | 0.10            | 0.00         |
| 25.00        | 1.20             | 0.10            | 0.00         | 78.00        | 1.20             | 0.10            | 0.00         |
| 26.00        | 1.20             | 0.10            | 0.00         | 79.00        | 1.20             | 0.10            | 0.00         |
| 27.00        | 1.20             | 0.10            | 0.00         | 80.00        | 1.20             | 0.10            | 0.00         |
| 28.00        | 1.20             | 0.10            | 0.00         | 81.00        | 1.20             | 0.10            | 0.00         |
| 29.00        | 1.20             | 0.10            | 0.00         | 82.00        | 1.20             | 0.10            | 0.00         |
| 30.00        | 1.20             | 0.10            | 0.00         | 83.00        | 1.20             | 0.10            | 0.00         |
| 31.00        | 1.20             | 0.10            | 0.00         | 84.00        | 1.20             | 0.10            | 0.00         |
| 32.00        | 1.20             | 0.10            | 0.00         | 85.00        | 1.20             | 0.10            | 0.00         |
| 33.00        | 1.20             | 0.10            | 0.00         | 86.00        | 1.20             | 0.10            | 0.00         |
| 34.00        | 1.20             | 0.10            | 0.00         | 87.00        | 1.20             | 0.10            | 0.00         |
| 35.00        | 1.20             | 0.10            | 0.00         | 88.00        | 1.20             | 0.10            | 0.00         |
| 36.00        | 1.20             | 0.10            | 0.00         | 89.00        | 1.20             | 0.10            | 0.00         |
| 37.00        | 1.20             | 0.10            | 0.00         | 90.00        | 1.20             | 0.10            | 0.00         |
| 38.00        | 1.20             | 0.10            | 0.00         | 91.00        | 1.20             | 0.10            | 0.00         |
| 39.00        | 1.20             | 0.10            | 0.00         | 92.00        | 1.20             | 0.10            | 0.00         |
| 40.00        | 1.20             | 0.10            | 0.00         | 93.00        | 1.20             | 0.10            | 0.00         |
| 41.00        | 1.20             | 0.10            | 0.00         | 94.00        | 1.20             | 0.10            | 0.00         |
| 42.00        | 1.20             | 0.10            | 0.00         | 95.00        | 1.20             | 0.10            | 0.00         |
| 43.00        | 1.20             | 0.10            | 0.00         | 96.00        | 1.20             | 0.10            | 0.00         |
| 44.00        | 1.20             | 0.10            | 0.00         | 97.00        | 1.20             | 0.10            | 0.00         |
| 45.00        | 1.20             | 0.10            | 0.00         | 98.00        | 1.20             | 0.10            | 0.00         |
| 46.00        | 1.20             | 0.10            | 0.00         | 99.00        | 1.20             | 0.10            | 0.00         |
| 47.00        | 1.20             | 0.10            | 0.00         | 100.00       | 1.20             | 0.10            | 0.00         |
| 48.00        | 1.20             | 0.10            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.10            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.10            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.10            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.10            | 0.00         |              |                  |                 |              |



**Summary for Subcatchment S5a: Subcatchment 5a**

Runoff = 1.56 cfs @ 12.12 hrs, Volume= 0.126 af, Depth= 0.27"  
 Routed to Reach R7 : Proposed RRv Swale

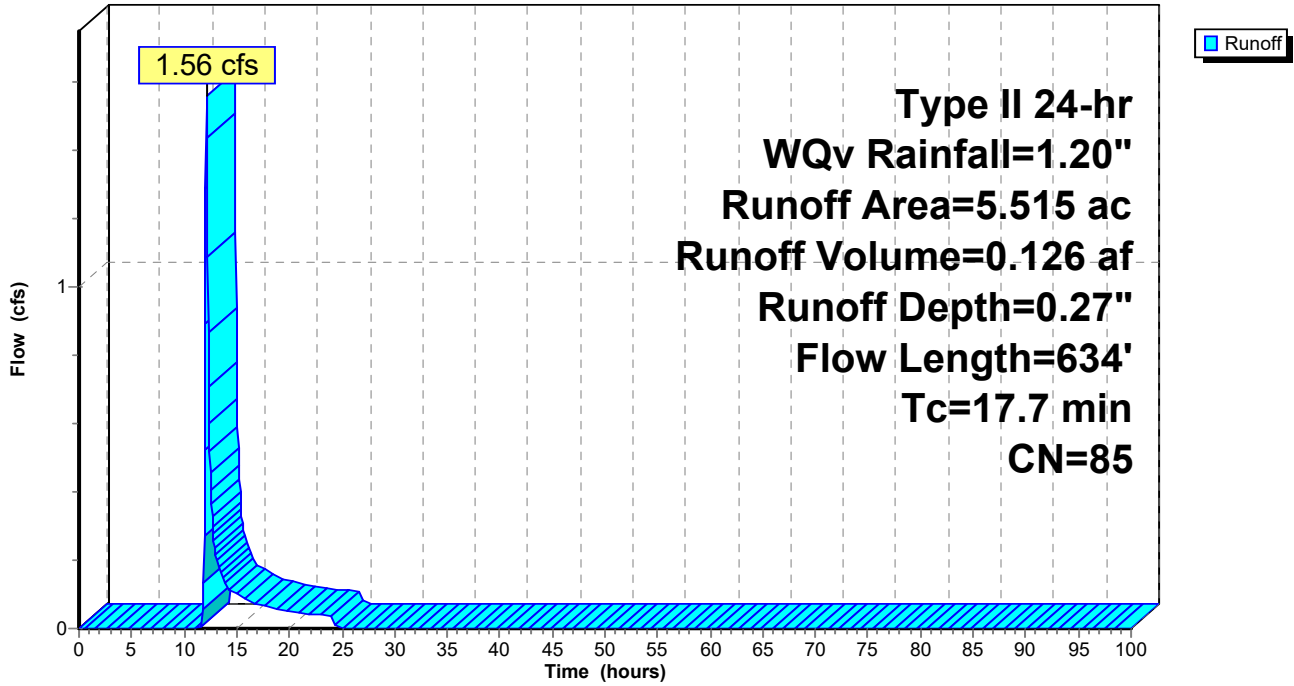
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.428     | 78 | Meadow, non-grazed, HSG D |
| 0.591     | 98 | Paved parking, HSG D      |
| 0.921     | 98 | Roofs, HSG A              |
| 0.035     | 98 | Roofs, HSG D              |
| 1.479     | 98 | Paved parking, HSG A      |
| 1.207     | 94 | Fallow, bare soil, HSG D  |
| 0.830     | 30 | Meadow, non-grazed, HSG A |
| 0.024     | 30 | Woods, Good, HSG A        |
| 5.515     | 85 | Weighted Average          |
| 2.489     |    | 45.13% Pervious Area      |
| 3.026     |    | 54.87% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 4.2      | 22            | 0.0080        | 0.09              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                           |
| 0.6      | 24            | 0.0080        | 0.64              |                | <b>Sheet Flow, Hydro Flow</b><br>Smooth surfaces n= 0.011 P2= 2.59"                 |
| 3.9      | 53            | 0.0080        | 0.22              |                | <b>Sheet Flow, Hydro Flow</b><br>Fallow n= 0.050 P2= 2.59"                          |
| 0.4      | 22            | 0.0080        | 0.89              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 7.9      | 473           | 0.0100        | 1.00              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Nearly Bare & Untilled Kv= 10.0 fps |
| 0.2      | 21            | 0.0100        | 2.03              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Paved Kv= 20.3 fps                  |
| 0.5      | 19            | 0.0070        | 0.59              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps     |
| 17.7     | 634           | Total         |                   |                |   |

### Subcatchment S5a: Subcatchment 5a

Hydrograph



**Hydrograph for Subcatchment S5a: Subcatchment 5a**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | 0.00            | 0.00         | 53.00        | 1.20             | 0.27            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.27            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.27            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.27            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.27            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.27            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.27            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.27            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.27            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.27            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.27            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.27            | 0.00         |
| 12.00        | 0.80             | 0.09            | <b>0.89</b>  | 65.00        | 1.20             | 0.27            | 0.00         |
| 13.00        | 0.93             | 0.14            | <b>0.21</b>  | 66.00        | 1.20             | 0.27            | 0.00         |
| 14.00        | 0.98             | 0.17            | 0.13         | 67.00        | 1.20             | 0.27            | 0.00         |
| 15.00        | 1.02             | 0.18            | 0.10         | 68.00        | 1.20             | 0.27            | 0.00         |
| 16.00        | 1.06             | 0.20            | 0.08         | 69.00        | 1.20             | 0.27            | 0.00         |
| 17.00        | 1.08             | 0.21            | 0.07         | 70.00        | 1.20             | 0.27            | 0.00         |
| 18.00        | 1.11             | 0.22            | 0.06         | 71.00        | 1.20             | 0.27            | 0.00         |
| 19.00        | 1.13             | 0.24            | 0.06         | 72.00        | 1.20             | 0.27            | 0.00         |
| 20.00        | 1.14             | 0.24            | 0.05         | 73.00        | 1.20             | 0.27            | 0.00         |
| 21.00        | 1.16             | 0.25            | 0.04         | 74.00        | 1.20             | 0.27            | 0.00         |
| 22.00        | 1.17             | 0.26            | 0.04         | 75.00        | 1.20             | 0.27            | 0.00         |
| 23.00        | 1.19             | 0.27            | 0.04         | 76.00        | 1.20             | 0.27            | 0.00         |
| 24.00        | <b>1.20</b>      | <b>0.27</b>     | 0.04         | 77.00        | 1.20             | 0.27            | 0.00         |
| 25.00        | 1.20             | 0.27            | 0.00         | 78.00        | 1.20             | 0.27            | 0.00         |
| 26.00        | 1.20             | 0.27            | 0.00         | 79.00        | 1.20             | 0.27            | 0.00         |
| 27.00        | 1.20             | 0.27            | 0.00         | 80.00        | 1.20             | 0.27            | 0.00         |
| 28.00        | 1.20             | 0.27            | 0.00         | 81.00        | 1.20             | 0.27            | 0.00         |
| 29.00        | 1.20             | 0.27            | 0.00         | 82.00        | 1.20             | 0.27            | 0.00         |
| 30.00        | 1.20             | 0.27            | 0.00         | 83.00        | 1.20             | 0.27            | 0.00         |
| 31.00        | 1.20             | 0.27            | 0.00         | 84.00        | 1.20             | 0.27            | 0.00         |
| 32.00        | 1.20             | 0.27            | 0.00         | 85.00        | 1.20             | 0.27            | 0.00         |
| 33.00        | 1.20             | 0.27            | 0.00         | 86.00        | 1.20             | 0.27            | 0.00         |
| 34.00        | 1.20             | 0.27            | 0.00         | 87.00        | 1.20             | 0.27            | 0.00         |
| 35.00        | 1.20             | 0.27            | 0.00         | 88.00        | 1.20             | 0.27            | 0.00         |
| 36.00        | 1.20             | 0.27            | 0.00         | 89.00        | 1.20             | 0.27            | 0.00         |
| 37.00        | 1.20             | 0.27            | 0.00         | 90.00        | 1.20             | 0.27            | 0.00         |
| 38.00        | 1.20             | 0.27            | 0.00         | 91.00        | 1.20             | 0.27            | 0.00         |
| 39.00        | 1.20             | 0.27            | 0.00         | 92.00        | 1.20             | 0.27            | 0.00         |
| 40.00        | 1.20             | 0.27            | 0.00         | 93.00        | 1.20             | 0.27            | 0.00         |
| 41.00        | 1.20             | 0.27            | 0.00         | 94.00        | 1.20             | 0.27            | 0.00         |
| 42.00        | 1.20             | 0.27            | 0.00         | 95.00        | 1.20             | 0.27            | 0.00         |
| 43.00        | 1.20             | 0.27            | 0.00         | 96.00        | 1.20             | 0.27            | 0.00         |
| 44.00        | 1.20             | 0.27            | 0.00         | 97.00        | 1.20             | 0.27            | 0.00         |
| 45.00        | 1.20             | 0.27            | 0.00         | 98.00        | 1.20             | 0.27            | 0.00         |
| 46.00        | 1.20             | 0.27            | 0.00         | 99.00        | 1.20             | 0.27            | 0.00         |
| 47.00        | 1.20             | 0.27            | 0.00         | 100.00       | 1.20             | 0.27            | 0.00         |
| 48.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.27            | 0.00         |              |                  |                 |              |

**Summary for Subcatchment S5b: Subcatchment 5b**

[45] Hint: Runoff=Zero

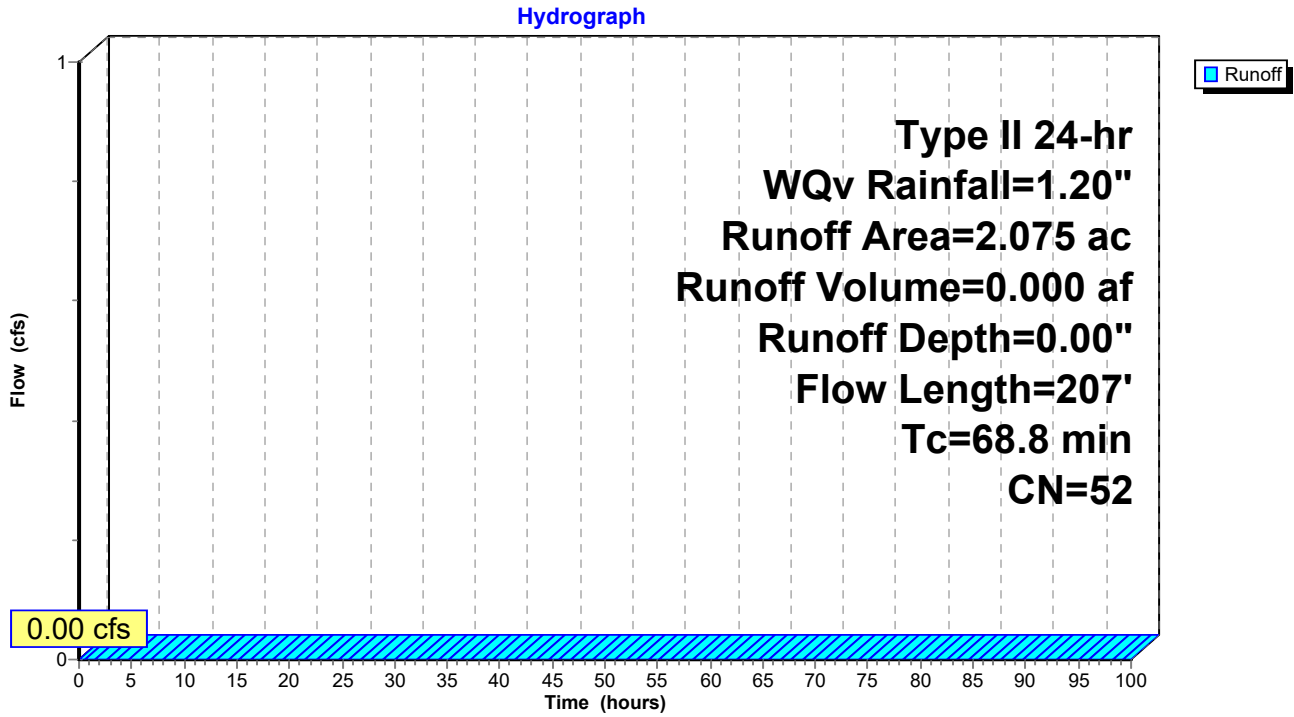
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"  
 Routed to Reach R8 : Proposed RRv Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 0.448     | 30 | Woods, Good, HSG A        |
| 0.120     | 98 | Roofs, HSG A              |
| 0.566     | 98 | Paved parking, HSG A      |
| 0.941     | 30 | Meadow, non-grazed, HSG A |
| 2.075     | 52 | Weighted Average          |
| 1.389     |    | 66.94% Pervious Area      |
| 0.686     |    | 33.06% Impervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 22.3     | 46            | 0.0200        | 0.03              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 44.2     | 54            | 0.0050        | 0.02              |                | <b>Sheet Flow, Hydro Flow</b><br>Woods: Dense underbrush n= 0.800 P2= 2.59"     |
| 1.0      | 21            | 0.0050        | 0.35              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Woodland Kv= 5.0 fps            |
| 0.7      | 33            | 0.0130        | 0.80              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.6      | 53            | 0.0385        | 1.37              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 68.8     | 207           | Total         |                   |                |   |

Subcatchment S5b: Subcatchment 5b



**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

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**Hydrograph for Subcatchment S5b: Subcatchment 5b**

| Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) | Time<br>(hours) | Precip.<br>(inches) | Excess<br>(inches) | Runoff<br>(cfs) |
|-----------------|---------------------|--------------------|-----------------|-----------------|---------------------|--------------------|-----------------|
| 0.00            | 0.00                | <b>0.00</b>        | <b>0.00</b>     | 53.00           | 1.20                | 0.00               | 0.00            |
| 1.00            | 0.01                | 0.00               | 0.00            | 54.00           | 1.20                | 0.00               | 0.00            |
| 2.00            | 0.03                | 0.00               | 0.00            | 55.00           | 1.20                | 0.00               | 0.00            |
| 3.00            | 0.04                | 0.00               | 0.00            | 56.00           | 1.20                | 0.00               | 0.00            |
| 4.00            | 0.06                | 0.00               | 0.00            | 57.00           | 1.20                | 0.00               | 0.00            |
| 5.00            | 0.08                | 0.00               | 0.00            | 58.00           | 1.20                | 0.00               | 0.00            |
| 6.00            | 0.10                | 0.00               | 0.00            | 59.00           | 1.20                | 0.00               | 0.00            |
| 7.00            | 0.12                | 0.00               | 0.00            | 60.00           | 1.20                | 0.00               | 0.00            |
| 8.00            | 0.14                | 0.00               | 0.00            | 61.00           | 1.20                | 0.00               | 0.00            |
| 9.00            | 0.18                | 0.00               | 0.00            | 62.00           | 1.20                | 0.00               | 0.00            |
| 10.00           | 0.22                | 0.00               | 0.00            | 63.00           | 1.20                | 0.00               | 0.00            |
| 11.00           | 0.28                | 0.00               | 0.00            | 64.00           | 1.20                | 0.00               | 0.00            |
| 12.00           | 0.80                | 0.00               | 0.00            | 65.00           | 1.20                | 0.00               | 0.00            |
| 13.00           | 0.93                | 0.00               | 0.00            | 66.00           | 1.20                | 0.00               | 0.00            |
| 14.00           | 0.98                | 0.00               | 0.00            | 67.00           | 1.20                | 0.00               | 0.00            |
| 15.00           | 1.02                | 0.00               | 0.00            | 68.00           | 1.20                | 0.00               | 0.00            |
| 16.00           | 1.06                | 0.00               | 0.00            | 69.00           | 1.20                | 0.00               | 0.00            |
| 17.00           | 1.08                | 0.00               | 0.00            | 70.00           | 1.20                | 0.00               | 0.00            |
| 18.00           | 1.11                | 0.00               | 0.00            | 71.00           | 1.20                | 0.00               | 0.00            |
| 19.00           | 1.13                | 0.00               | 0.00            | 72.00           | 1.20                | 0.00               | 0.00            |
| 20.00           | 1.14                | 0.00               | 0.00            | 73.00           | 1.20                | 0.00               | 0.00            |
| 21.00           | 1.16                | 0.00               | 0.00            | 74.00           | 1.20                | 0.00               | 0.00            |
| 22.00           | 1.17                | 0.00               | 0.00            | 75.00           | 1.20                | 0.00               | 0.00            |
| 23.00           | 1.19                | 0.00               | 0.00            | 76.00           | 1.20                | 0.00               | 0.00            |
| 24.00           | <b>1.20</b>         | 0.00               | 0.00            | 77.00           | 1.20                | 0.00               | 0.00            |
| 25.00           | 1.20                | 0.00               | 0.00            | 78.00           | 1.20                | 0.00               | 0.00            |
| 26.00           | 1.20                | 0.00               | 0.00            | 79.00           | 1.20                | 0.00               | 0.00            |
| 27.00           | 1.20                | 0.00               | 0.00            | 80.00           | 1.20                | 0.00               | 0.00            |
| 28.00           | 1.20                | 0.00               | 0.00            | 81.00           | 1.20                | 0.00               | 0.00            |
| 29.00           | 1.20                | 0.00               | 0.00            | 82.00           | 1.20                | 0.00               | 0.00            |
| 30.00           | 1.20                | 0.00               | 0.00            | 83.00           | 1.20                | 0.00               | 0.00            |
| 31.00           | 1.20                | 0.00               | 0.00            | 84.00           | 1.20                | 0.00               | 0.00            |
| 32.00           | 1.20                | 0.00               | 0.00            | 85.00           | 1.20                | 0.00               | 0.00            |
| 33.00           | 1.20                | 0.00               | 0.00            | 86.00           | 1.20                | 0.00               | 0.00            |
| 34.00           | 1.20                | 0.00               | 0.00            | 87.00           | 1.20                | 0.00               | 0.00            |
| 35.00           | 1.20                | 0.00               | 0.00            | 88.00           | 1.20                | 0.00               | 0.00            |
| 36.00           | 1.20                | 0.00               | 0.00            | 89.00           | 1.20                | 0.00               | 0.00            |
| 37.00           | 1.20                | 0.00               | 0.00            | 90.00           | 1.20                | 0.00               | 0.00            |
| 38.00           | 1.20                | 0.00               | 0.00            | 91.00           | 1.20                | 0.00               | 0.00            |
| 39.00           | 1.20                | 0.00               | 0.00            | 92.00           | 1.20                | 0.00               | 0.00            |
| 40.00           | 1.20                | 0.00               | 0.00            | 93.00           | 1.20                | 0.00               | 0.00            |
| 41.00           | 1.20                | 0.00               | 0.00            | 94.00           | 1.20                | 0.00               | 0.00            |
| 42.00           | 1.20                | 0.00               | 0.00            | 95.00           | 1.20                | 0.00               | 0.00            |
| 43.00           | 1.20                | 0.00               | 0.00            | 96.00           | 1.20                | 0.00               | 0.00            |
| 44.00           | 1.20                | 0.00               | 0.00            | 97.00           | 1.20                | 0.00               | 0.00            |
| 45.00           | 1.20                | 0.00               | 0.00            | 98.00           | 1.20                | 0.00               | 0.00            |
| 46.00           | 1.20                | 0.00               | 0.00            | 99.00           | 1.20                | 0.00               | 0.00            |
| 47.00           | 1.20                | 0.00               | 0.00            | 100.00          | 1.20                | 0.00               | 0.00            |
| 48.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 49.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 50.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 51.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |
| 52.00           | 1.20                | 0.00               | 0.00            |                 |                     |                    |                 |

**Summary for Subcatchment S7: Subcatchment 7**

[45] Hint: Runoff=Zero

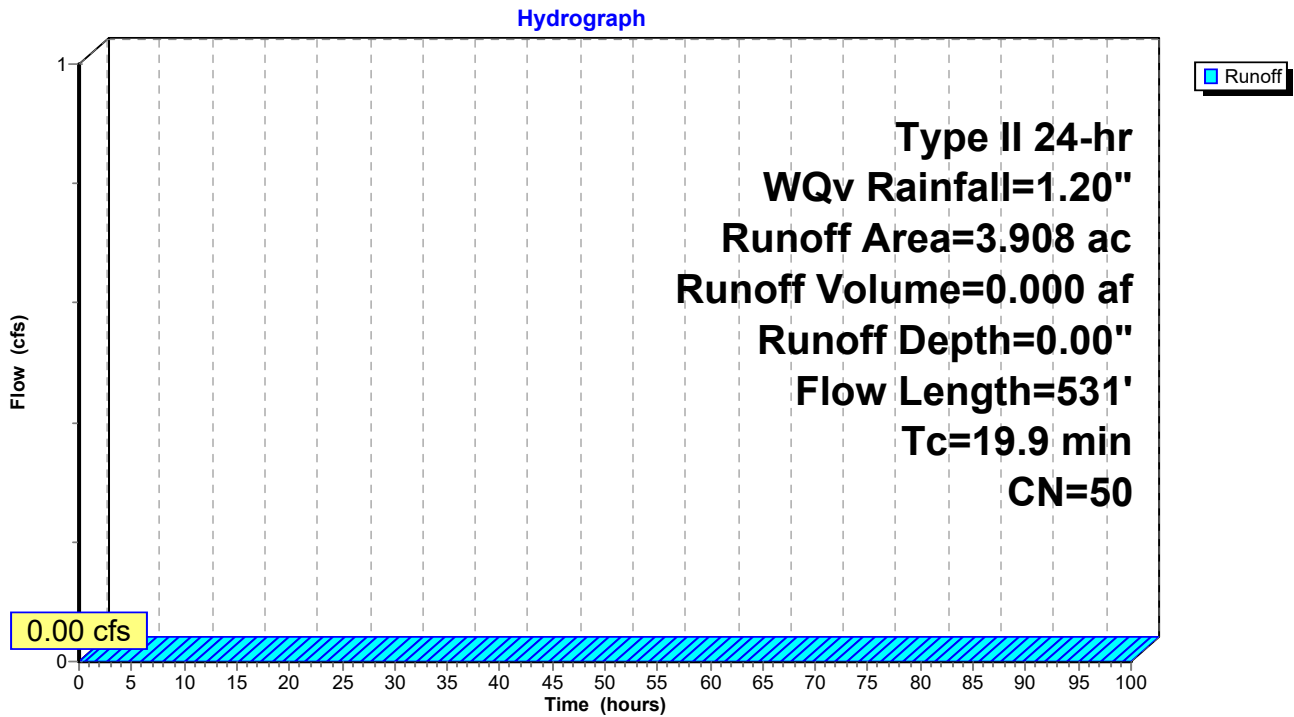
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"  
 Routed to Link AP6 : Analysis Point 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs  
 Type II 24-hr WQv Rainfall=1.20"

| Area (ac) | CN | Description               |
|-----------|----|---------------------------|
| 2.301     | 30 | Meadow, non-grazed, HSG A |
| 1.607     | 78 | Meadow, non-grazed, HSG D |
| 3.908     | 50 | Weighted Average          |
| 3.908     |    | 100.00% Pervious Area     |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 1.8      | 12            | 0.0195        | 0.11              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 8.6      | 88            | 0.0209        | 0.17              |                | <b>Sheet Flow, Hydro Flow</b><br>Range n= 0.130 P2= 2.59"                       |
| 0.9      | 56            | 0.0209        | 1.01              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 3.2      | 150           | 0.0126        | 0.79              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 0.8      | 50            | 0.0221        | 1.04              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.4      | 91            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 2.2      | 84            | 0.0084        | 0.64              |                | <b>Shallow Concentrated Flow, Hydro Flow</b><br>Short Grass Pasture Kv= 7.0 fps |
| 19.9     | 531           | Total         |                   |                |   |

### Subcatchment S7: Subcatchment 7





**Hydrograph for Subcatchment S7: Subcatchment 7**

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) | Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|--------------|------------------|-----------------|--------------|--------------|------------------|-----------------|--------------|
| 0.00         | 0.00             | <b>0.00</b>     | <b>0.00</b>  | 53.00        | 1.20             | 0.00            | 0.00         |
| 1.00         | 0.01             | 0.00            | 0.00         | 54.00        | 1.20             | 0.00            | 0.00         |
| 2.00         | 0.03             | 0.00            | 0.00         | 55.00        | 1.20             | 0.00            | 0.00         |
| 3.00         | 0.04             | 0.00            | 0.00         | 56.00        | 1.20             | 0.00            | 0.00         |
| 4.00         | 0.06             | 0.00            | 0.00         | 57.00        | 1.20             | 0.00            | 0.00         |
| 5.00         | 0.08             | 0.00            | 0.00         | 58.00        | 1.20             | 0.00            | 0.00         |
| 6.00         | 0.10             | 0.00            | 0.00         | 59.00        | 1.20             | 0.00            | 0.00         |
| 7.00         | 0.12             | 0.00            | 0.00         | 60.00        | 1.20             | 0.00            | 0.00         |
| 8.00         | 0.14             | 0.00            | 0.00         | 61.00        | 1.20             | 0.00            | 0.00         |
| 9.00         | 0.18             | 0.00            | 0.00         | 62.00        | 1.20             | 0.00            | 0.00         |
| 10.00        | 0.22             | 0.00            | 0.00         | 63.00        | 1.20             | 0.00            | 0.00         |
| 11.00        | 0.28             | 0.00            | 0.00         | 64.00        | 1.20             | 0.00            | 0.00         |
| 12.00        | 0.80             | 0.00            | 0.00         | 65.00        | 1.20             | 0.00            | 0.00         |
| 13.00        | 0.93             | 0.00            | 0.00         | 66.00        | 1.20             | 0.00            | 0.00         |
| 14.00        | 0.98             | 0.00            | 0.00         | 67.00        | 1.20             | 0.00            | 0.00         |
| 15.00        | 1.02             | 0.00            | 0.00         | 68.00        | 1.20             | 0.00            | 0.00         |
| 16.00        | 1.06             | 0.00            | 0.00         | 69.00        | 1.20             | 0.00            | 0.00         |
| 17.00        | 1.08             | 0.00            | 0.00         | 70.00        | 1.20             | 0.00            | 0.00         |
| 18.00        | 1.11             | 0.00            | 0.00         | 71.00        | 1.20             | 0.00            | 0.00         |
| 19.00        | 1.13             | 0.00            | 0.00         | 72.00        | 1.20             | 0.00            | 0.00         |
| 20.00        | 1.14             | 0.00            | 0.00         | 73.00        | 1.20             | 0.00            | 0.00         |
| 21.00        | 1.16             | 0.00            | 0.00         | 74.00        | 1.20             | 0.00            | 0.00         |
| 22.00        | 1.17             | 0.00            | 0.00         | 75.00        | 1.20             | 0.00            | 0.00         |
| 23.00        | 1.19             | 0.00            | 0.00         | 76.00        | 1.20             | 0.00            | 0.00         |
| 24.00        | <b>1.20</b>      | 0.00            | 0.00         | 77.00        | 1.20             | 0.00            | 0.00         |
| 25.00        | 1.20             | 0.00            | 0.00         | 78.00        | 1.20             | 0.00            | 0.00         |
| 26.00        | 1.20             | 0.00            | 0.00         | 79.00        | 1.20             | 0.00            | 0.00         |
| 27.00        | 1.20             | 0.00            | 0.00         | 80.00        | 1.20             | 0.00            | 0.00         |
| 28.00        | 1.20             | 0.00            | 0.00         | 81.00        | 1.20             | 0.00            | 0.00         |
| 29.00        | 1.20             | 0.00            | 0.00         | 82.00        | 1.20             | 0.00            | 0.00         |
| 30.00        | 1.20             | 0.00            | 0.00         | 83.00        | 1.20             | 0.00            | 0.00         |
| 31.00        | 1.20             | 0.00            | 0.00         | 84.00        | 1.20             | 0.00            | 0.00         |
| 32.00        | 1.20             | 0.00            | 0.00         | 85.00        | 1.20             | 0.00            | 0.00         |
| 33.00        | 1.20             | 0.00            | 0.00         | 86.00        | 1.20             | 0.00            | 0.00         |
| 34.00        | 1.20             | 0.00            | 0.00         | 87.00        | 1.20             | 0.00            | 0.00         |
| 35.00        | 1.20             | 0.00            | 0.00         | 88.00        | 1.20             | 0.00            | 0.00         |
| 36.00        | 1.20             | 0.00            | 0.00         | 89.00        | 1.20             | 0.00            | 0.00         |
| 37.00        | 1.20             | 0.00            | 0.00         | 90.00        | 1.20             | 0.00            | 0.00         |
| 38.00        | 1.20             | 0.00            | 0.00         | 91.00        | 1.20             | 0.00            | 0.00         |
| 39.00        | 1.20             | 0.00            | 0.00         | 92.00        | 1.20             | 0.00            | 0.00         |
| 40.00        | 1.20             | 0.00            | 0.00         | 93.00        | 1.20             | 0.00            | 0.00         |
| 41.00        | 1.20             | 0.00            | 0.00         | 94.00        | 1.20             | 0.00            | 0.00         |
| 42.00        | 1.20             | 0.00            | 0.00         | 95.00        | 1.20             | 0.00            | 0.00         |
| 43.00        | 1.20             | 0.00            | 0.00         | 96.00        | 1.20             | 0.00            | 0.00         |
| 44.00        | 1.20             | 0.00            | 0.00         | 97.00        | 1.20             | 0.00            | 0.00         |
| 45.00        | 1.20             | 0.00            | 0.00         | 98.00        | 1.20             | 0.00            | 0.00         |
| 46.00        | 1.20             | 0.00            | 0.00         | 99.00        | 1.20             | 0.00            | 0.00         |
| 47.00        | 1.20             | 0.00            | 0.00         | 100.00       | 1.20             | 0.00            | 0.00         |
| 48.00        | 1.20             | 0.00            | 0.00         |              |                  |                 |              |
| 49.00        | 1.20             | 0.00            | 0.00         |              |                  |                 |              |
| 50.00        | 1.20             | 0.00            | 0.00         |              |                  |                 |              |
| 51.00        | 1.20             | 0.00            | 0.00         |              |                  |                 |              |
| 52.00        | 1.20             | 0.00            | 0.00         |              |                  |                 |              |

### Summary for Reach R10: 10" Culvert Pond Discharge

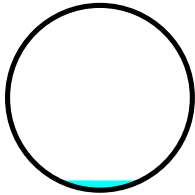
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 0.27" for WQv event  
Inflow = 0.01 cfs @ 19.23 hrs, Volume= 0.029 af  
Outflow = 0.01 cfs @ 19.24 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.2 min  
Routed to Link AP5 : Analysis Point 5

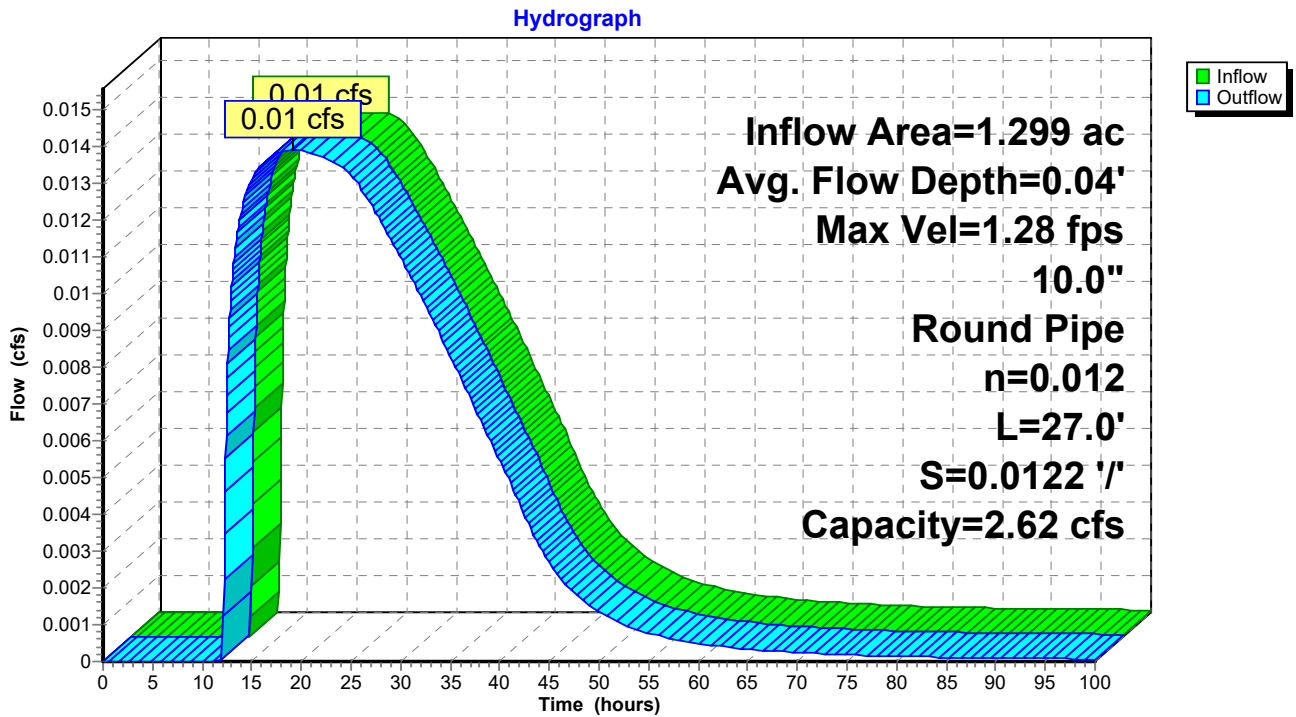
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 1.28 fps, Min. Travel Time= 0.4 min  
Avg. Velocity = 0.72 fps, Avg. Travel Time= 0.6 min

Peak Storage= 0 cf @ 19.24 hrs  
Average Depth at Peak Storage= 0.04' , Surface Width= 0.37'  
Bank-Full Depth= 0.83' Flow Area= 0.5 sf, Capacity= 2.62 cfs

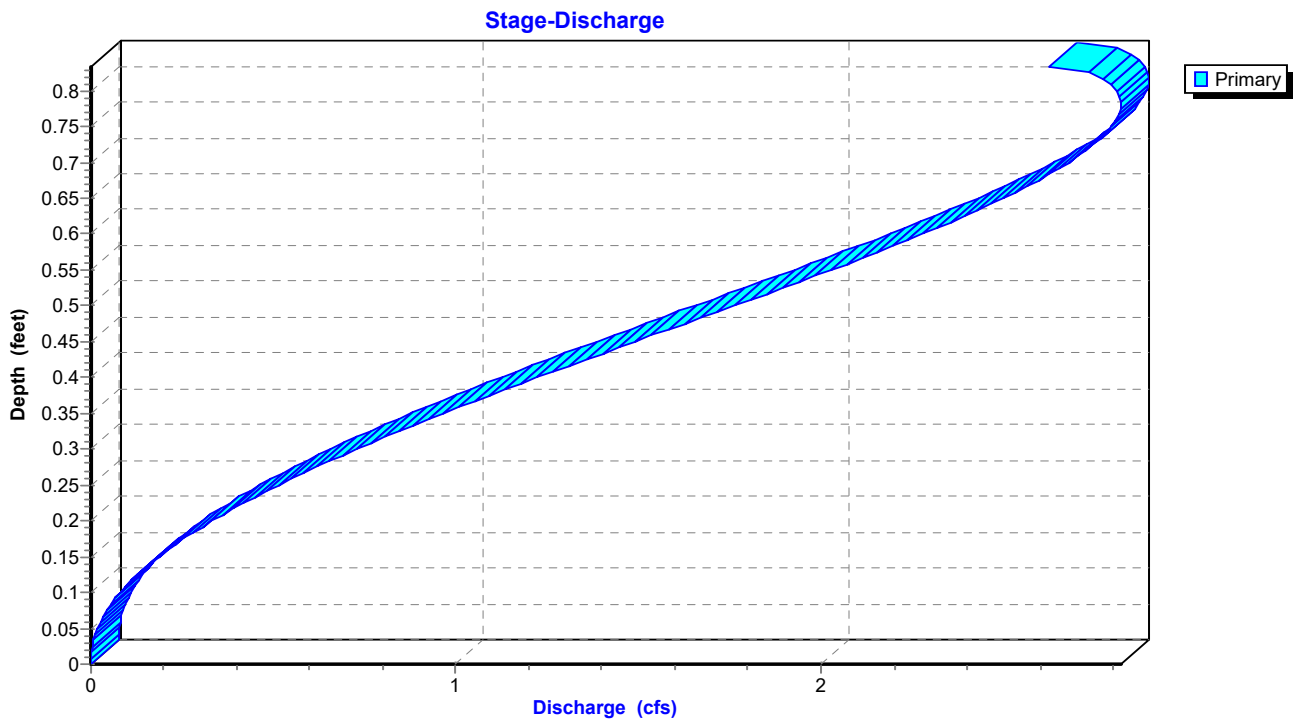
10.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 27.0' Slope= 0.0122 '/'  
Inlet Invert= 329.33', Outlet Invert= 329.00'



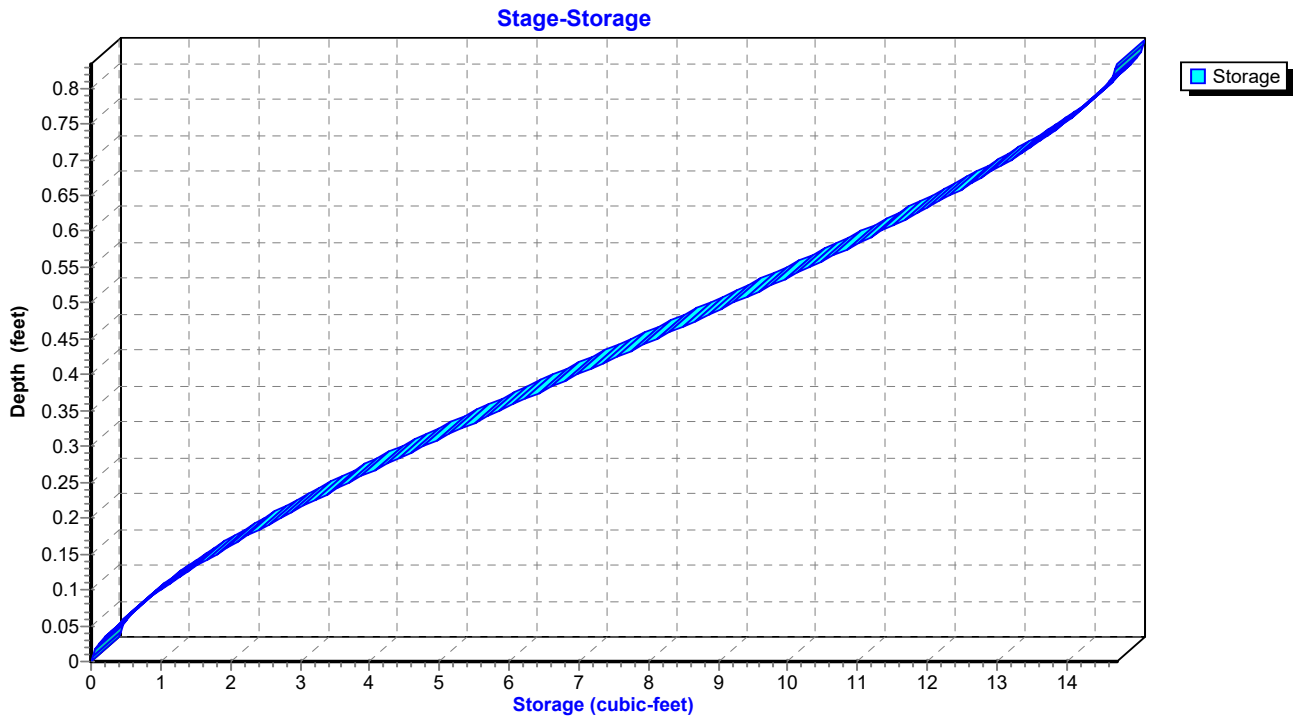
**Reach R10: 10" Culvert Pond Discharge**



**Reach R10: 10" Culvert Pond Discharge**



### Reach R10: 10" Culvert Pond Discharge



**Hydrograph for Reach R10: 10" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 329.33           | 0.00          |
| 2.50         | 0.00         | 0                    | 329.33           | 0.00          |
| 5.00         | 0.00         | 0                    | 329.33           | 0.00          |
| 7.50         | 0.00         | 0                    | 329.33           | 0.00          |
| 10.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 12.50        | 0.01         | 0                    | 329.36           | 0.01          |
| 15.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 17.50        | <b>0.01</b>  | <b>0</b>             | <b>329.37</b>    | <b>0.01</b>   |
| 20.00        | <b>0.01</b>  | <b>0</b>             | <b>329.37</b>    | <b>0.01</b>   |
| 22.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 25.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 27.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 30.00        | 0.01         | 0                    | 329.37           | 0.01          |
| 32.50        | 0.01         | 0                    | 329.37           | 0.01          |
| 35.00        | 0.01         | 0                    | 329.36           | 0.01          |
| 37.50        | 0.01         | 0                    | 329.36           | 0.01          |
| 40.00        | 0.01         | 0                    | 329.36           | 0.01          |
| 42.50        | 0.00         | 0                    | 329.35           | 0.00          |
| 45.00        | 0.00         | 0                    | 329.35           | 0.00          |
| 47.50        | 0.00         | 0                    | 329.35           | 0.00          |
| 50.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 52.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 55.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 57.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 60.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 62.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 65.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 67.50        | 0.00         | 0                    | 329.34           | 0.00          |
| 70.00        | 0.00         | 0                    | 329.34           | 0.00          |
| 72.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 75.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 77.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 80.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 82.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 85.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 87.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 90.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 92.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 95.00        | 0.00         | 0                    | 329.33           | 0.00          |
| 97.50        | 0.00         | 0                    | 329.33           | 0.00          |
| 100.00       | 0.00         | 0                    | 329.33           | 0.00          |

**Stage-Discharge for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 329.33              | 0.00                 | 0.00               | 329.86              | 5.26                 | 1.92               |
| 329.34              | 0.48                 | 0.00               | 329.87              | 5.28                 | 1.98               |
| 329.35              | 0.76                 | 0.00               | 329.88              | 5.31                 | 2.03               |
| 329.36              | 1.00                 | 0.01               | 329.89              | 5.34                 | 2.08               |
| 329.37              | 1.20                 | 0.01               | 329.90              | 5.36                 | 2.13               |
| 329.38              | 1.39                 | 0.02               | 329.91              | 5.38                 | 2.18               |
| 329.39              | 1.56                 | 0.03               | 329.92              | 5.40                 | 2.23               |
| 329.40              | 1.73                 | 0.04               | 329.93              | 5.42                 | 2.28               |
| 329.41              | 1.88                 | 0.05               | 329.94              | 5.43                 | 2.32               |
| 329.42              | 2.03                 | 0.06               | 329.95              | 5.45                 | 2.37               |
| 329.43              | 2.16                 | 0.08               | 329.96              | 5.46                 | 2.41               |
| 329.44              | 2.30                 | 0.10               | 329.97              | 5.47                 | 2.46               |
| 329.45              | 2.42                 | 0.12               | 329.98              | 5.48                 | 2.50               |
| 329.46              | 2.55                 | 0.14               | 329.99              | 5.48                 | 2.54               |
| 329.47              | 2.66                 | 0.16               | 330.00              | 5.48                 | 2.58               |
| 329.48              | 2.78                 | 0.19               | 330.01              | <b>5.48</b>          | 2.61               |
| 329.49              | 2.89                 | 0.21               | 330.02              | 5.48                 | 2.65               |
| 329.50              | 2.99                 | 0.24               | 330.03              | 5.48                 | 2.68               |
| 329.51              | 3.10                 | 0.27               | 330.04              | 5.47                 | 2.71               |
| 329.52              | 3.20                 | 0.30               | 330.05              | 5.46                 | 2.74               |
| 329.53              | 3.29                 | 0.33               | 330.06              | 5.45                 | 2.76               |
| 329.54              | 3.39                 | 0.37               | 330.07              | 5.43                 | 2.78               |
| 329.55              | 3.48                 | 0.40               | 330.08              | 5.41                 | 2.80               |
| 329.56              | 3.57                 | 0.44               | 330.09              | 5.38                 | 2.81               |
| 329.57              | 3.65                 | 0.47               | 330.10              | 5.35                 | 2.82               |
| 329.58              | 3.73                 | 0.51               | 330.11              | 5.32                 | <b>2.82</b>        |
| 329.59              | 3.81                 | 0.55               | 330.12              | 5.28                 | 2.82               |
| 329.60              | 3.89                 | 0.60               | 330.13              | 5.22                 | 2.81               |
| 329.61              | 3.97                 | 0.64               | 330.14              | 5.16                 | 2.79               |
| 329.62              | 4.04                 | 0.68               | 330.15              | 5.07                 | 2.76               |
| 329.63              | 4.12                 | 0.73               | 330.16              | 4.90                 | 2.67               |
| 329.64              | 4.19                 | 0.77               |                     |                      |                    |
| 329.65              | 4.25                 | 0.82               |                     |                      |                    |
| 329.66              | 4.32                 | 0.87               |                     |                      |                    |
| 329.67              | 4.38                 | 0.92               |                     |                      |                    |
| 329.68              | 4.44                 | 0.97               |                     |                      |                    |
| 329.69              | 4.50                 | 1.02               |                     |                      |                    |
| 329.70              | 4.56                 | 1.07               |                     |                      |                    |
| 329.71              | 4.62                 | 1.12               |                     |                      |                    |
| 329.72              | 4.67                 | 1.17               |                     |                      |                    |
| 329.73              | 4.73                 | 1.22               |                     |                      |                    |
| 329.74              | 4.78                 | 1.28               |                     |                      |                    |
| 329.75              | 4.83                 | 1.33               |                     |                      |                    |
| 329.76              | 4.87                 | 1.38               |                     |                      |                    |
| 329.77              | 4.92                 | 1.44               |                     |                      |                    |
| 329.78              | 4.96                 | 1.49               |                     |                      |                    |
| 329.79              | 5.01                 | 1.55               |                     |                      |                    |
| 329.80              | 5.05                 | 1.60               |                     |                      |                    |
| 329.81              | 5.09                 | 1.65               |                     |                      |                    |
| 329.82              | 5.12                 | 1.71               |                     |                      |                    |
| 329.83              | 5.16                 | 1.76               |                     |                      |                    |
| 329.84              | 5.19                 | 1.82               |                     |                      |                    |
| 329.85              | 5.23                 | 1.87               |                     |                      |                    |

**Stage-Area-Storage for Reach R10: 10" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 329.33              | 0.0                 | 0                       | 329.86              | 0.4                 | 10                      |
| 329.34              | 0.0                 | 0                       | 329.87              | 0.4                 | 10                      |
| 329.35              | 0.0                 | 0                       | 329.88              | 0.4                 | 10                      |
| 329.36              | 0.0                 | 0                       | 329.89              | 0.4                 | 11                      |
| 329.37              | 0.0                 | 0                       | 329.90              | 0.4                 | 11                      |
| 329.38              | 0.0                 | 0                       | 329.91              | 0.4                 | 11                      |
| 329.39              | 0.0                 | 0                       | 329.92              | 0.4                 | 11                      |
| 329.40              | 0.0                 | 1                       | 329.93              | 0.4                 | 11                      |
| 329.41              | 0.0                 | 1                       | 329.94              | 0.4                 | 12                      |
| 329.42              | 0.0                 | 1                       | 329.95              | 0.4                 | 12                      |
| 329.43              | 0.0                 | 1                       | 329.96              | 0.4                 | 12                      |
| 329.44              | 0.0                 | 1                       | 329.97              | 0.4                 | 12                      |
| 329.45              | 0.0                 | 1                       | 329.98              | 0.5                 | 12                      |
| 329.46              | 0.1                 | 1                       | 329.99              | 0.5                 | 13                      |
| 329.47              | 0.1                 | 2                       | 330.00              | 0.5                 | 13                      |
| 329.48              | 0.1                 | 2                       | 330.01              | 0.5                 | 13                      |
| 329.49              | 0.1                 | 2                       | 330.02              | 0.5                 | 13                      |
| 329.50              | 0.1                 | 2                       | 330.03              | 0.5                 | 13                      |
| 329.51              | 0.1                 | 2                       | 330.04              | 0.5                 | 13                      |
| 329.52              | 0.1                 | 3                       | 330.05              | 0.5                 | 14                      |
| 329.53              | 0.1                 | 3                       | 330.06              | 0.5                 | 14                      |
| 329.54              | 0.1                 | 3                       | 330.07              | 0.5                 | 14                      |
| 329.55              | 0.1                 | 3                       | 330.08              | 0.5                 | 14                      |
| 329.56              | 0.1                 | 3                       | 330.09              | 0.5                 | 14                      |
| 329.57              | 0.1                 | 4                       | 330.10              | 0.5                 | 14                      |
| 329.58              | 0.1                 | 4                       | 330.11              | 0.5                 | 14                      |
| 329.59              | 0.1                 | 4                       | 330.12              | 0.5                 | 14                      |
| 329.60              | 0.2                 | 4                       | 330.13              | 0.5                 | 15                      |
| 329.61              | 0.2                 | 4                       | 330.14              | 0.5                 | 15                      |
| 329.62              | 0.2                 | 5                       | 330.15              | 0.5                 | 15                      |
| 329.63              | 0.2                 | 5                       | 330.16              | <b>0.5</b>          | <b>15</b>               |
| 329.64              | 0.2                 | 5                       |                     |                     |                         |
| 329.65              | 0.2                 | 5                       |                     |                     |                         |
| 329.66              | 0.2                 | 5                       |                     |                     |                         |
| 329.67              | 0.2                 | 6                       |                     |                     |                         |
| 329.68              | 0.2                 | 6                       |                     |                     |                         |
| 329.69              | 0.2                 | 6                       |                     |                     |                         |
| 329.70              | 0.2                 | 6                       |                     |                     |                         |
| 329.71              | 0.2                 | 7                       |                     |                     |                         |
| 329.72              | 0.3                 | 7                       |                     |                     |                         |
| 329.73              | 0.3                 | 7                       |                     |                     |                         |
| 329.74              | 0.3                 | 7                       |                     |                     |                         |
| 329.75              | 0.3                 | 7                       |                     |                     |                         |
| 329.76              | 0.3                 | 8                       |                     |                     |                         |
| 329.77              | 0.3                 | 8                       |                     |                     |                         |
| 329.78              | 0.3                 | 8                       |                     |                     |                         |
| 329.79              | 0.3                 | 8                       |                     |                     |                         |
| 329.80              | 0.3                 | 9                       |                     |                     |                         |
| 329.81              | 0.3                 | 9                       |                     |                     |                         |
| 329.82              | 0.3                 | 9                       |                     |                     |                         |
| 329.83              | 0.3                 | 9                       |                     |                     |                         |
| 329.84              | 0.3                 | 9                       |                     |                     |                         |
| 329.85              | 0.4                 | 10                      |                     |                     |                         |

**Summary for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.00" for WQv event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min  
 Routed to Pond 4P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

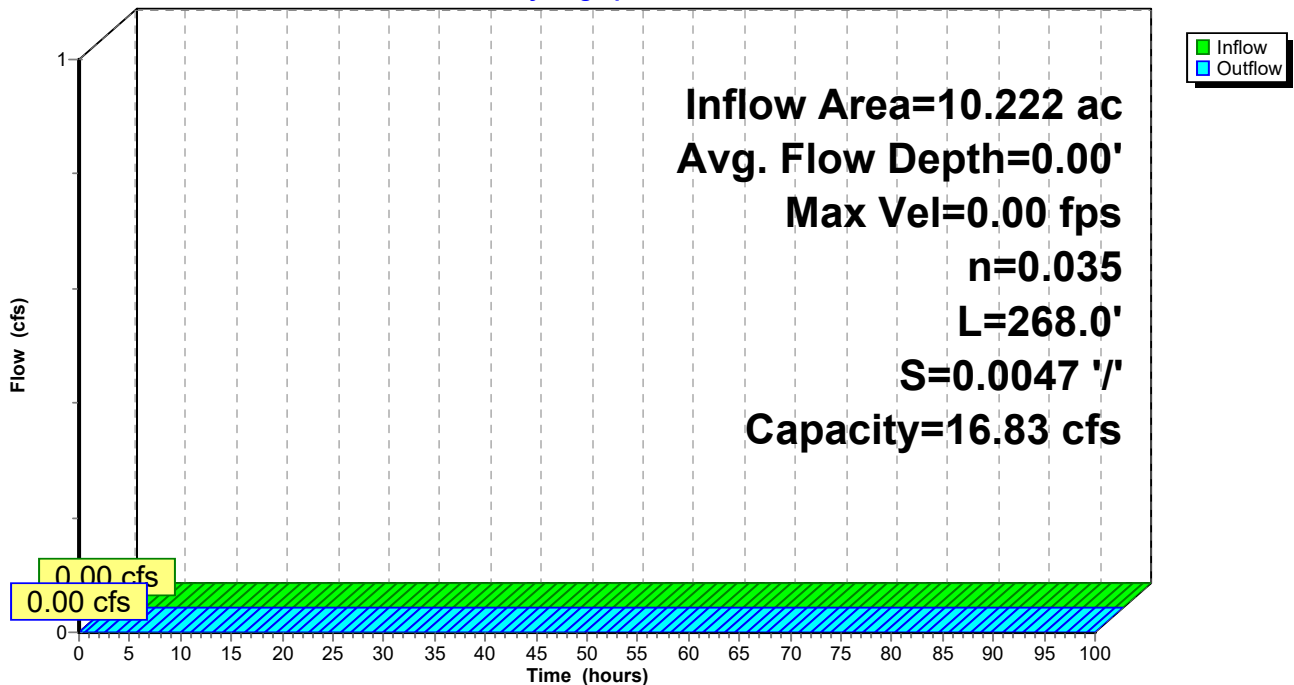
Peak Storage= 0 cf @ 0.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 16.83 cfs

2.00' x 1.25' deep channel, n= 0.035  
 Side Slope Z-value= 3.0 '/' Top Width= 9.50'  
 Length= 268.0' Slope= 0.0047 '/'  
 Inlet Invert= 341.00', Outlet Invert= 339.75'



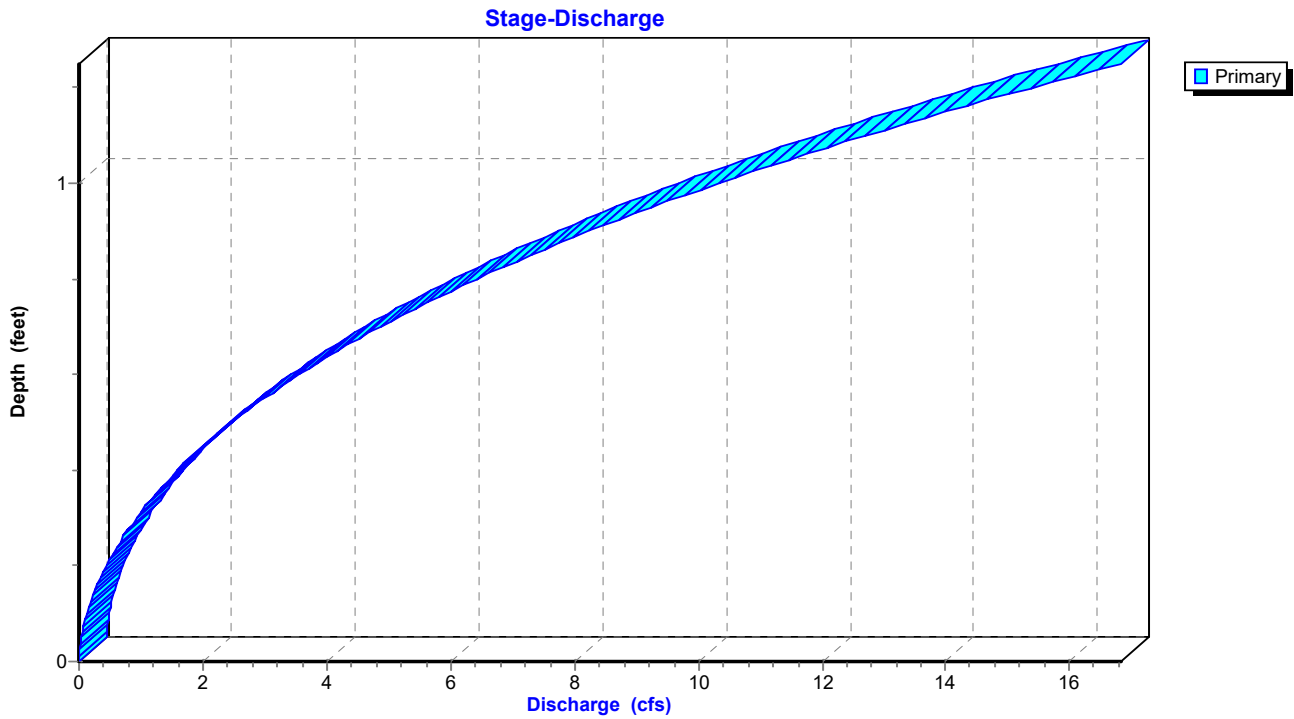
**Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

Hydrograph

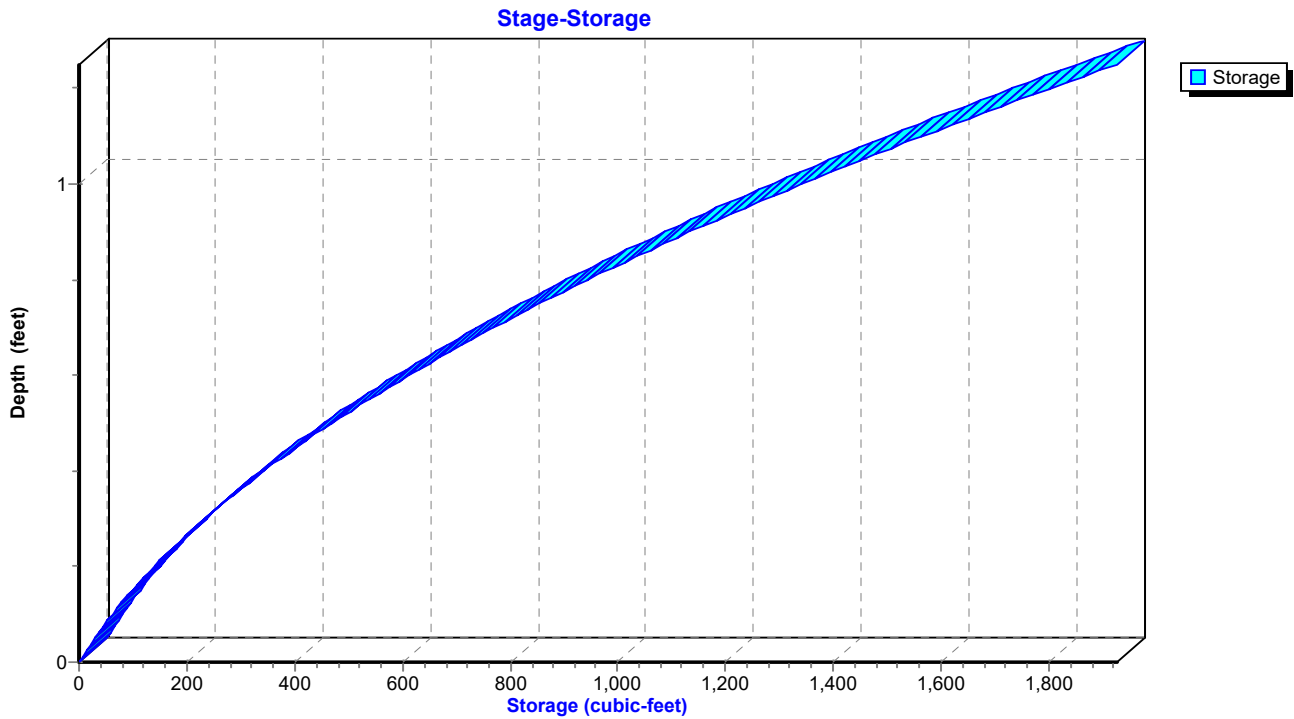




### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



### Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond



**Hydrograph for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Outflow (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 341.00           | 0.00          | 53.00        | 0.00         | 341.00           | 0.00          |
| 1.00         | 0.00         | 341.00           | 0.00          | 54.00        | 0.00         | 341.00           | 0.00          |
| 2.00         | 0.00         | 341.00           | 0.00          | 55.00        | 0.00         | 341.00           | 0.00          |
| 3.00         | 0.00         | 341.00           | 0.00          | 56.00        | 0.00         | 341.00           | 0.00          |
| 4.00         | 0.00         | 341.00           | 0.00          | 57.00        | 0.00         | 341.00           | 0.00          |
| 5.00         | 0.00         | 341.00           | 0.00          | 58.00        | 0.00         | 341.00           | 0.00          |
| 6.00         | 0.00         | 341.00           | 0.00          | 59.00        | 0.00         | 341.00           | 0.00          |
| 7.00         | 0.00         | 341.00           | 0.00          | 60.00        | 0.00         | 341.00           | 0.00          |
| 8.00         | 0.00         | 341.00           | 0.00          | 61.00        | 0.00         | 341.00           | 0.00          |
| 9.00         | 0.00         | 341.00           | 0.00          | 62.00        | 0.00         | 341.00           | 0.00          |
| 10.00        | 0.00         | 341.00           | 0.00          | 63.00        | 0.00         | 341.00           | 0.00          |
| 11.00        | 0.00         | 341.00           | 0.00          | 64.00        | 0.00         | 341.00           | 0.00          |
| 12.00        | 0.00         | 341.00           | 0.00          | 65.00        | 0.00         | 341.00           | 0.00          |
| 13.00        | 0.00         | 341.00           | 0.00          | 66.00        | 0.00         | 341.00           | 0.00          |
| 14.00        | 0.00         | 341.00           | 0.00          | 67.00        | 0.00         | 341.00           | 0.00          |
| 15.00        | 0.00         | 341.00           | 0.00          | 68.00        | 0.00         | 341.00           | 0.00          |
| 16.00        | 0.00         | 341.00           | 0.00          | 69.00        | 0.00         | 341.00           | 0.00          |
| 17.00        | 0.00         | 341.00           | 0.00          | 70.00        | 0.00         | 341.00           | 0.00          |
| 18.00        | 0.00         | 341.00           | 0.00          | 71.00        | 0.00         | 341.00           | 0.00          |
| 19.00        | 0.00         | 341.00           | 0.00          | 72.00        | 0.00         | 341.00           | 0.00          |
| 20.00        | 0.00         | 341.00           | 0.00          | 73.00        | 0.00         | 341.00           | 0.00          |
| 21.00        | 0.00         | 341.00           | 0.00          | 74.00        | 0.00         | 341.00           | 0.00          |
| 22.00        | 0.00         | 341.00           | 0.00          | 75.00        | 0.00         | 341.00           | 0.00          |
| 23.00        | 0.00         | 341.00           | 0.00          | 76.00        | 0.00         | 341.00           | 0.00          |
| 24.00        | 0.00         | 341.00           | 0.00          | 77.00        | 0.00         | 341.00           | 0.00          |
| 25.00        | 0.00         | 341.00           | 0.00          | 78.00        | 0.00         | 341.00           | 0.00          |
| 26.00        | 0.00         | 341.00           | 0.00          | 79.00        | 0.00         | 341.00           | 0.00          |
| 27.00        | 0.00         | 341.00           | 0.00          | 80.00        | 0.00         | 341.00           | 0.00          |
| 28.00        | 0.00         | 341.00           | 0.00          | 81.00        | 0.00         | 341.00           | 0.00          |
| 29.00        | 0.00         | 341.00           | 0.00          | 82.00        | 0.00         | 341.00           | 0.00          |
| 30.00        | 0.00         | 341.00           | 0.00          | 83.00        | 0.00         | 341.00           | 0.00          |
| 31.00        | 0.00         | 341.00           | 0.00          | 84.00        | 0.00         | 341.00           | 0.00          |
| 32.00        | 0.00         | 341.00           | 0.00          | 85.00        | 0.00         | 341.00           | 0.00          |
| 33.00        | 0.00         | 341.00           | 0.00          | 86.00        | 0.00         | 341.00           | 0.00          |
| 34.00        | 0.00         | 341.00           | 0.00          | 87.00        | 0.00         | 341.00           | 0.00          |
| 35.00        | 0.00         | 341.00           | 0.00          | 88.00        | 0.00         | 341.00           | 0.00          |
| 36.00        | 0.00         | 341.00           | 0.00          | 89.00        | 0.00         | 341.00           | 0.00          |
| 37.00        | 0.00         | 341.00           | 0.00          | 90.00        | 0.00         | 341.00           | 0.00          |
| 38.00        | 0.00         | 341.00           | 0.00          | 91.00        | 0.00         | 341.00           | 0.00          |
| 39.00        | 0.00         | 341.00           | 0.00          | 92.00        | 0.00         | 341.00           | 0.00          |
| 40.00        | 0.00         | 341.00           | 0.00          | 93.00        | 0.00         | 341.00           | 0.00          |
| 41.00        | 0.00         | 341.00           | 0.00          | 94.00        | 0.00         | 341.00           | 0.00          |
| 42.00        | 0.00         | 341.00           | 0.00          | 95.00        | 0.00         | 341.00           | 0.00          |
| 43.00        | 0.00         | 341.00           | 0.00          | 96.00        | 0.00         | 341.00           | 0.00          |
| 44.00        | 0.00         | 341.00           | 0.00          | 97.00        | 0.00         | 341.00           | 0.00          |
| 45.00        | 0.00         | 341.00           | 0.00          | 98.00        | 0.00         | 341.00           | 0.00          |
| 46.00        | 0.00         | 341.00           | 0.00          | 99.00        | 0.00         | 341.00           | 0.00          |
| 47.00        | 0.00         | 341.00           | 0.00          | 100.00       | 0.00         | 341.00           | 0.00          |
| 48.00        | 0.00         | 341.00           | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 341.00           | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 341.00           | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 341.00           | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 341.00           | 0.00          |              |              |                  |               |

**1096 Proposed Stormwater Conditions\_Final D Soils GrType II 24-hr WQv Rainfall=1.20"**

Prepared by CLA Site

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**Stage-Discharge for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 341.00              | 0.00                 | 0.00               | 341.53              | 1.46                 | 2.77               | 342.06              | 2.13                 | 11.71              |
| 341.01              | 0.12                 | 0.00               | 341.54              | 1.47                 | 2.87               | 342.07              | 2.14                 | 11.95              |
| 341.02              | 0.21                 | 0.01               | 341.55              | 1.48                 | 2.98               | 342.08              | 2.16                 | 12.20              |
| 341.03              | 0.27                 | 0.02               | 341.56              | 1.50                 | 3.09               | 342.09              | 2.17                 | 12.45              |
| 341.04              | 0.33                 | 0.03               | 341.57              | 1.51                 | 3.20               | 342.10              | 2.18                 | 12.70              |
| 341.05              | 0.37                 | 0.04               | 341.58              | 1.53                 | 3.32               | 342.11              | 2.19                 | 12.95              |
| 341.06              | 0.42                 | 0.06               | 341.59              | 1.54                 | 3.43               | 342.12              | 2.20                 | 13.21              |
| 341.07              | 0.46                 | 0.07               | 341.60              | 1.56                 | 3.55               | 342.13              | 2.21                 | 13.47              |
| 341.08              | 0.50                 | 0.09               | 341.61              | 1.57                 | 3.67               | 342.14              | 2.22                 | 13.73              |
| 341.09              | 0.54                 | 0.11               | 341.62              | 1.59                 | 3.79               | 342.15              | 2.23                 | 14.00              |
| 341.10              | 0.57                 | 0.13               | 341.63              | 1.60                 | 3.92               | 342.16              | 2.24                 | 14.27              |
| 341.11              | 0.60                 | 0.16               | 341.64              | 1.61                 | 4.05               | 342.17              | 2.26                 | 14.54              |
| 341.12              | 0.64                 | 0.18               | 341.65              | 1.63                 | 4.18               | 342.18              | 2.27                 | 14.81              |
| 341.13              | 0.67                 | 0.21               | 341.66              | 1.64                 | 4.31               | 342.19              | 2.28                 | 15.09              |
| 341.14              | 0.70                 | 0.24               | 341.67              | 1.65                 | 4.44               | 342.20              | 2.29                 | 15.37              |
| 341.15              | 0.72                 | 0.27               | 341.68              | 1.67                 | 4.58               | 342.21              | 2.30                 | 15.66              |
| 341.16              | 0.75                 | 0.30               | 341.69              | 1.68                 | 4.72               | 342.22              | 2.31                 | 15.95              |
| 341.17              | 0.78                 | 0.33               | 341.70              | 1.69                 | 4.86               | 342.23              | 2.32                 | 16.24              |
| 341.18              | 0.80                 | 0.37               | 341.71              | 1.71                 | 5.01               | 342.24              | 2.33                 | 16.53              |
| 341.19              | 0.83                 | 0.40               | 341.72              | 1.72                 | 5.15               | 342.25              | <b>2.34</b>          | <b>16.83</b>       |
| 341.20              | 0.85                 | 0.44               | 341.73              | 1.73                 | 5.30               |                     |                      |                    |
| 341.21              | 0.88                 | 0.48               | 341.74              | 1.75                 | 5.45               |                     |                      |                    |
| 341.22              | 0.90                 | 0.53               | 341.75              | 1.76                 | 5.61               |                     |                      |                    |
| 341.23              | 0.92                 | 0.57               | 341.76              | 1.77                 | 5.77               |                     |                      |                    |
| 341.24              | 0.94                 | 0.62               | 341.77              | 1.79                 | 5.92               |                     |                      |                    |
| 341.25              | 0.96                 | 0.66               | 341.78              | 1.80                 | 6.09               |                     |                      |                    |
| 341.26              | 0.99                 | 0.71               | 341.79              | 1.81                 | 6.25               |                     |                      |                    |
| 341.27              | 1.01                 | 0.76               | 341.80              | 1.82                 | 6.42               |                     |                      |                    |
| 341.28              | 1.03                 | 0.82               | 341.81              | 1.84                 | 6.59               |                     |                      |                    |
| 341.29              | 1.05                 | 0.87               | 341.82              | 1.85                 | 6.76               |                     |                      |                    |
| 341.30              | 1.07                 | 0.93               | 341.83              | 1.86                 | 6.93               |                     |                      |                    |
| 341.31              | 1.09                 | 0.99               | 341.84              | 1.87                 | 7.11               |                     |                      |                    |
| 341.32              | 1.11                 | 1.05               | 341.85              | 1.89                 | 7.29               |                     |                      |                    |
| 341.33              | 1.12                 | 1.11               | 341.86              | 1.90                 | 7.48               |                     |                      |                    |
| 341.34              | 1.14                 | 1.17               | 341.87              | 1.91                 | 7.66               |                     |                      |                    |
| 341.35              | 1.16                 | 1.24               | 341.88              | 1.92                 | 7.85               |                     |                      |                    |
| 341.36              | 1.18                 | 1.31               | 341.89              | 1.93                 | 8.04               |                     |                      |                    |
| 341.37              | 1.20                 | 1.38               | 341.90              | 1.95                 | 8.23               |                     |                      |                    |
| 341.38              | 1.21                 | 1.45               | 341.91              | 1.96                 | 8.43               |                     |                      |                    |
| 341.39              | 1.23                 | 1.52               | 341.92              | 1.97                 | 8.63               |                     |                      |                    |
| 341.40              | 1.25                 | 1.60               | 341.93              | 1.98                 | 8.83               |                     |                      |                    |
| 341.41              | 1.27                 | 1.68               | 341.94              | 1.99                 | 9.03               |                     |                      |                    |
| 341.42              | 1.28                 | 1.76               | 341.95              | 2.01                 | 9.24               |                     |                      |                    |
| 341.43              | 1.30                 | 1.84               | 341.96              | 2.02                 | 9.45               |                     |                      |                    |
| 341.44              | 1.32                 | 1.92               | 341.97              | 2.03                 | 9.67               |                     |                      |                    |
| 341.45              | 1.33                 | 2.01               | 341.98              | 2.04                 | 9.88               |                     |                      |                    |
| 341.46              | 1.35                 | 2.09               | 341.99              | 2.05                 | 10.10              |                     |                      |                    |
| 341.47              | 1.36                 | 2.18               | 342.00              | 2.06                 | 10.32              |                     |                      |                    |
| 341.48              | 1.38                 | 2.28               | 342.01              | 2.08                 | 10.55              |                     |                      |                    |
| 341.49              | 1.39                 | 2.37               | 342.02              | 2.09                 | 10.77              |                     |                      |                    |
| 341.50              | 1.41                 | 2.47               | 342.03              | 2.10                 | 11.00              |                     |                      |                    |
| 341.51              | 1.42                 | 2.57               | 342.04              | 2.11                 | 11.24              |                     |                      |                    |
| 341.52              | 1.44                 | 2.67               | 342.05              | 2.12                 | 11.47              |                     |                      |                    |

**Stage-Area-Storage for Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 341.00              | 0.0                 | 0                       | 342.06              | 5.5                 | 1,472                   |
| 341.02              | 0.0                 | 11                      | 342.08              | 5.7                 | 1,517                   |
| 341.04              | 0.1                 | 23                      | 342.10              | 5.8                 | 1,562                   |
| 341.06              | 0.1                 | 35                      | 342.12              | 6.0                 | 1,609                   |
| 341.08              | 0.2                 | 48                      | 342.14              | 6.2                 | 1,656                   |
| 341.10              | 0.2                 | 62                      | 342.16              | 6.4                 | 1,704                   |
| 341.12              | 0.3                 | 76                      | 342.18              | 6.5                 | 1,752                   |
| 341.14              | 0.3                 | 91                      | 342.20              | 6.7                 | 1,801                   |
| 341.16              | 0.4                 | 106                     | 342.22              | 6.9                 | 1,851                   |
| 341.18              | 0.5                 | 123                     | 342.24              | <b>7.1</b>          | <b>1,901</b>            |
| 341.20              | 0.5                 | 139                     |                     |                     |                         |
| 341.22              | 0.6                 | 157                     |                     |                     |                         |
| 341.24              | 0.7                 | 175                     |                     |                     |                         |
| 341.26              | 0.7                 | 194                     |                     |                     |                         |
| 341.28              | 0.8                 | 213                     |                     |                     |                         |
| 341.30              | 0.9                 | 233                     |                     |                     |                         |
| 341.32              | 0.9                 | 254                     |                     |                     |                         |
| 341.34              | 1.0                 | 275                     |                     |                     |                         |
| 341.36              | 1.1                 | 297                     |                     |                     |                         |
| 341.38              | 1.2                 | 320                     |                     |                     |                         |
| 341.40              | 1.3                 | 343                     |                     |                     |                         |
| 341.42              | 1.4                 | 367                     |                     |                     |                         |
| 341.44              | 1.5                 | 392                     |                     |                     |                         |
| 341.46              | 1.6                 | 417                     |                     |                     |                         |
| 341.48              | 1.7                 | 443                     |                     |                     |                         |
| 341.50              | 1.8                 | 469                     |                     |                     |                         |
| 341.52              | 1.9                 | 496                     |                     |                     |                         |
| 341.54              | 2.0                 | 524                     |                     |                     |                         |
| 341.56              | 2.1                 | 552                     |                     |                     |                         |
| 341.58              | 2.2                 | 581                     |                     |                     |                         |
| 341.60              | 2.3                 | 611                     |                     |                     |                         |
| 341.62              | 2.4                 | 641                     |                     |                     |                         |
| 341.64              | 2.5                 | 672                     |                     |                     |                         |
| 341.66              | 2.6                 | 704                     |                     |                     |                         |
| 341.68              | 2.7                 | 736                     |                     |                     |                         |
| 341.70              | 2.9                 | 769                     |                     |                     |                         |
| 341.72              | 3.0                 | 803                     |                     |                     |                         |
| 341.74              | 3.1                 | 837                     |                     |                     |                         |
| 341.76              | 3.3                 | 872                     |                     |                     |                         |
| 341.78              | 3.4                 | 907                     |                     |                     |                         |
| 341.80              | 3.5                 | 943                     |                     |                     |                         |
| 341.82              | 3.7                 | 980                     |                     |                     |                         |
| 341.84              | 3.8                 | 1,018                   |                     |                     |                         |
| 341.86              | 3.9                 | 1,056                   |                     |                     |                         |
| 341.88              | 4.1                 | 1,094                   |                     |                     |                         |
| 341.90              | 4.2                 | 1,134                   |                     |                     |                         |
| 341.92              | 4.4                 | 1,174                   |                     |                     |                         |
| 341.94              | 4.5                 | 1,214                   |                     |                     |                         |
| 341.96              | 4.7                 | 1,256                   |                     |                     |                         |
| 341.98              | 4.8                 | 1,297                   |                     |                     |                         |
| 342.00              | 5.0                 | 1,340                   |                     |                     |                         |
| 342.02              | 5.2                 | 1,383                   |                     |                     |                         |
| 342.04              | 5.3                 | 1,427                   |                     |                     |                         |

### Summary for Reach R12: 12" Culvert Pond Discharge

[52] Hint: Inlet/Outlet conditions not evaluated

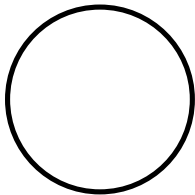
[80] Warning: Exceeded Pond 4P by 0.01' @ 0.00 hrs (0.00 cfs 0.002 af)

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.00" for WQv event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min  
Routed to Link AP3 : Analysis Point 3

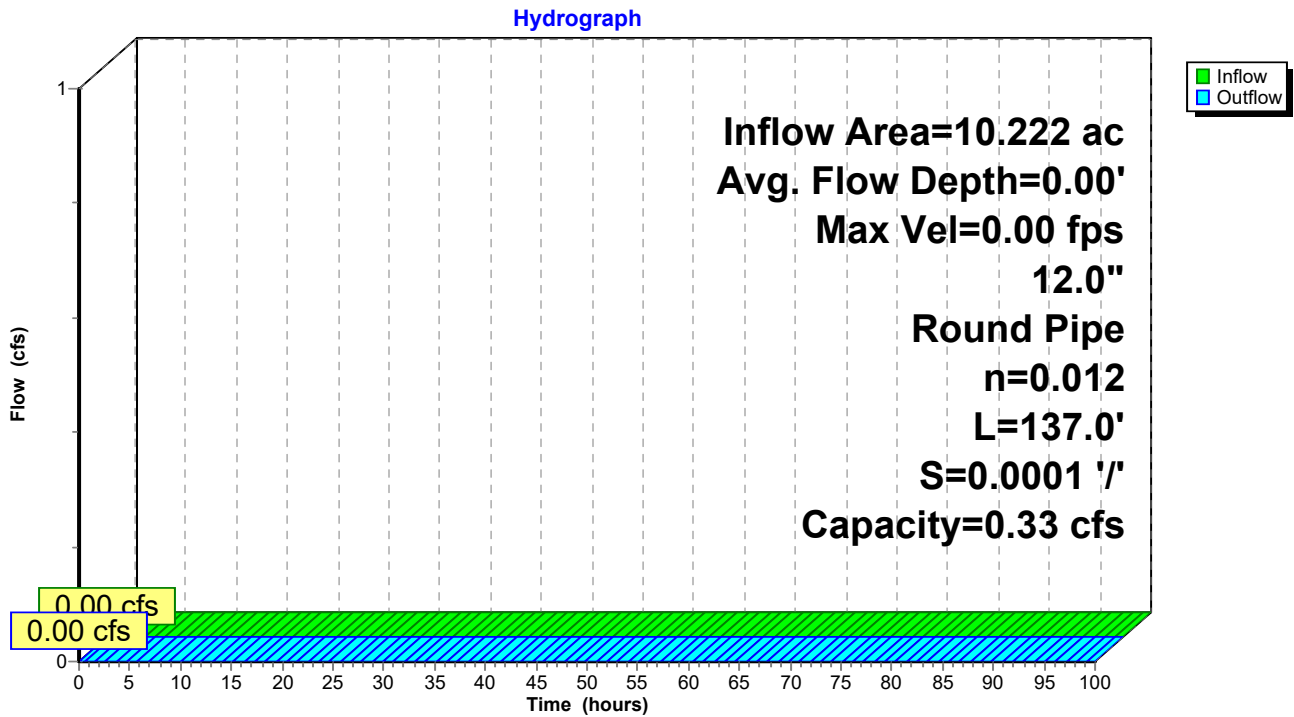
Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs  
Average Depth at Peak Storage= 0.00'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 0.33 cfs

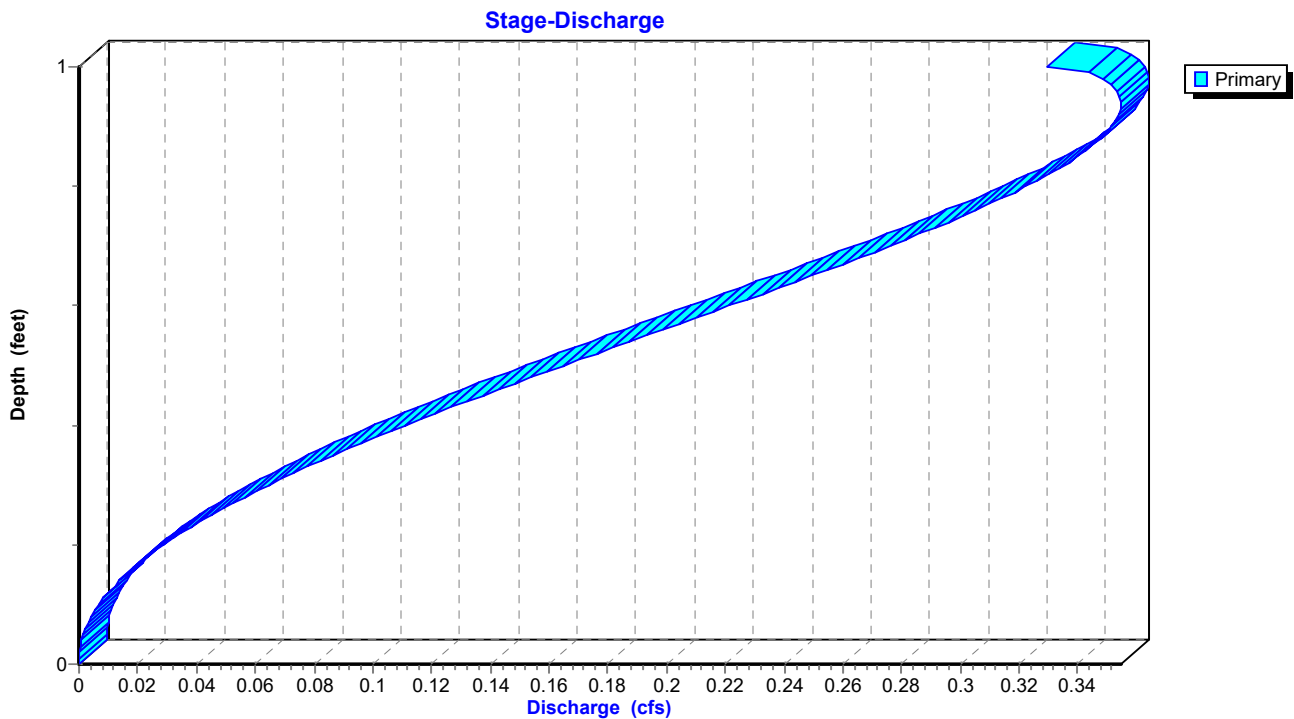
12.0" Round Pipe  
n= 0.012 Corrugated PP, smooth interior  
Length= 137.0' Slope= 0.0001 '/'  
Inlet Invert= 337.01', Outlet Invert= 337.00'



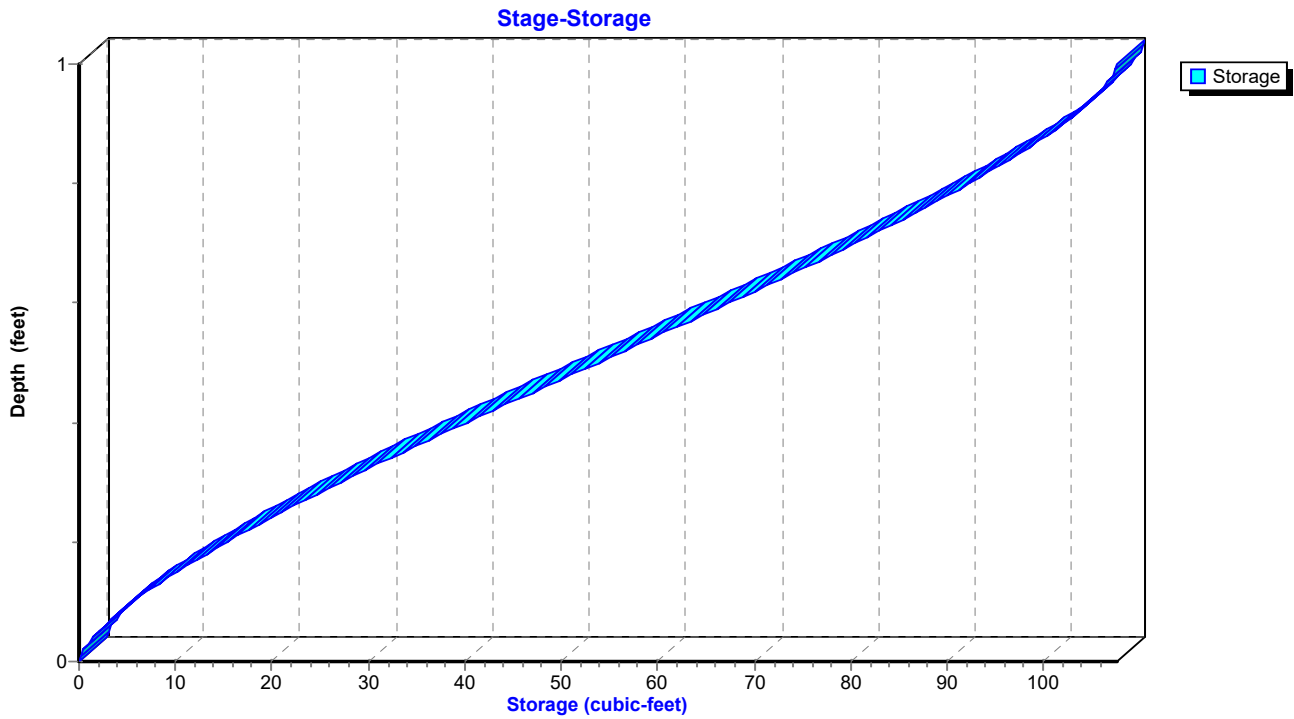
### Reach R12: 12" Culvert Pond Discharge



### Reach R12: 12" Culvert Pond Discharge



### Reach R12: 12" Culvert Pond Discharge



**Hydrograph for Reach R12: 12" Culvert Pond Discharge**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Outflow (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 337.01           | 0.00          | 53.00        | 0.00         | 337.01           | 0.00          |
| 1.00         | 0.00         | 337.01           | 0.00          | 54.00        | 0.00         | 337.01           | 0.00          |
| 2.00         | 0.00         | 337.01           | 0.00          | 55.00        | 0.00         | 337.01           | 0.00          |
| 3.00         | 0.00         | 337.01           | 0.00          | 56.00        | 0.00         | 337.01           | 0.00          |
| 4.00         | 0.00         | 337.01           | 0.00          | 57.00        | 0.00         | 337.01           | 0.00          |
| 5.00         | 0.00         | 337.01           | 0.00          | 58.00        | 0.00         | 337.01           | 0.00          |
| 6.00         | 0.00         | 337.01           | 0.00          | 59.00        | 0.00         | 337.01           | 0.00          |
| 7.00         | 0.00         | 337.01           | 0.00          | 60.00        | 0.00         | 337.01           | 0.00          |
| 8.00         | 0.00         | 337.01           | 0.00          | 61.00        | 0.00         | 337.01           | 0.00          |
| 9.00         | 0.00         | 337.01           | 0.00          | 62.00        | 0.00         | 337.01           | 0.00          |
| 10.00        | 0.00         | 337.01           | 0.00          | 63.00        | 0.00         | 337.01           | 0.00          |
| 11.00        | 0.00         | 337.01           | 0.00          | 64.00        | 0.00         | 337.01           | 0.00          |
| 12.00        | 0.00         | 337.01           | 0.00          | 65.00        | 0.00         | 337.01           | 0.00          |
| 13.00        | 0.00         | 337.01           | 0.00          | 66.00        | 0.00         | 337.01           | 0.00          |
| 14.00        | 0.00         | 337.01           | 0.00          | 67.00        | 0.00         | 337.01           | 0.00          |
| 15.00        | 0.00         | 337.01           | 0.00          | 68.00        | 0.00         | 337.01           | 0.00          |
| 16.00        | 0.00         | 337.01           | 0.00          | 69.00        | 0.00         | 337.01           | 0.00          |
| 17.00        | 0.00         | 337.01           | 0.00          | 70.00        | 0.00         | 337.01           | 0.00          |
| 18.00        | 0.00         | 337.01           | 0.00          | 71.00        | 0.00         | 337.01           | 0.00          |
| 19.00        | 0.00         | 337.01           | 0.00          | 72.00        | 0.00         | 337.01           | 0.00          |
| 20.00        | 0.00         | 337.01           | 0.00          | 73.00        | 0.00         | 337.01           | 0.00          |
| 21.00        | 0.00         | 337.01           | 0.00          | 74.00        | 0.00         | 337.01           | 0.00          |
| 22.00        | 0.00         | 337.01           | 0.00          | 75.00        | 0.00         | 337.01           | 0.00          |
| 23.00        | 0.00         | 337.01           | 0.00          | 76.00        | 0.00         | 337.01           | 0.00          |
| 24.00        | 0.00         | 337.01           | 0.00          | 77.00        | 0.00         | 337.01           | 0.00          |
| 25.00        | 0.00         | 337.01           | 0.00          | 78.00        | 0.00         | 337.01           | 0.00          |
| 26.00        | 0.00         | 337.01           | 0.00          | 79.00        | 0.00         | 337.01           | 0.00          |
| 27.00        | 0.00         | 337.01           | 0.00          | 80.00        | 0.00         | 337.01           | 0.00          |
| 28.00        | 0.00         | 337.01           | 0.00          | 81.00        | 0.00         | 337.01           | 0.00          |
| 29.00        | 0.00         | 337.01           | 0.00          | 82.00        | 0.00         | 337.01           | 0.00          |
| 30.00        | 0.00         | 337.01           | 0.00          | 83.00        | 0.00         | 337.01           | 0.00          |
| 31.00        | 0.00         | 337.01           | 0.00          | 84.00        | 0.00         | 337.01           | 0.00          |
| 32.00        | 0.00         | 337.01           | 0.00          | 85.00        | 0.00         | 337.01           | 0.00          |
| 33.00        | 0.00         | 337.01           | 0.00          | 86.00        | 0.00         | 337.01           | 0.00          |
| 34.00        | 0.00         | 337.01           | 0.00          | 87.00        | 0.00         | 337.01           | 0.00          |
| 35.00        | 0.00         | 337.01           | 0.00          | 88.00        | 0.00         | 337.01           | 0.00          |
| 36.00        | 0.00         | 337.01           | 0.00          | 89.00        | 0.00         | 337.01           | 0.00          |
| 37.00        | 0.00         | 337.01           | 0.00          | 90.00        | 0.00         | 337.01           | 0.00          |
| 38.00        | 0.00         | 337.01           | 0.00          | 91.00        | 0.00         | 337.01           | 0.00          |
| 39.00        | 0.00         | 337.01           | 0.00          | 92.00        | 0.00         | 337.01           | 0.00          |
| 40.00        | 0.00         | 337.01           | 0.00          | 93.00        | 0.00         | 337.01           | 0.00          |
| 41.00        | 0.00         | 337.01           | 0.00          | 94.00        | 0.00         | 337.01           | 0.00          |
| 42.00        | 0.00         | 337.01           | 0.00          | 95.00        | 0.00         | 337.01           | 0.00          |
| 43.00        | 0.00         | 337.01           | 0.00          | 96.00        | 0.00         | 337.01           | 0.00          |
| 44.00        | 0.00         | 337.01           | 0.00          | 97.00        | 0.00         | 337.01           | 0.00          |
| 45.00        | 0.00         | 337.01           | 0.00          | 98.00        | 0.00         | 337.01           | 0.00          |
| 46.00        | 0.00         | 337.01           | 0.00          | 99.00        | 0.00         | 337.01           | 0.00          |
| 47.00        | 0.00         | 337.01           | 0.00          | 100.00       | 0.00         | 337.01           | 0.00          |
| 48.00        | 0.00         | 337.01           | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 337.01           | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 337.01           | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 337.01           | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 337.01           | 0.00          |              |              |                  |               |



**Stage-Discharge for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.01              | 0.00                 | 0.00               | 337.54              | 0.43                 | 0.18               |
| 337.02              | 0.04                 | 0.00               | 337.55              | 0.43                 | 0.19               |
| 337.03              | 0.06                 | 0.00               | 337.56              | 0.44                 | 0.19               |
| 337.04              | 0.08                 | 0.00               | 337.57              | 0.44                 | 0.20               |
| 337.05              | 0.09                 | 0.00               | 337.58              | 0.44                 | 0.20               |
| 337.06              | 0.11                 | 0.00               | 337.59              | 0.45                 | 0.21               |
| 337.07              | 0.12                 | 0.00               | 337.60              | 0.45                 | 0.22               |
| 337.08              | 0.13                 | 0.00               | 337.61              | 0.45                 | 0.22               |
| 337.09              | 0.15                 | 0.00               | 337.62              | 0.45                 | 0.23               |
| 337.10              | 0.16                 | 0.01               | 337.63              | 0.46                 | 0.23               |
| 337.11              | 0.17                 | 0.01               | 337.64              | 0.46                 | 0.24               |
| 337.12              | 0.18                 | 0.01               | 337.65              | 0.46                 | 0.24               |
| 337.13              | 0.19                 | 0.01               | 337.66              | 0.46                 | 0.25               |
| 337.14              | 0.20                 | 0.01               | 337.67              | 0.46                 | 0.25               |
| 337.15              | 0.21                 | 0.01               | 337.68              | 0.47                 | 0.26               |
| 337.16              | 0.22                 | 0.02               | 337.69              | 0.47                 | 0.27               |
| 337.17              | 0.23                 | 0.02               | 337.70              | 0.47                 | 0.27               |
| 337.18              | 0.23                 | 0.02               | 337.71              | 0.47                 | 0.28               |
| 337.19              | 0.24                 | 0.02               | 337.72              | 0.47                 | 0.28               |
| 337.20              | 0.25                 | 0.03               | 337.73              | 0.47                 | 0.29               |
| 337.21              | 0.26                 | 0.03               | 337.74              | 0.47                 | 0.29               |
| 337.22              | 0.27                 | 0.03               | 337.75              | 0.47                 | 0.30               |
| 337.23              | 0.27                 | 0.03               | 337.76              | 0.48                 | 0.30               |
| 337.24              | 0.28                 | 0.04               | 337.77              | 0.48                 | 0.31               |
| 337.25              | 0.29                 | 0.04               | 337.78              | 0.48                 | 0.31               |
| 337.26              | 0.29                 | 0.05               | 337.79              | 0.48                 | 0.31               |
| 337.27              | 0.30                 | 0.05               | 337.80              | 0.48                 | 0.32               |
| 337.28              | 0.31                 | 0.05               | 337.81              | 0.48                 | 0.32               |
| 337.29              | 0.31                 | 0.06               | 337.82              | <b>0.48</b>          | 0.33               |
| 337.30              | 0.32                 | 0.06               | 337.83              | 0.48                 | 0.33               |
| 337.31              | 0.33                 | 0.06               | 337.84              | 0.48                 | 0.33               |
| 337.32              | 0.33                 | 0.07               | 337.85              | 0.48                 | 0.34               |
| 337.33              | 0.34                 | 0.07               | 337.86              | 0.48                 | 0.34               |
| 337.34              | 0.34                 | 0.08               | 337.87              | 0.48                 | 0.34               |
| 337.35              | 0.35                 | 0.08               | 337.88              | 0.48                 | 0.35               |
| 337.36              | 0.35                 | 0.09               | 337.89              | 0.47                 | 0.35               |
| 337.37              | 0.36                 | 0.09               | 337.90              | 0.47                 | 0.35               |
| 337.38              | 0.36                 | 0.10               | 337.91              | 0.47                 | 0.35               |
| 337.39              | 0.37                 | 0.10               | 337.92              | 0.47                 | 0.35               |
| 337.40              | 0.37                 | 0.11               | 337.93              | 0.47                 | 0.35               |
| 337.41              | 0.38                 | 0.11               | 337.94              | 0.47                 | 0.35               |
| 337.42              | 0.38                 | 0.12               | 337.95              | 0.46                 | <b>0.35</b>        |
| 337.43              | 0.39                 | 0.12               | 337.96              | 0.46                 | 0.35               |
| 337.44              | 0.39                 | 0.13               | 337.97              | 0.46                 | 0.35               |
| 337.45              | 0.40                 | 0.13               | 337.98              | 0.45                 | 0.35               |
| 337.46              | 0.40                 | 0.14               | 337.99              | 0.45                 | 0.35               |
| 337.47              | 0.40                 | 0.14               | 338.00              | 0.44                 | 0.34               |
| 337.48              | 0.41                 | 0.15               | 338.01              | 0.42                 | 0.33               |
| 337.49              | 0.41                 | 0.15               |                     |                      |                    |
| 337.50              | 0.42                 | 0.16               |                     |                      |                    |
| 337.51              | 0.42                 | 0.16               |                     |                      |                    |
| 337.52              | 0.42                 | 0.17               |                     |                      |                    |
| 337.53              | 0.43                 | 0.18               |                     |                      |                    |

**Stage-Area-Storage for Reach R12: 12" Culvert Pond Discharge**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.01              | 0.0                 | 0                       | 337.54              | 0.4                 | 58                      |
| 337.02              | 0.0                 | 0                       | 337.55              | 0.4                 | 59                      |
| 337.03              | 0.0                 | 1                       | 337.56              | 0.4                 | 61                      |
| 337.04              | 0.0                 | 1                       | 337.57              | 0.5                 | 62                      |
| 337.05              | 0.0                 | 1                       | 337.58              | 0.5                 | 63                      |
| 337.06              | 0.0                 | 2                       | 337.59              | 0.5                 | 65                      |
| 337.07              | 0.0                 | 3                       | 337.60              | 0.5                 | 66                      |
| 337.08              | 0.0                 | 3                       | 337.61              | 0.5                 | 67                      |
| 337.09              | 0.0                 | 4                       | 337.62              | 0.5                 | 69                      |
| 337.10              | 0.0                 | 5                       | 337.63              | 0.5                 | 70                      |
| 337.11              | 0.0                 | 6                       | 337.64              | 0.5                 | 71                      |
| 337.12              | 0.0                 | 6                       | 337.65              | 0.5                 | 73                      |
| 337.13              | 0.1                 | 7                       | 337.66              | 0.5                 | 74                      |
| 337.14              | 0.1                 | 8                       | 337.67              | 0.5                 | 75                      |
| 337.15              | 0.1                 | 9                       | 337.68              | 0.6                 | 77                      |
| 337.16              | 0.1                 | 10                      | 337.69              | 0.6                 | 78                      |
| 337.17              | 0.1                 | 11                      | 337.70              | 0.6                 | 79                      |
| 337.18              | 0.1                 | 12                      | 337.71              | 0.6                 | 80                      |
| 337.19              | 0.1                 | 13                      | 337.72              | 0.6                 | 82                      |
| 337.20              | 0.1                 | 14                      | 337.73              | 0.6                 | 83                      |
| 337.21              | 0.1                 | 15                      | 337.74              | 0.6                 | 84                      |
| 337.22              | 0.1                 | 16                      | 337.75              | 0.6                 | 85                      |
| 337.23              | 0.1                 | 18                      | 337.76              | 0.6                 | 87                      |
| 337.24              | 0.1                 | 19                      | 337.77              | 0.6                 | 88                      |
| 337.25              | 0.1                 | 20                      | 337.78              | 0.6                 | 89                      |
| 337.26              | 0.2                 | 21                      | 337.79              | 0.7                 | 90                      |
| 337.27              | 0.2                 | 22                      | 337.80              | 0.7                 | 91                      |
| 337.28              | 0.2                 | 23                      | 337.81              | 0.7                 | 92                      |
| 337.29              | 0.2                 | 25                      | 337.82              | 0.7                 | 93                      |
| 337.30              | 0.2                 | 26                      | 337.83              | 0.7                 | 94                      |
| 337.31              | 0.2                 | 27                      | 337.84              | 0.7                 | 95                      |
| 337.32              | 0.2                 | 28                      | 337.85              | 0.7                 | 96                      |
| 337.33              | 0.2                 | 30                      | 337.86              | 0.7                 | 97                      |
| 337.34              | 0.2                 | 31                      | 337.87              | 0.7                 | 98                      |
| 337.35              | 0.2                 | 32                      | 337.88              | 0.7                 | 99                      |
| 337.36              | 0.2                 | 34                      | 337.89              | 0.7                 | 100                     |
| 337.37              | 0.3                 | 35                      | 337.90              | 0.7                 | 101                     |
| 337.38              | 0.3                 | 36                      | 337.91              | 0.7                 | 102                     |
| 337.39              | 0.3                 | 38                      | 337.92              | 0.8                 | 103                     |
| 337.40              | 0.3                 | 39                      | 337.93              | 0.8                 | 104                     |
| 337.41              | 0.3                 | 40                      | 337.94              | 0.8                 | 104                     |
| 337.42              | 0.3                 | 42                      | 337.95              | 0.8                 | 105                     |
| 337.43              | 0.3                 | 43                      | 337.96              | 0.8                 | 106                     |
| 337.44              | 0.3                 | 44                      | 337.97              | 0.8                 | 106                     |
| 337.45              | 0.3                 | 46                      | 337.98              | 0.8                 | 107                     |
| 337.46              | 0.3                 | 47                      | 337.99              | 0.8                 | 107                     |
| 337.47              | 0.4                 | 48                      | 338.00              | 0.8                 | 107                     |
| 337.48              | 0.4                 | 50                      | 338.01              | <b>0.8</b>          | <b>108</b>              |
| 337.49              | 0.4                 | 51                      |                     |                     |                         |
| 337.50              | 0.4                 | 52                      |                     |                     |                         |
| 337.51              | 0.4                 | 54                      |                     |                     |                         |
| 337.52              | 0.4                 | 55                      |                     |                     |                         |
| 337.53              | 0.4                 | 57                      |                     |                     |                         |

**Summary for Reach R7: Proposed RRv Swale**

Inflow Area = 5.515 ac, 54.87% Impervious, Inflow Depth = 0.27" for WQv event  
 Inflow = 1.56 cfs @ 12.12 hrs, Volume= 0.126 af  
 Outflow = 1.36 cfs @ 12.20 hrs, Volume= 0.126 af, Atten= 13%, Lag= 4.6 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.86 fps, Min. Travel Time= 6.2 min  
 Avg. Velocity = 0.27 fps, Avg. Travel Time= 19.3 min

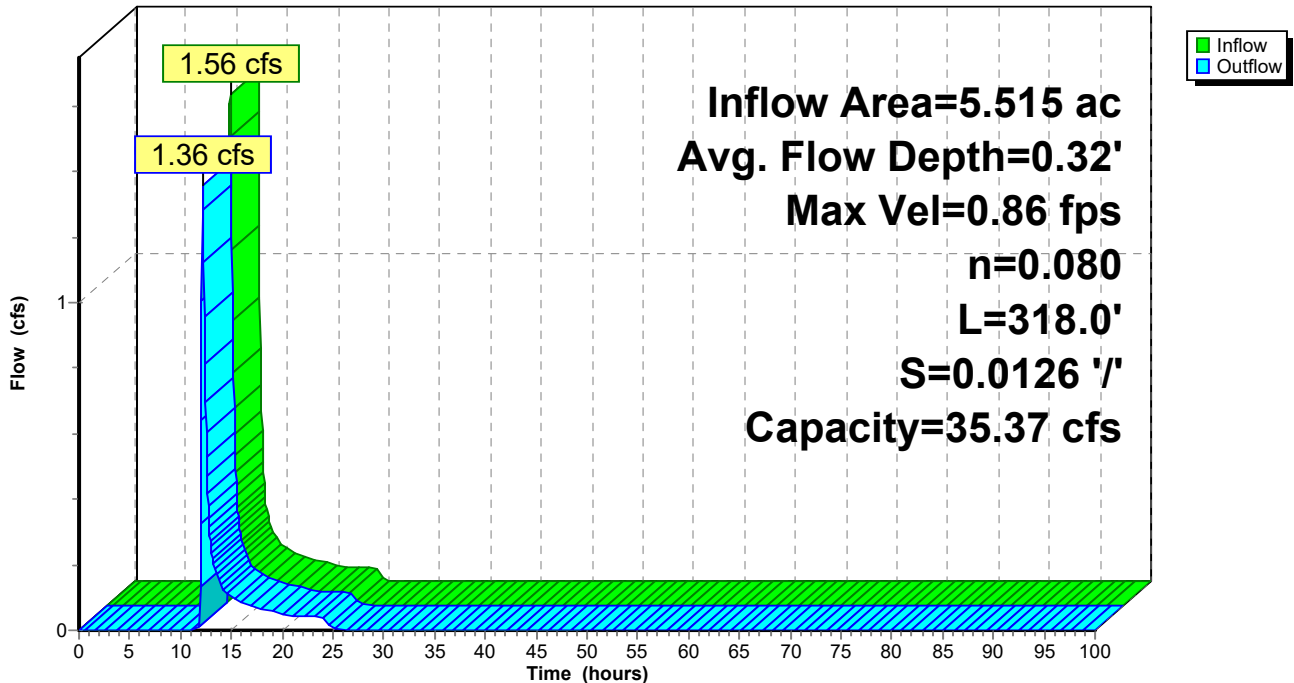
Peak Storage= 504 cf @ 12.20 hrs  
 Average Depth at Peak Storage= 0.32' , Surface Width= 5.92'  
 Bank-Full Depth= 1.75' Flow Area= 16.2 sf, Capacity= 35.37 cfs

4.00' x 1.75' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.50'  
 Length= 318.0' Slope= 0.0126 ' / '  
 Inlet Invert= 335.00', Outlet Invert= 331.00'

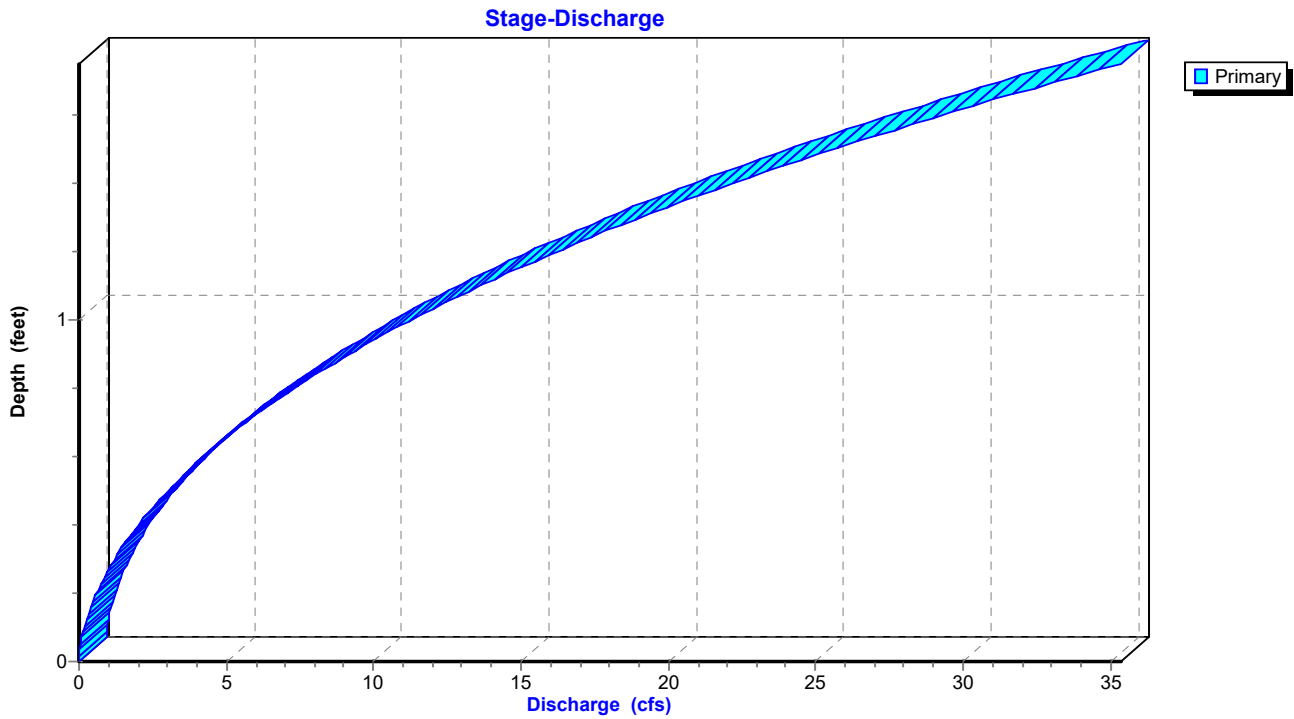


**Reach R7: Proposed RRv Swale**

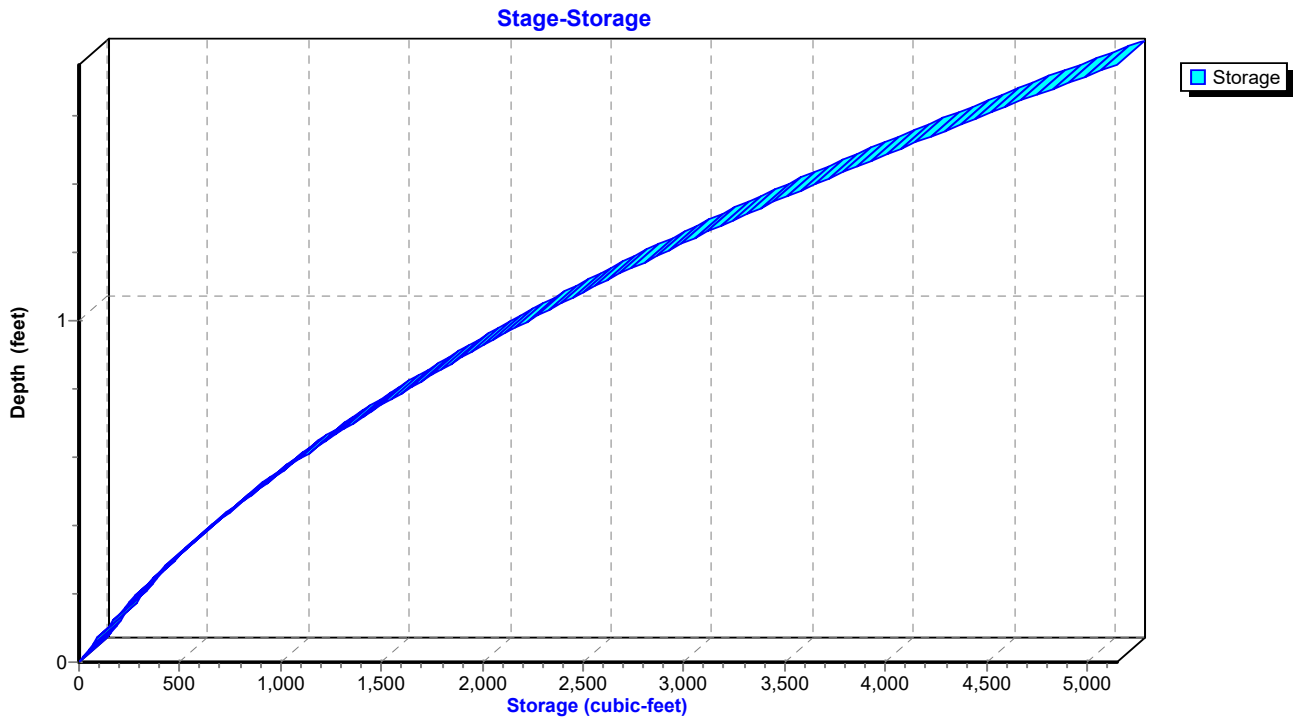
Hydrograph



### Reach R7: Proposed RRv Swale



### Reach R7: Proposed RRv Swale



**Hydrograph for Reach R7: Proposed RRv Swale**

| Time<br>(hours) | Inflow<br>(cfs) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Outflow<br>(cfs) |
|-----------------|-----------------|-------------------------|---------------------|------------------|
| 0.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 2.50            | 0.00            | 0                       | 335.00              | 0.00             |
| 5.00            | 0.00            | 0                       | 335.00              | 0.00             |
| 7.50            | 0.00            | 0                       | 335.00              | 0.00             |
| 10.00           | <b>0.00</b>     | <b>0</b>                | <b>335.00</b>       | <b>0.00</b>      |
| 12.50           | <b>0.46</b>     | <b>294</b>              | <b>335.20</b>       | <b>0.60</b>      |
| 15.00           | 0.10            | 95                      | 335.07              | 0.10             |
| 17.50           | 0.07            | 73                      | 335.06              | 0.07             |
| 20.00           | 0.05            | 60                      | 335.05              | 0.05             |
| 22.50           | 0.04            | 54                      | 335.04              | 0.04             |
| 25.00           | 0.00            | 14                      | 335.01              | 0.01             |
| 27.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 30.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 32.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 35.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 37.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 40.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 42.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 45.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 47.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 50.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 52.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 55.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 57.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 60.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 62.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 65.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 67.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 70.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 72.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 75.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 77.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 80.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 82.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 85.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 87.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 90.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 92.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 95.00           | 0.00            | 0                       | 335.00              | 0.00             |
| 97.50           | 0.00            | 0                       | 335.00              | 0.00             |
| 100.00          | 0.00            | 0                       | 335.00              | 0.00             |

**Stage-Discharge for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 335.00              | 0.00                 | 0.00               | 336.06              | 1.66                 | 12.63              |
| 335.02              | 0.15                 | 0.01               | 336.08              | 1.68                 | 13.11              |
| 335.04              | 0.24                 | 0.04               | 336.10              | 1.69                 | 13.60              |
| 335.06              | 0.31                 | 0.08               | 336.12              | 1.71                 | 14.10              |
| 335.08              | 0.37                 | 0.13               | 336.14              | 1.73                 | 14.61              |
| 335.10              | 0.43                 | 0.18               | 336.16              | 1.74                 | 15.13              |
| 335.12              | 0.48                 | 0.25               | 336.18              | 1.76                 | 15.66              |
| 335.14              | 0.53                 | 0.33               | 336.20              | 1.78                 | 16.20              |
| 335.16              | 0.57                 | 0.41               | 336.22              | 1.79                 | 16.75              |
| 335.18              | 0.61                 | 0.50               | 336.24              | 1.81                 | 17.31              |
| 335.20              | 0.65                 | 0.60               | 336.26              | 1.82                 | 17.88              |
| 335.22              | 0.69                 | 0.71               | 336.28              | 1.84                 | 18.46              |
| 335.24              | 0.72                 | 0.82               | 336.30              | 1.86                 | 19.05              |
| 335.26              | 0.76                 | 0.94               | 336.32              | 1.87                 | 19.66              |
| 335.28              | 0.79                 | 1.07               | 336.34              | 1.89                 | 20.27              |
| 335.30              | 0.83                 | 1.21               | 336.36              | 1.90                 | 20.90              |
| 335.32              | 0.86                 | 1.36               | 336.38              | 1.92                 | 21.53              |
| 335.34              | 0.89                 | 1.51               | 336.40              | 1.93                 | 22.18              |
| 335.36              | 0.92                 | 1.68               | 336.42              | 1.95                 | 22.84              |
| 335.38              | 0.94                 | 1.84               | 336.44              | 1.96                 | 23.51              |
| 335.40              | 0.97                 | 2.02               | 336.46              | 1.98                 | 24.19              |
| 335.42              | 1.00                 | 2.21               | 336.48              | 1.99                 | 24.88              |
| 335.44              | 1.02                 | 2.40               | 336.50              | 2.01                 | 25.59              |
| 335.46              | 1.05                 | 2.60               | 336.52              | 2.02                 | 26.30              |
| 335.48              | 1.08                 | 2.81               | 336.54              | 2.04                 | 27.03              |
| 335.50              | 1.10                 | 3.03               | 336.56              | 2.05                 | 27.77              |
| 335.52              | 1.12                 | 3.25               | 336.58              | 2.07                 | 28.52              |
| 335.54              | 1.15                 | 3.49               | 336.60              | 2.08                 | 29.28              |
| 335.56              | 1.17                 | 3.73               | 336.62              | 2.09                 | 30.05              |
| 335.58              | 1.19                 | 3.98               | 336.64              | 2.11                 | 30.84              |
| 335.60              | 1.22                 | 4.24               | 336.66              | 2.12                 | 31.64              |
| 335.62              | 1.24                 | 4.50               | 336.68              | 2.14                 | 32.44              |
| 335.64              | 1.26                 | 4.78               | 336.70              | 2.15                 | 33.27              |
| 335.66              | 1.28                 | 5.06               | 336.72              | 2.16                 | 34.10              |
| 335.68              | 1.30                 | 5.35               | 336.74              | <b>2.18</b>          | <b>34.95</b>       |
| 335.70              | 1.32                 | 5.65               |                     |                      |                    |
| 335.72              | 1.34                 | 5.96               |                     |                      |                    |
| 335.74              | 1.36                 | 6.28               |                     |                      |                    |
| 335.76              | 1.38                 | 6.61               |                     |                      |                    |
| 335.78              | 1.40                 | 6.95               |                     |                      |                    |
| 335.80              | 1.42                 | 7.29               |                     |                      |                    |
| 335.82              | 1.44                 | 7.65               |                     |                      |                    |
| 335.84              | 1.46                 | 8.01               |                     |                      |                    |
| 335.86              | 1.48                 | 8.38               |                     |                      |                    |
| 335.88              | 1.50                 | 8.76               |                     |                      |                    |
| 335.90              | 1.52                 | 9.16               |                     |                      |                    |
| 335.92              | 1.54                 | 9.56               |                     |                      |                    |
| 335.94              | 1.55                 | 9.97               |                     |                      |                    |
| 335.96              | 1.57                 | 10.39              |                     |                      |                    |
| 335.98              | 1.59                 | 10.82              |                     |                      |                    |
| 336.00              | 1.61                 | 11.25              |                     |                      |                    |
| 336.02              | 1.63                 | 11.70              |                     |                      |                    |
| 336.04              | 1.64                 | 12.16              |                     |                      |                    |

**Stage-Area-Storage for Reach R7: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 335.00              | 0.0                 | 0                       | 336.06              | 7.6                 | 2,420                   |
| 335.02              | 0.1                 | 26                      | 336.08              | 7.8                 | 2,487                   |
| 335.04              | 0.2                 | 52                      | 336.10              | 8.0                 | 2,554                   |
| 335.06              | 0.3                 | 80                      | 336.12              | 8.2                 | 2,621                   |
| 335.08              | 0.3                 | 108                     | 336.14              | 8.5                 | 2,690                   |
| 335.10              | 0.4                 | 137                     | 336.16              | 8.7                 | 2,759                   |
| 335.12              | 0.5                 | 166                     | 336.18              | 8.9                 | 2,829                   |
| 335.14              | 0.6                 | 197                     | 336.20              | 9.1                 | 2,900                   |
| 335.16              | 0.7                 | 228                     | 336.22              | 9.3                 | 2,972                   |
| 335.18              | 0.8                 | 260                     | 336.24              | 9.6                 | 3,044                   |
| 335.20              | 0.9                 | 293                     | 336.26              | 9.8                 | 3,117                   |
| 335.22              | 1.0                 | 326                     | 336.28              | 10.0                | 3,191                   |
| 335.24              | 1.1                 | 360                     | 336.30              | 10.3                | 3,266                   |
| 335.26              | 1.2                 | 395                     | 336.32              | 10.5                | 3,341                   |
| 335.28              | 1.4                 | 431                     | 336.34              | 10.7                | 3,418                   |
| 335.30              | 1.5                 | 467                     | 336.36              | 11.0                | 3,494                   |
| 335.32              | 1.6                 | 505                     | 336.38              | 11.2                | 3,572                   |
| 335.34              | 1.7                 | 543                     | 336.40              | 11.5                | 3,651                   |
| 335.36              | 1.8                 | 582                     | 336.42              | 11.7                | 3,730                   |
| 335.38              | 2.0                 | 621                     | 336.44              | 12.0                | 3,810                   |
| 335.40              | 2.1                 | 661                     | 336.46              | 12.2                | 3,891                   |
| 335.42              | 2.2                 | 703                     | 336.48              | 12.5                | 3,972                   |
| 335.44              | 2.3                 | 744                     | 336.50              | 12.8                | 4,055                   |
| 335.46              | 2.5                 | 787                     | 336.52              | 13.0                | 4,138                   |
| 335.48              | 2.6                 | 830                     | 336.54              | 13.3                | 4,221                   |
| 335.50              | 2.8                 | 875                     | 336.56              | 13.5                | 4,306                   |
| 335.52              | 2.9                 | 919                     | 336.58              | 13.8                | 4,391                   |
| 335.54              | 3.0                 | 965                     | 336.60              | 14.1                | 4,478                   |
| 335.56              | 3.2                 | 1,011                   | 336.62              | 14.4                | 4,564                   |
| 335.58              | 3.3                 | 1,059                   | 336.64              | 14.6                | 4,652                   |
| 335.60              | 3.5                 | 1,107                   | 336.66              | 14.9                | 4,740                   |
| 335.62              | 3.6                 | 1,155                   | 336.68              | 15.2                | 4,830                   |
| 335.64              | 3.8                 | 1,205                   | 336.70              | 15.5                | 4,919                   |
| 335.66              | 3.9                 | 1,255                   | 336.72              | 15.8                | 5,010                   |
| 335.68              | 4.1                 | 1,306                   | 336.74              | <b>16.0</b>         | <b>5,102</b>            |
| 335.70              | 4.3                 | 1,358                   |                     |                     |                         |
| 335.72              | 4.4                 | 1,410                   |                     |                     |                         |
| 335.74              | 4.6                 | 1,464                   |                     |                     |                         |
| 335.76              | 4.8                 | 1,518                   |                     |                     |                         |
| 335.78              | 4.9                 | 1,573                   |                     |                     |                         |
| 335.80              | 5.1                 | 1,628                   |                     |                     |                         |
| 335.82              | 5.3                 | 1,685                   |                     |                     |                         |
| 335.84              | 5.5                 | 1,742                   |                     |                     |                         |
| 335.86              | 5.7                 | 1,800                   |                     |                     |                         |
| 335.88              | 5.8                 | 1,858                   |                     |                     |                         |
| 335.90              | 6.0                 | 1,918                   |                     |                     |                         |
| 335.92              | 6.2                 | 1,978                   |                     |                     |                         |
| 335.94              | 6.4                 | 2,039                   |                     |                     |                         |
| 335.96              | 6.6                 | 2,100                   |                     |                     |                         |
| 335.98              | 6.8                 | 2,163                   |                     |                     |                         |
| 336.00              | 7.0                 | 2,226                   |                     |                     |                         |
| 336.02              | 7.2                 | 2,290                   |                     |                     |                         |
| 336.04              | 7.4                 | 2,355                   |                     |                     |                         |

**Summary for Reach R8: Proposed RRv Swale**

Inflow Area = 2.075 ac, 33.06% Impervious, Inflow Depth = 0.00" for WQv event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min  
 Routed to Pond 5P : Proposed Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

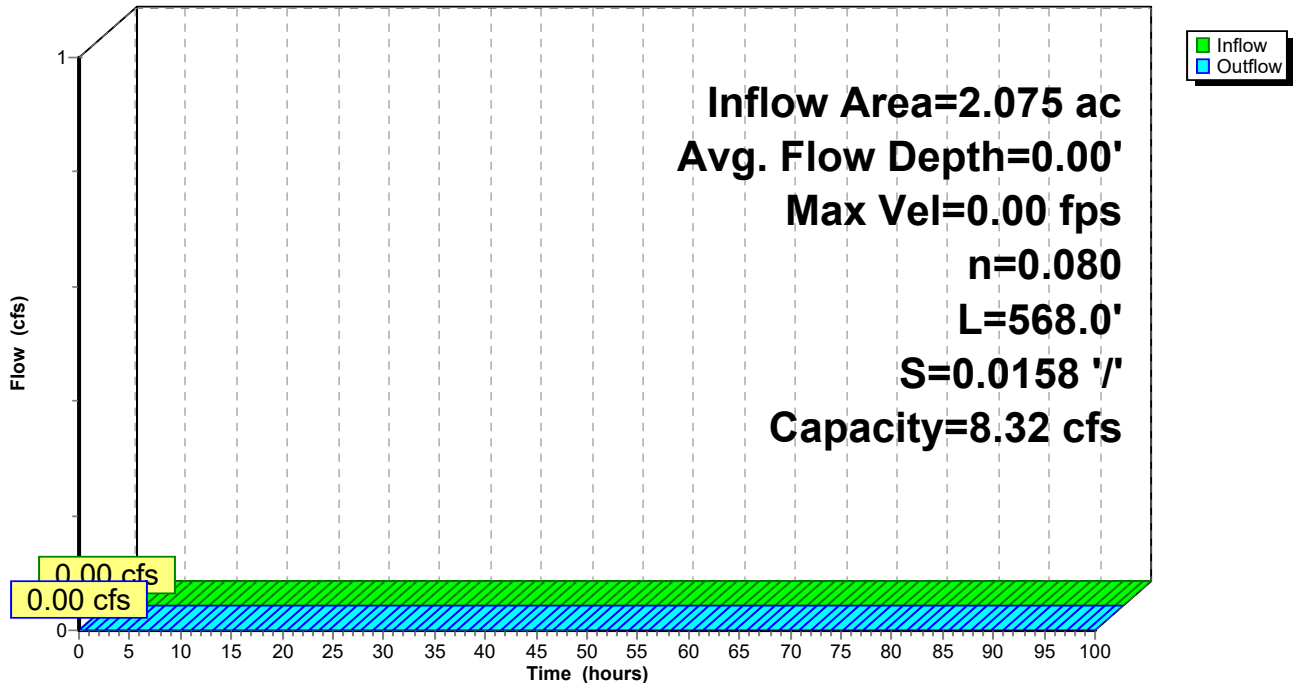
Peak Storage= 0 cf @ 0.00 hrs  
 Average Depth at Peak Storage= 0.00'  
 Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 8.32 cfs

2.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 '/' Top Width= 8.00'  
 Length= 568.0' Slope= 0.0158 '/'  
 Inlet Invert= 340.00', Outlet Invert= 331.00'



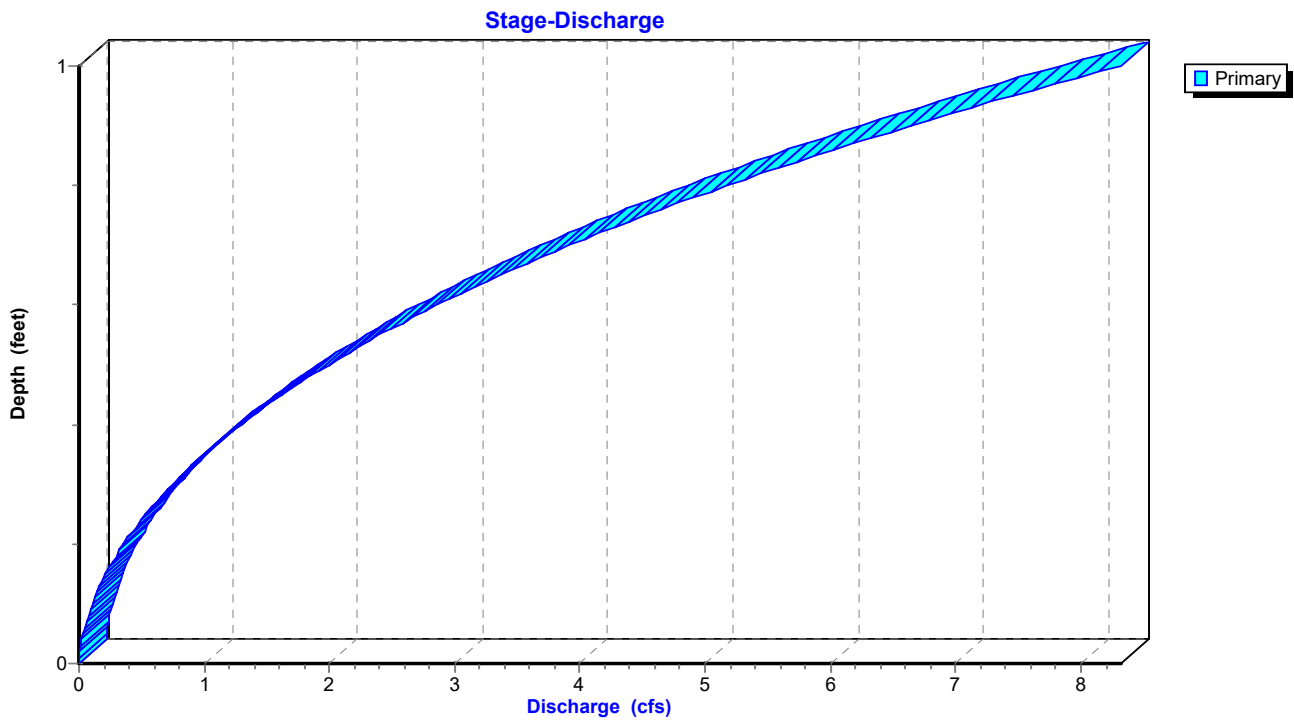
**Reach R8: Proposed RRv Swale**

Hydrograph

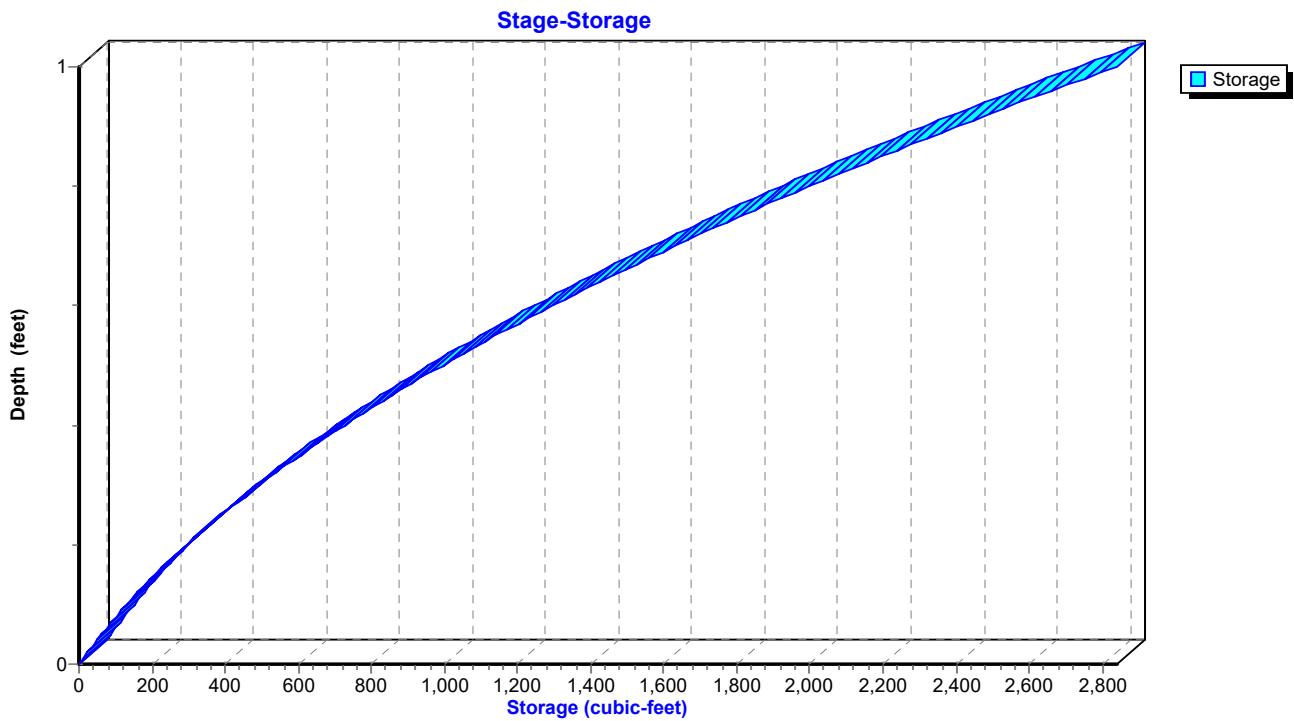




### Reach R8: Proposed RRv Swale



### Reach R8: Proposed RRv Swale



**Hydrograph for Reach R8: Proposed RRv Swale**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Outflow (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 340.00           | 0.00          | 53.00        | 0.00         | 340.00           | 0.00          |
| 1.00         | 0.00         | 340.00           | 0.00          | 54.00        | 0.00         | 340.00           | 0.00          |
| 2.00         | 0.00         | 340.00           | 0.00          | 55.00        | 0.00         | 340.00           | 0.00          |
| 3.00         | 0.00         | 340.00           | 0.00          | 56.00        | 0.00         | 340.00           | 0.00          |
| 4.00         | 0.00         | 340.00           | 0.00          | 57.00        | 0.00         | 340.00           | 0.00          |
| 5.00         | 0.00         | 340.00           | 0.00          | 58.00        | 0.00         | 340.00           | 0.00          |
| 6.00         | 0.00         | 340.00           | 0.00          | 59.00        | 0.00         | 340.00           | 0.00          |
| 7.00         | 0.00         | 340.00           | 0.00          | 60.00        | 0.00         | 340.00           | 0.00          |
| 8.00         | 0.00         | 340.00           | 0.00          | 61.00        | 0.00         | 340.00           | 0.00          |
| 9.00         | 0.00         | 340.00           | 0.00          | 62.00        | 0.00         | 340.00           | 0.00          |
| 10.00        | 0.00         | 340.00           | 0.00          | 63.00        | 0.00         | 340.00           | 0.00          |
| 11.00        | 0.00         | 340.00           | 0.00          | 64.00        | 0.00         | 340.00           | 0.00          |
| 12.00        | 0.00         | 340.00           | 0.00          | 65.00        | 0.00         | 340.00           | 0.00          |
| 13.00        | 0.00         | 340.00           | 0.00          | 66.00        | 0.00         | 340.00           | 0.00          |
| 14.00        | 0.00         | 340.00           | 0.00          | 67.00        | 0.00         | 340.00           | 0.00          |
| 15.00        | 0.00         | 340.00           | 0.00          | 68.00        | 0.00         | 340.00           | 0.00          |
| 16.00        | 0.00         | 340.00           | 0.00          | 69.00        | 0.00         | 340.00           | 0.00          |
| 17.00        | 0.00         | 340.00           | 0.00          | 70.00        | 0.00         | 340.00           | 0.00          |
| 18.00        | 0.00         | 340.00           | 0.00          | 71.00        | 0.00         | 340.00           | 0.00          |
| 19.00        | 0.00         | 340.00           | 0.00          | 72.00        | 0.00         | 340.00           | 0.00          |
| 20.00        | 0.00         | 340.00           | 0.00          | 73.00        | 0.00         | 340.00           | 0.00          |
| 21.00        | 0.00         | 340.00           | 0.00          | 74.00        | 0.00         | 340.00           | 0.00          |
| 22.00        | 0.00         | 340.00           | 0.00          | 75.00        | 0.00         | 340.00           | 0.00          |
| 23.00        | 0.00         | 340.00           | 0.00          | 76.00        | 0.00         | 340.00           | 0.00          |
| 24.00        | 0.00         | 340.00           | 0.00          | 77.00        | 0.00         | 340.00           | 0.00          |
| 25.00        | 0.00         | 340.00           | 0.00          | 78.00        | 0.00         | 340.00           | 0.00          |
| 26.00        | 0.00         | 340.00           | 0.00          | 79.00        | 0.00         | 340.00           | 0.00          |
| 27.00        | 0.00         | 340.00           | 0.00          | 80.00        | 0.00         | 340.00           | 0.00          |
| 28.00        | 0.00         | 340.00           | 0.00          | 81.00        | 0.00         | 340.00           | 0.00          |
| 29.00        | 0.00         | 340.00           | 0.00          | 82.00        | 0.00         | 340.00           | 0.00          |
| 30.00        | 0.00         | 340.00           | 0.00          | 83.00        | 0.00         | 340.00           | 0.00          |
| 31.00        | 0.00         | 340.00           | 0.00          | 84.00        | 0.00         | 340.00           | 0.00          |
| 32.00        | 0.00         | 340.00           | 0.00          | 85.00        | 0.00         | 340.00           | 0.00          |
| 33.00        | 0.00         | 340.00           | 0.00          | 86.00        | 0.00         | 340.00           | 0.00          |
| 34.00        | 0.00         | 340.00           | 0.00          | 87.00        | 0.00         | 340.00           | 0.00          |
| 35.00        | 0.00         | 340.00           | 0.00          | 88.00        | 0.00         | 340.00           | 0.00          |
| 36.00        | 0.00         | 340.00           | 0.00          | 89.00        | 0.00         | 340.00           | 0.00          |
| 37.00        | 0.00         | 340.00           | 0.00          | 90.00        | 0.00         | 340.00           | 0.00          |
| 38.00        | 0.00         | 340.00           | 0.00          | 91.00        | 0.00         | 340.00           | 0.00          |
| 39.00        | 0.00         | 340.00           | 0.00          | 92.00        | 0.00         | 340.00           | 0.00          |
| 40.00        | 0.00         | 340.00           | 0.00          | 93.00        | 0.00         | 340.00           | 0.00          |
| 41.00        | 0.00         | 340.00           | 0.00          | 94.00        | 0.00         | 340.00           | 0.00          |
| 42.00        | 0.00         | 340.00           | 0.00          | 95.00        | 0.00         | 340.00           | 0.00          |
| 43.00        | 0.00         | 340.00           | 0.00          | 96.00        | 0.00         | 340.00           | 0.00          |
| 44.00        | 0.00         | 340.00           | 0.00          | 97.00        | 0.00         | 340.00           | 0.00          |
| 45.00        | 0.00         | 340.00           | 0.00          | 98.00        | 0.00         | 340.00           | 0.00          |
| 46.00        | 0.00         | 340.00           | 0.00          | 99.00        | 0.00         | 340.00           | 0.00          |
| 47.00        | 0.00         | 340.00           | 0.00          | 100.00       | 0.00         | 340.00           | 0.00          |
| 48.00        | 0.00         | 340.00           | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 340.00           | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 340.00           | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 340.00           | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 340.00           | 0.00          |              |              |                  |               |

**Stage-Discharge for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 340.00              | 0.00                 | 0.00               | 340.53              | 1.17                 | 2.23               |
| 340.01              | 0.11                 | 0.00               | 340.54              | 1.19                 | 2.32               |
| 340.02              | 0.17                 | 0.01               | 340.55              | 1.20                 | 2.40               |
| 340.03              | 0.22                 | 0.01               | 340.56              | 1.21                 | 2.49               |
| 340.04              | 0.26                 | 0.02               | 340.57              | 1.22                 | 2.58               |
| 340.05              | 0.30                 | 0.03               | 340.58              | 1.23                 | 2.67               |
| 340.06              | 0.34                 | 0.04               | 340.59              | 1.24                 | 2.77               |
| 340.07              | 0.37                 | 0.06               | 340.60              | 1.26                 | 2.86               |
| 340.08              | 0.40                 | 0.07               | 340.61              | 1.27                 | 2.96               |
| 340.09              | 0.43                 | 0.09               | 340.62              | 1.28                 | 3.06               |
| 340.10              | 0.46                 | 0.11               | 340.63              | 1.29                 | 3.16               |
| 340.11              | 0.49                 | 0.12               | 340.64              | 1.30                 | 3.26               |
| 340.12              | 0.51                 | 0.15               | 340.65              | 1.31                 | 3.37               |
| 340.13              | 0.54                 | 0.17               | 340.66              | 1.32                 | 3.47               |
| 340.14              | 0.56                 | 0.19               | 340.67              | 1.33                 | 3.58               |
| 340.15              | 0.58                 | 0.21               | 340.68              | 1.34                 | 3.69               |
| 340.16              | 0.61                 | 0.24               | 340.69              | 1.36                 | 3.81               |
| 340.17              | 0.63                 | 0.27               | 340.70              | 1.37                 | 3.92               |
| 340.18              | 0.65                 | 0.30               | 340.71              | 1.38                 | 4.04               |
| 340.19              | 0.67                 | 0.33               | 340.72              | 1.39                 | 4.16               |
| 340.20              | 0.69                 | 0.36               | 340.73              | 1.40                 | 4.28               |
| 340.21              | 0.71                 | 0.39               | 340.74              | 1.41                 | 4.40               |
| 340.22              | 0.72                 | 0.42               | 340.75              | 1.42                 | 4.52               |
| 340.23              | 0.74                 | 0.46               | 340.76              | 1.43                 | 4.65               |
| 340.24              | 0.76                 | 0.50               | 340.77              | 1.44                 | 4.78               |
| 340.25              | 0.78                 | 0.53               | 340.78              | 1.45                 | 4.91               |
| 340.26              | 0.80                 | 0.57               | 340.79              | 1.46                 | 5.04               |
| 340.27              | 0.81                 | 0.62               | 340.80              | 1.47                 | 5.18               |
| 340.28              | 0.83                 | 0.66               | 340.81              | 1.48                 | 5.31               |
| 340.29              | 0.84                 | 0.70               | 340.82              | 1.49                 | 5.45               |
| 340.30              | 0.86                 | 0.75               | 340.83              | 1.50                 | 5.59               |
| 340.31              | 0.88                 | 0.80               | 340.84              | 1.51                 | 5.73               |
| 340.32              | 0.89                 | 0.84               | 340.85              | 1.52                 | 5.88               |
| 340.33              | 0.91                 | 0.89               | 340.86              | 1.53                 | 6.03               |
| 340.34              | 0.92                 | 0.95               | 340.87              | 1.54                 | 6.18               |
| 340.35              | 0.94                 | 1.00               | 340.88              | 1.55                 | 6.33               |
| 340.36              | 0.95                 | 1.05               | 340.89              | 1.56                 | 6.48               |
| 340.37              | 0.96                 | 1.11               | 340.90              | 1.57                 | 6.64               |
| 340.38              | 0.98                 | 1.17               | 340.91              | 1.58                 | 6.80               |
| 340.39              | 0.99                 | 1.23               | 340.92              | 1.59                 | 6.96               |
| 340.40              | 1.01                 | 1.29               | 340.93              | 1.60                 | 7.12               |
| 340.41              | 1.02                 | 1.35               | 340.94              | 1.61                 | 7.29               |
| 340.42              | 1.03                 | 1.42               | 340.95              | 1.62                 | 7.45               |
| 340.43              | 1.05                 | 1.48               | 340.96              | 1.63                 | 7.62               |
| 340.44              | 1.06                 | 1.55               | 340.97              | 1.64                 | 7.79               |
| 340.45              | 1.07                 | 1.62               | 340.98              | 1.65                 | 7.97               |
| 340.46              | 1.09                 | 1.69               | 340.99              | 1.66                 | 8.14               |
| 340.47              | 1.10                 | 1.76               | 341.00              | <b>1.66</b>          | <b>8.32</b>        |
| 340.48              | 1.11                 | 1.84               |                     |                      |                    |
| 340.49              | 1.12                 | 1.91               |                     |                      |                    |
| 340.50              | 1.14                 | 1.99               |                     |                      |                    |
| 340.51              | 1.15                 | 2.07               |                     |                      |                    |
| 340.52              | 1.16                 | 2.15               |                     |                      |                    |

**Stage-Area-Storage for Reach R8: Proposed RRv Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 340.00              | 0.0                 | 0                       | 340.53              | 1.9                 | 1,081                   |
| 340.01              | 0.0                 | 12                      | 340.54              | 2.0                 | 1,110                   |
| 340.02              | 0.0                 | 23                      | 340.55              | 2.0                 | 1,140                   |
| 340.03              | 0.1                 | 36                      | 340.56              | 2.1                 | 1,171                   |
| 340.04              | 0.1                 | 48                      | 340.57              | 2.1                 | 1,201                   |
| 340.05              | 0.1                 | 61                      | 340.58              | 2.2                 | 1,232                   |
| 340.06              | 0.1                 | 74                      | 340.59              | 2.2                 | 1,263                   |
| 340.07              | 0.2                 | 88                      | 340.60              | 2.3                 | 1,295                   |
| 340.08              | 0.2                 | 102                     | 340.61              | 2.3                 | 1,327                   |
| 340.09              | 0.2                 | 116                     | 340.62              | 2.4                 | 1,359                   |
| 340.10              | 0.2                 | 131                     | 340.63              | 2.5                 | 1,392                   |
| 340.11              | 0.3                 | 146                     | 340.64              | 2.5                 | 1,425                   |
| 340.12              | 0.3                 | 161                     | 340.65              | 2.6                 | 1,458                   |
| 340.13              | 0.3                 | 176                     | 340.66              | 2.6                 | 1,492                   |
| 340.14              | 0.3                 | 192                     | 340.67              | 2.7                 | 1,526                   |
| 340.15              | 0.4                 | 209                     | 340.68              | 2.7                 | 1,560                   |
| 340.16              | 0.4                 | 225                     | 340.69              | 2.8                 | 1,595                   |
| 340.17              | 0.4                 | 242                     | 340.70              | 2.9                 | 1,630                   |
| 340.18              | 0.5                 | 260                     | 340.71              | 2.9                 | 1,666                   |
| 340.19              | 0.5                 | 277                     | 340.72              | 3.0                 | 1,701                   |
| 340.20              | 0.5                 | 295                     | 340.73              | 3.1                 | 1,737                   |
| 340.21              | 0.6                 | 314                     | 340.74              | 3.1                 | 1,774                   |
| 340.22              | 0.6                 | 332                     | 340.75              | 3.2                 | 1,811                   |
| 340.23              | 0.6                 | 351                     | 340.76              | 3.3                 | 1,848                   |
| 340.24              | 0.7                 | 371                     | 340.77              | 3.3                 | 1,885                   |
| 340.25              | 0.7                 | 391                     | 340.78              | 3.4                 | 1,923                   |
| 340.26              | 0.7                 | 411                     | 340.79              | 3.5                 | 1,961                   |
| 340.27              | 0.8                 | 431                     | 340.80              | 3.5                 | 1,999                   |
| 340.28              | 0.8                 | 452                     | 340.81              | 3.6                 | 2,038                   |
| 340.29              | 0.8                 | 473                     | 340.82              | 3.7                 | 2,077                   |
| 340.30              | 0.9                 | 494                     | 340.83              | 3.7                 | 2,117                   |
| 340.31              | 0.9                 | 516                     | 340.84              | 3.8                 | 2,157                   |
| 340.32              | 0.9                 | 538                     | 340.85              | 3.9                 | 2,197                   |
| 340.33              | 1.0                 | 560                     | 340.86              | 3.9                 | 2,237                   |
| 340.34              | 1.0                 | 583                     | 340.87              | 4.0                 | 2,278                   |
| 340.35              | 1.1                 | 606                     | 340.88              | 4.1                 | 2,319                   |
| 340.36              | 1.1                 | 630                     | 340.89              | 4.2                 | 2,361                   |
| 340.37              | 1.2                 | 654                     | 340.90              | 4.2                 | 2,403                   |
| 340.38              | 1.2                 | 678                     | 340.91              | 4.3                 | 2,445                   |
| 340.39              | 1.2                 | 702                     | 340.92              | 4.4                 | 2,487                   |
| 340.40              | 1.3                 | 727                     | 340.93              | 4.5                 | 2,530                   |
| 340.41              | 1.3                 | 752                     | 340.94              | 4.5                 | 2,573                   |
| 340.42              | 1.4                 | 778                     | 340.95              | 4.6                 | 2,617                   |
| 340.43              | 1.4                 | 804                     | 340.96              | 4.7                 | 2,661                   |
| 340.44              | 1.5                 | 830                     | 340.97              | 4.8                 | 2,705                   |
| 340.45              | 1.5                 | 856                     | 340.98              | 4.8                 | 2,750                   |
| 340.46              | 1.6                 | 883                     | 340.99              | 4.9                 | 2,795                   |
| 340.47              | 1.6                 | 910                     | 341.00              | <b>5.0</b>          | <b>2,840</b>            |
| 340.48              | 1.7                 | 938                     |                     |                     |                         |
| 340.49              | 1.7                 | 966                     |                     |                     |                         |
| 340.50              | 1.8                 | 994                     |                     |                     |                         |
| 340.51              | 1.8                 | 1,023                   |                     |                     |                         |
| 340.52              | 1.9                 | 1,051                   |                     |                     |                         |

**Summary for Reach R9: Proposed RRV Swale**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 0.27" for WQv event  
 Inflow = 0.50 cfs @ 12.03 hrs, Volume= 0.030 af  
 Outflow = 0.16 cfs @ 12.22 hrs, Volume= 0.030 af, Atten= 68%, Lag= 11.3 min  
 Routed to Pond 6P : Proposed Stormwater Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Max. Velocity= 0.37 fps, Min. Travel Time= 34.3 min  
 Avg. Velocity = 0.12 fps, Avg. Travel Time= 104.6 min

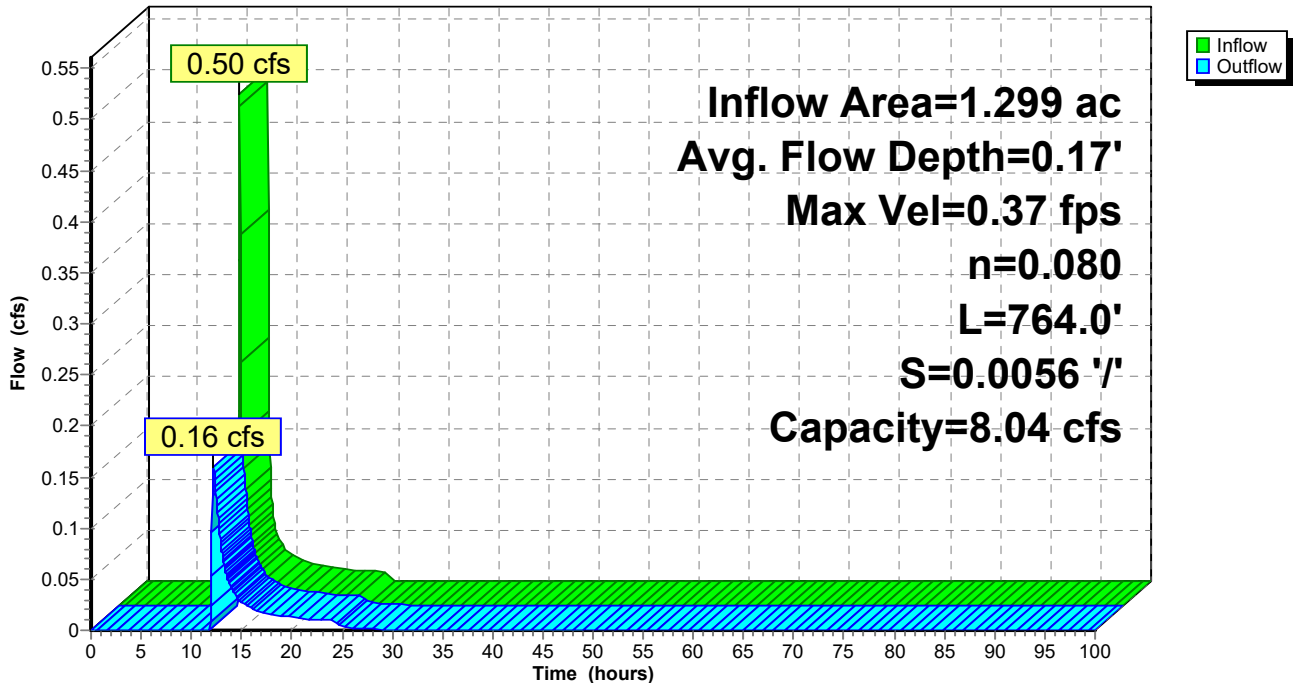
Peak Storage= 326 cf @ 12.22 hrs  
 Average Depth at Peak Storage= 0.17' , Surface Width= 3.02'  
 Bank-Full Depth= 1.25' Flow Area= 7.2 sf, Capacity= 8.04 cfs

2.00' x 1.25' deep channel, n= 0.080 Earth, long dense weeds  
 Side Slope Z-value= 3.0 ' / ' Top Width= 9.50'  
 Length= 764.0' Slope= 0.0056 ' / '  
 Inlet Invert= 337.00', Outlet Invert= 332.75'

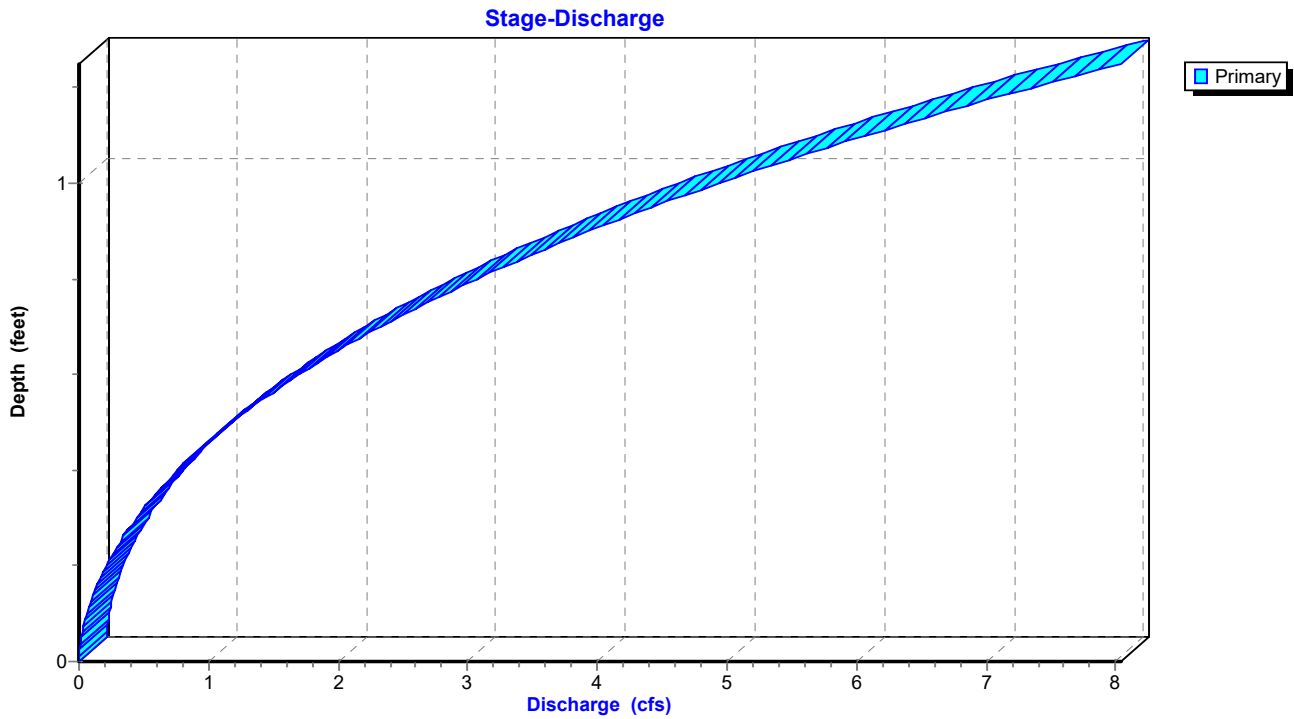


**Reach R9: Proposed RRV Swale**

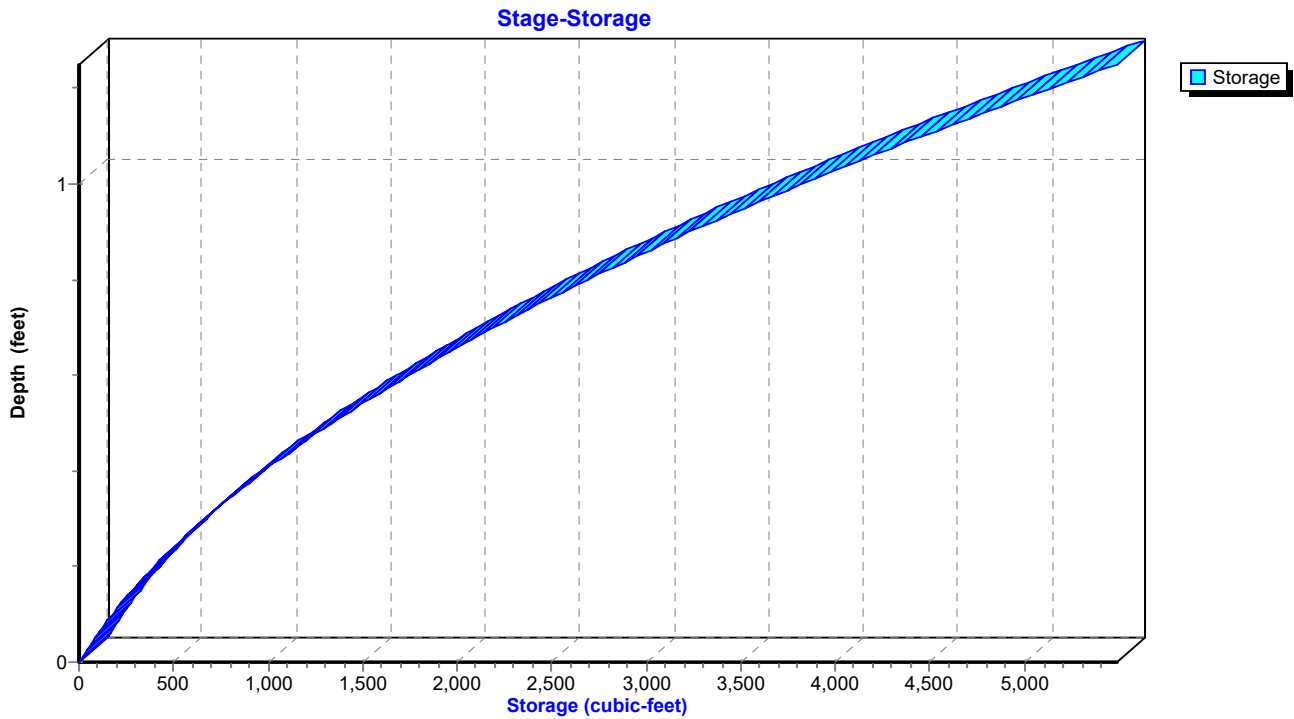
Hydrograph



### Reach R9: Proposed RRV Swale



### Reach R9: Proposed RRV Swale



**Hydrograph for Reach R9: Proposed RRV Swale**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) |
|--------------|--------------|----------------------|------------------|---------------|
| 0.00         | 0.00         | 0                    | 337.00           | 0.00          |
| 2.50         | 0.00         | 0                    | 337.00           | 0.00          |
| 5.00         | 0.00         | 0                    | 337.00           | 0.00          |
| 7.50         | 0.00         | 0                    | 337.00           | 0.00          |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>337.00</b>    | <b>0.00</b>   |
| 12.50        | <b>0.08</b>  | <b>282</b>           | <b>337.15</b>    | <b>0.13</b>   |
| 15.00        | 0.02         | 104                  | 337.06           | 0.03          |
| 17.50        | 0.02         | 76                   | 337.05           | 0.02          |
| 20.00        | 0.01         | 62                   | 337.04           | 0.01          |
| 22.50        | 0.01         | 55                   | 337.03           | 0.01          |
| 25.00        | 0.00         | 33                   | 337.02           | 0.00          |
| 27.50        | 0.00         | 12                   | 337.01           | 0.00          |
| 30.00        | 0.00         | 5                    | 337.00           | 0.00          |
| 32.50        | 0.00         | 2                    | 337.00           | 0.00          |
| 35.00        | 0.00         | 1                    | 337.00           | 0.00          |
| 37.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 40.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 42.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 45.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 47.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 50.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 52.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 55.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 57.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 60.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 62.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 65.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 67.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 70.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 72.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 75.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 77.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 80.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 82.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 85.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 87.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 90.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 92.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 95.00        | 0.00         | 0                    | 337.00           | 0.00          |
| 97.50        | 0.00         | 0                    | 337.00           | 0.00          |
| 100.00       | 0.00         | 0                    | 337.00           | 0.00          |

**Stage-Discharge for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) | Elevation<br>(feet) | Velocity<br>(ft/sec) | Discharge<br>(cfs) |
|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|--------------------|
| 337.00              | 0.00                 | 0.00               | 337.53              | 0.70                 | 1.32               | 338.06              | 1.02                 | 5.60               |
| 337.01              | 0.06                 | 0.00               | 337.54              | 0.70                 | 1.37               | 338.07              | 1.02                 | 5.71               |
| 337.02              | 0.10                 | 0.00               | 337.55              | 0.71                 | 1.42               | 338.08              | 1.03                 | 5.83               |
| 337.03              | 0.13                 | 0.01               | 337.56              | 0.72                 | 1.48               | 338.09              | 1.04                 | 5.95               |
| 337.04              | 0.16                 | 0.01               | 337.57              | 0.72                 | 1.53               | 338.10              | 1.04                 | 6.07               |
| 337.05              | 0.18                 | 0.02               | 337.58              | 0.73                 | 1.58               | 338.11              | 1.05                 | 6.19               |
| 337.06              | 0.20                 | 0.03               | 337.59              | 0.74                 | 1.64               | 338.12              | 1.05                 | 6.31               |
| 337.07              | 0.22                 | 0.03               | 337.60              | 0.74                 | 1.70               | 338.13              | 1.06                 | 6.43               |
| 337.08              | 0.24                 | 0.04               | 337.61              | 0.75                 | 1.75               | 338.14              | 1.06                 | 6.56               |
| 337.09              | 0.26                 | 0.05               | 337.62              | 0.76                 | 1.81               | 338.15              | 1.07                 | 6.69               |
| 337.10              | 0.27                 | 0.06               | 337.63              | 0.76                 | 1.87               | 338.16              | 1.07                 | 6.82               |
| 337.11              | 0.29                 | 0.07               | 337.64              | 0.77                 | 1.93               | 338.17              | 1.08                 | 6.95               |
| 337.12              | 0.30                 | 0.09               | 337.65              | 0.78                 | 2.00               | 338.18              | 1.08                 | 7.08               |
| 337.13              | 0.32                 | 0.10               | 337.66              | 0.78                 | 2.06               | 338.19              | 1.09                 | 7.21               |
| 337.14              | 0.33                 | 0.11               | 337.67              | 0.79                 | 2.12               | 338.20              | 1.09                 | 7.35               |
| 337.15              | 0.35                 | 0.13               | 337.68              | 0.80                 | 2.19               | 338.21              | 1.10                 | 7.48               |
| 337.16              | 0.36                 | 0.14               | 337.69              | 0.80                 | 2.26               | 338.22              | 1.10                 | 7.62               |
| 337.17              | 0.37                 | 0.16               | 337.70              | 0.81                 | 2.32               | 338.23              | 1.11                 | 7.76               |
| 337.18              | 0.38                 | 0.18               | 337.71              | 0.82                 | 2.39               | 338.24              | 1.11                 | 7.90               |
| 337.19              | 0.40                 | 0.19               | 337.72              | 0.82                 | 2.46               | 338.25              | <b>1.12</b>          | <b>8.04</b>        |
| 337.20              | 0.41                 | 0.21               | 337.73              | 0.83                 | 2.53               |                     |                      |                    |
| 337.21              | 0.42                 | 0.23               | 337.74              | 0.83                 | 2.61               |                     |                      |                    |
| 337.22              | 0.43                 | 0.25               | 337.75              | 0.84                 | 2.68               |                     |                      |                    |
| 337.23              | 0.44                 | 0.27               | 337.76              | 0.85                 | 2.75               |                     |                      |                    |
| 337.24              | 0.45                 | 0.29               | 337.77              | 0.85                 | 2.83               |                     |                      |                    |
| 337.25              | 0.46                 | 0.32               | 337.78              | 0.86                 | 2.91               |                     |                      |                    |
| 337.26              | 0.47                 | 0.34               | 337.79              | 0.87                 | 2.99               |                     |                      |                    |
| 337.27              | 0.48                 | 0.37               | 337.80              | 0.87                 | 3.07               |                     |                      |                    |
| 337.28              | 0.49                 | 0.39               | 337.81              | 0.88                 | 3.15               |                     |                      |                    |
| 337.29              | 0.50                 | 0.42               | 337.82              | 0.88                 | 3.23               |                     |                      |                    |
| 337.30              | 0.51                 | 0.44               | 337.83              | 0.89                 | 3.31               |                     |                      |                    |
| 337.31              | 0.52                 | 0.47               | 337.84              | 0.89                 | 3.40               |                     |                      |                    |
| 337.32              | 0.53                 | 0.50               | 337.85              | 0.90                 | 3.48               |                     |                      |                    |
| 337.33              | 0.54                 | 0.53               | 337.86              | 0.91                 | 3.57               |                     |                      |                    |
| 337.34              | 0.55                 | 0.56               | 337.87              | 0.91                 | 3.66               |                     |                      |                    |
| 337.35              | 0.55                 | 0.59               | 337.88              | 0.92                 | 3.75               |                     |                      |                    |
| 337.36              | 0.56                 | 0.62               | 337.89              | 0.92                 | 3.84               |                     |                      |                    |
| 337.37              | 0.57                 | 0.66               | 337.90              | 0.93                 | 3.93               |                     |                      |                    |
| 337.38              | 0.58                 | 0.69               | 337.91              | 0.94                 | 4.03               |                     |                      |                    |
| 337.39              | 0.59                 | 0.73               | 337.92              | 0.94                 | 4.12               |                     |                      |                    |
| 337.40              | 0.60                 | 0.76               | 337.93              | 0.95                 | 4.22               |                     |                      |                    |
| 337.41              | 0.60                 | 0.80               | 337.94              | 0.95                 | 4.32               |                     |                      |                    |
| 337.42              | 0.61                 | 0.84               | 337.95              | 0.96                 | 4.42               |                     |                      |                    |
| 337.43              | 0.62                 | 0.88               | 337.96              | 0.96                 | 4.52               |                     |                      |                    |
| 337.44              | 0.63                 | 0.92               | 337.97              | 0.97                 | 4.62               |                     |                      |                    |
| 337.45              | 0.64                 | 0.96               | 337.98              | 0.98                 | 4.72               |                     |                      |                    |
| 337.46              | 0.64                 | 1.00               | 337.99              | 0.98                 | 4.83               |                     |                      |                    |
| 337.47              | 0.65                 | 1.04               | 338.00              | 0.99                 | 4.93               |                     |                      |                    |
| 337.48              | 0.66                 | 1.09               | 338.01              | 0.99                 | 5.04               |                     |                      |                    |
| 337.49              | 0.67                 | 1.13               | 338.02              | 1.00                 | 5.15               |                     |                      |                    |
| 337.50              | 0.67                 | 1.18               | 338.03              | 1.00                 | 5.26               |                     |                      |                    |
| 337.51              | 0.68                 | 1.23               | 338.04              | 1.01                 | 5.37               |                     |                      |                    |
| 337.52              | 0.69                 | 1.27               | 338.05              | 1.01                 | 5.48               |                     |                      |                    |



**Stage-Area-Storage for Reach R9: Proposed RRV Swale**

| Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | End-Area<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|---------------------|-------------------------|---------------------|---------------------|-------------------------|
| 337.00              | 0.0                 | 0                       | 338.06              | 5.5                 | 4,195                   |
| 337.02              | 0.0                 | 32                      | 338.08              | 5.7                 | 4,324                   |
| 337.04              | 0.1                 | 65                      | 338.10              | 5.8                 | 4,454                   |
| 337.06              | 0.1                 | 100                     | 338.12              | 6.0                 | 4,587                   |
| 337.08              | 0.2                 | 137                     | 338.14              | 6.2                 | 4,721                   |
| 337.10              | 0.2                 | 176                     | 338.16              | 6.4                 | 4,857                   |
| 337.12              | 0.3                 | 216                     | 338.18              | 6.5                 | 4,995                   |
| 337.14              | 0.3                 | 259                     | 338.20              | 6.7                 | 5,134                   |
| 337.16              | 0.4                 | 303                     | 338.22              | 6.9                 | 5,276                   |
| 337.18              | 0.5                 | 349                     | 338.24              | <b>7.1</b>          | <b>5,419</b>            |
| 337.20              | 0.5                 | 397                     |                     |                     |                         |
| 337.22              | 0.6                 | 447                     |                     |                     |                         |
| 337.24              | 0.7                 | 499                     |                     |                     |                         |
| 337.26              | 0.7                 | 552                     |                     |                     |                         |
| 337.28              | 0.8                 | 608                     |                     |                     |                         |
| 337.30              | 0.9                 | 665                     |                     |                     |                         |
| 337.32              | 0.9                 | 724                     |                     |                     |                         |
| 337.34              | 1.0                 | 785                     |                     |                     |                         |
| 337.36              | 1.1                 | 847                     |                     |                     |                         |
| 337.38              | 1.2                 | 912                     |                     |                     |                         |
| 337.40              | 1.3                 | 978                     |                     |                     |                         |
| 337.42              | 1.4                 | 1,046                   |                     |                     |                         |
| 337.44              | 1.5                 | 1,116                   |                     |                     |                         |
| 337.46              | 1.6                 | 1,188                   |                     |                     |                         |
| 337.48              | 1.7                 | 1,262                   |                     |                     |                         |
| 337.50              | 1.8                 | 1,337                   |                     |                     |                         |
| 337.52              | 1.9                 | 1,414                   |                     |                     |                         |
| 337.54              | 2.0                 | 1,494                   |                     |                     |                         |
| 337.56              | 2.1                 | 1,575                   |                     |                     |                         |
| 337.58              | 2.2                 | 1,657                   |                     |                     |                         |
| 337.60              | 2.3                 | 1,742                   |                     |                     |                         |
| 337.62              | 2.4                 | 1,828                   |                     |                     |                         |
| 337.64              | 2.5                 | 1,917                   |                     |                     |                         |
| 337.66              | 2.6                 | 2,007                   |                     |                     |                         |
| 337.68              | 2.7                 | 2,099                   |                     |                     |                         |
| 337.70              | 2.9                 | 2,193                   |                     |                     |                         |
| 337.72              | 3.0                 | 2,288                   |                     |                     |                         |
| 337.74              | 3.1                 | 2,386                   |                     |                     |                         |
| 337.76              | 3.3                 | 2,485                   |                     |                     |                         |
| 337.78              | 3.4                 | 2,586                   |                     |                     |                         |
| 337.80              | 3.5                 | 2,689                   |                     |                     |                         |
| 337.82              | 3.7                 | 2,794                   |                     |                     |                         |
| 337.84              | 3.8                 | 2,901                   |                     |                     |                         |
| 337.86              | 3.9                 | 3,009                   |                     |                     |                         |
| 337.88              | 4.1                 | 3,120                   |                     |                     |                         |
| 337.90              | 4.2                 | 3,232                   |                     |                     |                         |
| 337.92              | 4.4                 | 3,346                   |                     |                     |                         |
| 337.94              | 4.5                 | 3,462                   |                     |                     |                         |
| 337.96              | 4.7                 | 3,579                   |                     |                     |                         |
| 337.98              | 4.8                 | 3,699                   |                     |                     |                         |
| 338.00              | 5.0                 | 3,820                   |                     |                     |                         |
| 338.02              | 5.2                 | 3,943                   |                     |                     |                         |
| 338.04              | 5.3                 | 4,068                   |                     |                     |                         |

**Summary for Pond 4P: Proposed Stormwater Pond**

Inflow Area = 10.222 ac, 13.62% Impervious, Inflow Depth = 0.00" for WQv event  
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach R12 : 12" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 337.00' Surf.Area= 1,864 sf Storage= 1,362 cf  
 Peak Elev= 337.00' @ 0.00 hrs Surf.Area= 1,864 sf Storage= 1,362 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no inflow)

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 338.50' | 5,344 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 335.00' | 3,537 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 334.50' | 1,862 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 10,742 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 338.50           | 3,608             | 353.0         | 0                      | 0                      | 3,608            |
| 339.00           | 4,127             | 266.0         | 1,932                  | 1,932                  | 7,896            |
| 339.75           | 4,983             | 287.0         | 3,411                  | 5,344                  | 8,843            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 335.00           | 29                | 23.0          | 0                      | 0                      | 29               |
| 336.00           | 189               | 66.0          | 97                     | 97                     | 337              |
| 337.00           | 1,332             | 155.0         | 674                    | 772                    | 1,906            |
| 338.00           | 2,017             | 182.0         | 1,663                  | 2,434                  | 2,649            |
| 338.50           | 2,399             | 200.0         | 1,103                  | 3,537                  | 3,205            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 334.50           | 3                 | 7.6           | 0                      | 0                      | 3                |
| 335.00           | 83                | 48.0          | 17                     | 17                     | 182              |
| 336.00           | 282               | 74.0          | 173                    | 190                    | 442              |
| 337.00           | 532               | 93.0          | 400                    | 590                    | 708              |
| 338.00           | 953               | 118.0         | 732                    | 1,322                  | 1,141            |
| 338.50           | 1,209             | 136.0         | 539                    | 1,862                  | 1,510            |

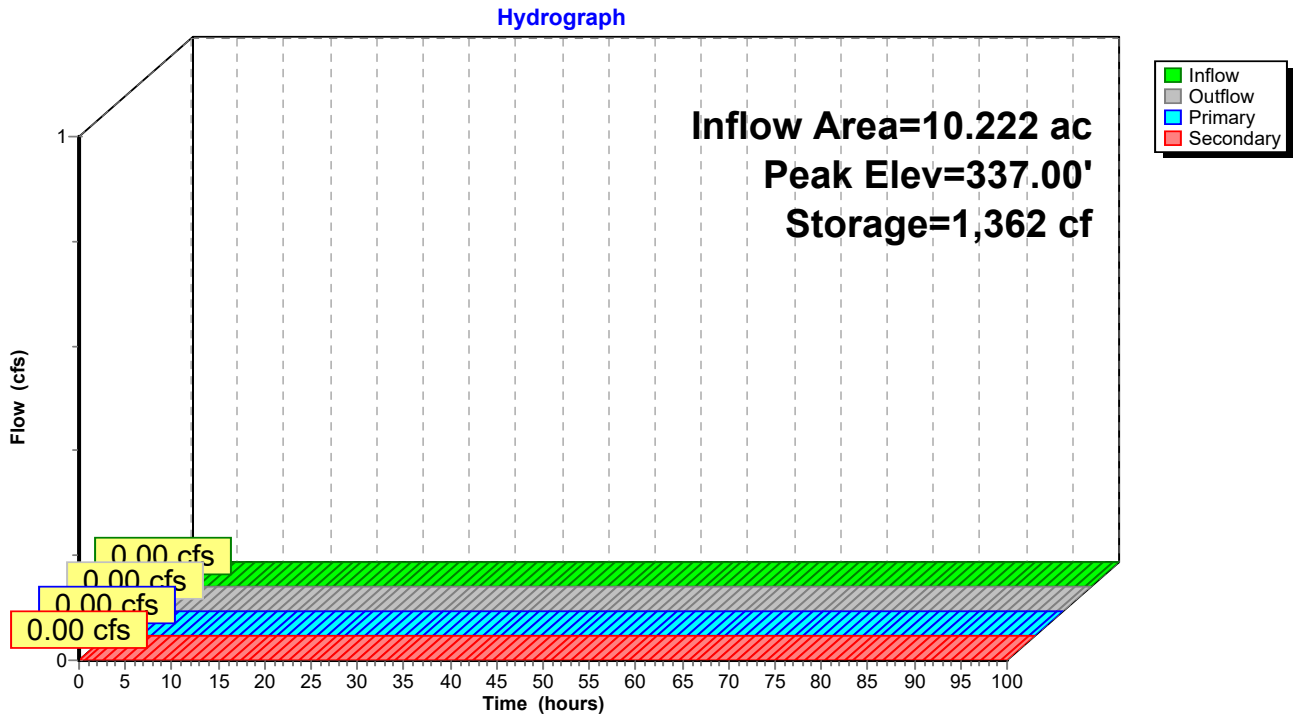
| Device | Routing   | Invert  | Outlet Devices   |
|--------|-----------|---------|--|
| #1     | Secondary | 338.50' | <b>26.0' long x 17.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2     | Primary   | 338.50' | <b>12.0" Horiz. Orifice/Grate</b> C= 0.600   |

|    |         |         |                                   |          |                                   |
|----|---------|---------|-----------------------------------|----------|-----------------------------------|
|    |         |         | Limited to weir flow at low heads |          |                                   |
| #3 | Primary | 337.86' | <b>6.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |
| #4 | Primary | 337.00' | <b>3.0" Vert. Orifice/Grate</b>   | C= 0.600 | Limited to weir flow at low heads |

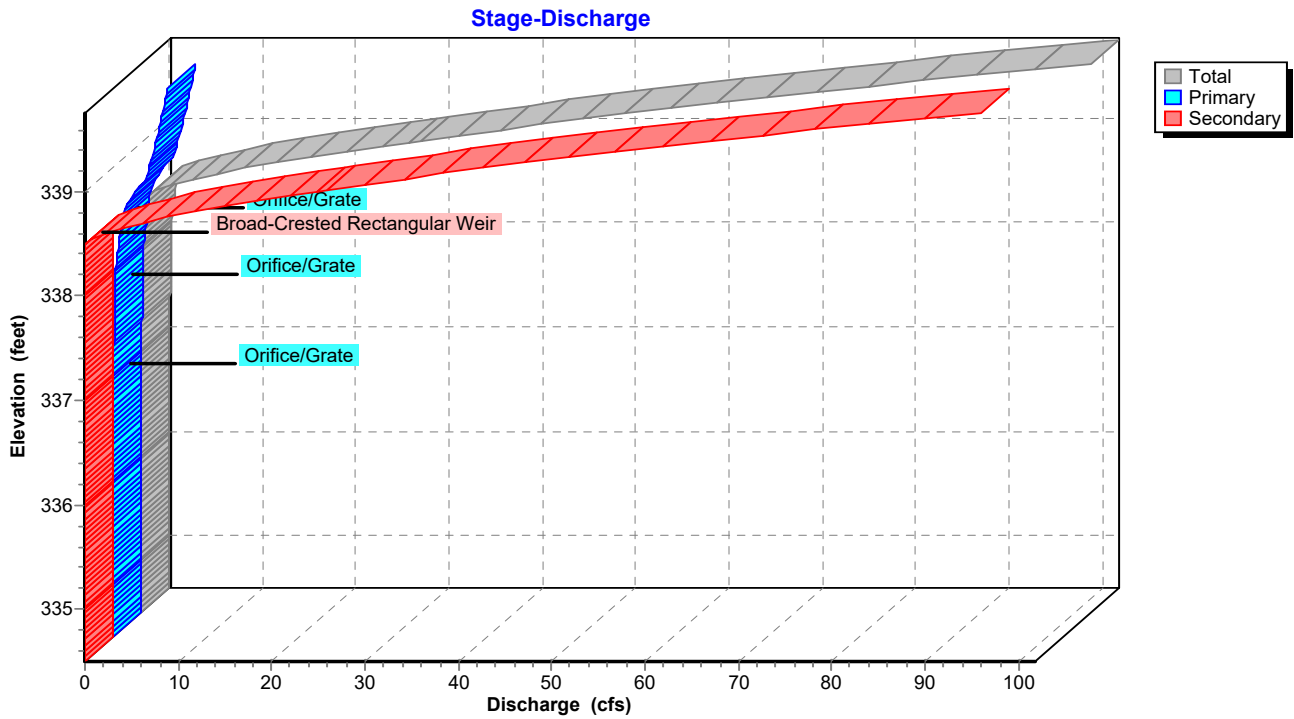
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=337.00' TW=337.01' (Dynamic Tailwater)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **3=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **4=Orifice/Grate** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=337.00' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

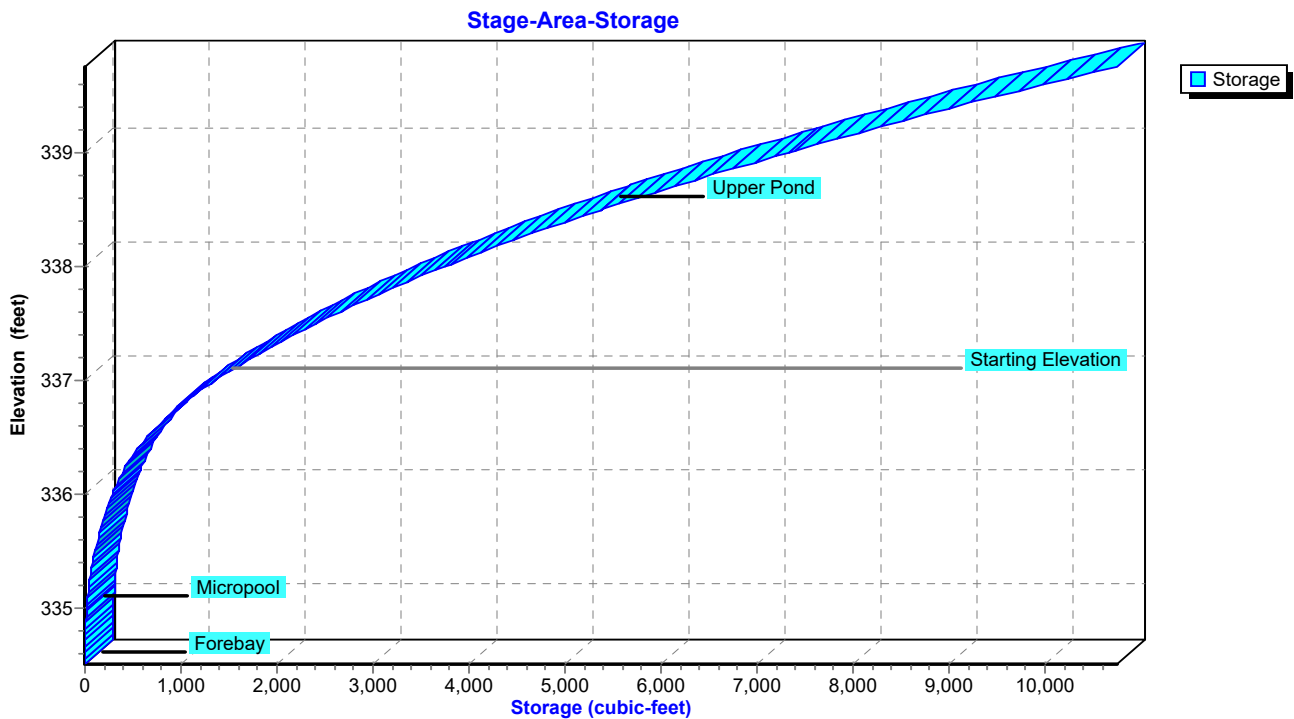
**Pond 4P: Proposed Stormwater Pond**



### Pond 4P: Proposed Stormwater Pond



### Pond 4P: Proposed Stormwater Pond



**Hydrograph for Pond 4P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 2.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 10.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 12.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 15.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 17.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 20.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 22.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 25.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 27.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 30.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 32.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 35.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 37.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 40.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 42.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 45.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 47.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 50.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 52.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,362                | 337.00           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 334.50              | 0.00               | 0.00             | 0.00               | 337.15              | 0.04               | 0.04             | 0.00               |
| 334.55              | 0.00               | 0.00             | 0.00               | 337.20              | 0.06               | 0.06             | 0.00               |
| 334.60              | 0.00               | 0.00             | 0.00               | 337.25              | 0.08               | 0.08             | 0.00               |
| 334.65              | 0.00               | 0.00             | 0.00               | 337.30              | 0.10               | 0.10             | 0.00               |
| 334.70              | 0.00               | 0.00             | 0.00               | 337.35              | 0.11               | 0.11             | 0.00               |
| 334.75              | 0.00               | 0.00             | 0.00               | 337.40              | 0.12               | 0.12             | 0.00               |
| 334.80              | 0.00               | 0.00             | 0.00               | 337.45              | 0.13               | 0.13             | 0.00               |
| 334.85              | 0.00               | 0.00             | 0.00               | 337.50              | 0.14               | 0.14             | 0.00               |
| 334.90              | 0.00               | 0.00             | 0.00               | 337.55              | 0.15               | 0.15             | 0.00               |
| 334.95              | 0.00               | 0.00             | 0.00               | 337.60              | 0.16               | 0.16             | 0.00               |
| 335.00              | 0.00               | 0.00             | 0.00               | 337.65              | 0.17               | 0.17             | 0.00               |
| 335.05              | 0.00               | 0.00             | 0.00               | 337.70              | 0.18               | 0.18             | 0.00               |
| 335.10              | 0.00               | 0.00             | 0.00               | 337.75              | 0.19               | 0.19             | 0.00               |
| 335.15              | 0.00               | 0.00             | 0.00               | 337.80              | 0.19               | 0.19             | 0.00               |
| 335.20              | 0.00               | 0.00             | 0.00               | 337.85              | 0.20               | 0.20             | 0.00               |
| 335.25              | 0.00               | 0.00             | 0.00               | 337.90              | 0.21               | 0.21             | 0.00               |
| 335.30              | 0.00               | 0.00             | 0.00               | 337.95              | 0.24               | 0.24             | 0.00               |
| 335.35              | 0.00               | 0.00             | 0.00               | 338.00              | 0.28               | 0.28             | 0.00               |
| 335.40              | 0.00               | 0.00             | 0.00               | 338.05              | 0.33               | 0.33             | 0.00               |
| 335.45              | 0.00               | 0.00             | 0.00               | 338.10              | 0.39               | 0.39             | 0.00               |
| 335.50              | 0.00               | 0.00             | 0.00               | 338.15              | 0.46               | 0.46             | 0.00               |
| 335.55              | 0.00               | 0.00             | 0.00               | 338.20              | 0.53               | 0.53             | 0.00               |
| 335.60              | 0.00               | 0.00             | 0.00               | 338.25              | 0.60               | 0.60             | 0.00               |
| 335.65              | 0.00               | 0.00             | 0.00               | 338.30              | 0.67               | 0.67             | 0.00               |
| 335.70              | 0.00               | 0.00             | 0.00               | 338.35              | 0.73               | 0.73             | 0.00               |
| 335.75              | 0.00               | 0.00             | 0.00               | 338.40              | 0.78               | 0.78             | 0.00               |
| 335.80              | 0.00               | 0.00             | 0.00               | 338.45              | 0.82               | 0.82             | 0.00               |
| 335.85              | 0.00               | 0.00             | 0.00               | 338.50              | 0.87               | 0.87             | 0.00               |
| 335.90              | 0.00               | 0.00             | 0.00               | 338.55              | 1.80               | 1.02             | 0.78               |
| 335.95              | 0.00               | 0.00             | 0.00               | 338.60              | 3.48               | 1.27             | 2.20               |
| 336.00              | 0.00               | 0.00             | 0.00               | 338.65              | 5.63               | 1.58             | 4.05               |
| 336.05              | 0.00               | 0.00             | 0.00               | 338.70              | 8.17               | 1.94             | 6.23               |
| 336.10              | 0.00               | 0.00             | 0.00               | 338.75              | 11.07              | 2.34             | 8.73               |
| 336.15              | 0.00               | 0.00             | 0.00               | 338.80              | 14.27              | 2.78             | 11.49              |
| 336.20              | 0.00               | 0.00             | 0.00               | 338.85              | 17.76              | 3.25             | 14.51              |
| 336.25              | 0.00               | 0.00             | 0.00               | 338.90              | 21.31              | 3.55             | 17.76              |
| 336.30              | 0.00               | 0.00             | 0.00               | 338.95              | 24.91              | 3.72             | 21.19              |
| 336.35              | 0.00               | 0.00             | 0.00               | 339.00              | 28.71              | 3.89             | 24.82              |
| 336.40              | 0.00               | 0.00             | 0.00               | 339.05              | 32.68              | 4.05             | 28.63              |
| 336.45              | 0.00               | 0.00             | 0.00               | 339.10              | 36.83              | 4.20             | 32.63              |
| 336.50              | 0.00               | 0.00             | 0.00               | 339.15              | 40.93              | 4.35             | 36.58              |
| 336.55              | 0.00               | 0.00             | 0.00               | 339.20              | 45.15              | 4.49             | 40.66              |
| 336.60              | 0.00               | 0.00             | 0.00               | 339.25              | 49.47              | 4.63             | 44.84              |
| 336.65              | 0.00               | 0.00             | 0.00               | 339.30              | 53.88              | 4.76             | 49.11              |
| 336.70              | 0.00               | 0.00             | 0.00               | 339.35              | 58.63              | 4.89             | 53.74              |
| 336.75              | 0.00               | 0.00             | 0.00               | 339.40              | 63.51              | 5.02             | 58.49              |
| 336.80              | 0.00               | 0.00             | 0.00               | 339.45              | 68.52              | 5.14             | 63.38              |
| 336.85              | 0.00               | 0.00             | 0.00               | 339.50              | 73.64              | 5.26             | 68.38              |
| 336.90              | 0.00               | 0.00             | 0.00               | 339.55              | 79.02              | 5.38             | 73.64              |
| 336.95              | 0.00               | 0.00             | 0.00               | 339.60              | 84.53              | 5.49             | 79.04              |
| 337.00              | 0.00               | 0.00             | 0.00               | 339.65              | 90.17              | 5.60             | 84.57              |
| 337.05              | 0.01               | 0.01             | 0.00               | 339.70              | 95.94              | 5.71             | 90.23              |
| 337.10              | 0.02               | 0.02             | 0.00               | 339.75              | <b>101.75</b>      | <b>5.82</b>      | <b>95.93</b>       |

**Stage-Area-Storage for Pond 4P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 334.50              | 0                       | 337.15              | 1,652                   |
| 334.55              | 0                       | 337.20              | 1,754                   |
| 334.60              | 1                       | 337.25              | 1,859                   |
| 334.65              | 1                       | 337.30              | 1,966                   |
| 334.70              | 2                       | 337.35              | 2,076                   |
| 334.75              | 3                       | 337.40              | 2,188                   |
| 334.80              | 5                       | 337.45              | 2,303                   |
| 334.85              | 7                       | 337.50              | 2,421                   |
| 334.90              | 10                      | 337.55              | 2,542                   |
| 334.95              | 13                      | 337.60              | 2,665                   |
| 335.00              | 17                      | 337.65              | 2,791                   |
| 335.05              | 23                      | 337.70              | 2,920                   |
| 335.10              | 29                      | 337.75              | 3,052                   |
| 335.15              | 36                      | 337.80              | 3,187                   |
| 335.20              | 44                      | 337.85              | 3,325                   |
| 335.25              | 53                      | 337.90              | 3,466                   |
| 335.30              | 62                      | 337.95              | 3,610                   |
| 335.35              | 72                      | 338.00              | 3,757                   |
| 335.40              | 83                      | 338.05              | 3,907                   |
| 335.45              | 95                      | 338.10              | 4,060                   |
| 335.50              | 107                     | 338.15              | 4,216                   |
| 335.55              | 121                     | 338.20              | 4,375                   |
| 335.60              | 135                     | 338.25              | 4,538                   |
| 335.65              | 150                     | 338.30              | 4,703                   |
| 335.70              | 166                     | 338.35              | 4,872                   |
| 335.75              | 184                     | 338.40              | 5,044                   |
| 335.80              | 202                     | 338.45              | 5,220                   |
| 335.85              | 222                     | 338.50              | 5,399                   |
| 335.90              | 242                     | 338.55              | 5,580                   |
| 335.95              | 264                     | 338.60              | 5,764                   |
| 336.00              | 287                     | 338.65              | 5,951                   |
| 336.05              | 312                     | 338.70              | 6,140                   |
| 336.10              | 338                     | 338.75              | 6,332                   |
| 336.15              | 368                     | 338.80              | 6,527                   |
| 336.20              | 399                     | 338.85              | 6,724                   |
| 336.25              | 434                     | 338.90              | 6,923                   |
| 336.30              | 471                     | 338.95              | 7,126                   |
| 336.35              | 511                     | 339.00              | 7,331                   |
| 336.40              | 554                     | 339.05              | 7,539                   |
| 336.45              | 600                     | 339.10              | 7,749                   |
| 336.50              | 650                     | 339.15              | 7,962                   |
| 336.55              | 703                     | 339.20              | 8,178                   |
| 336.60              | 760                     | 339.25              | 8,397                   |
| 336.65              | 821                     | 339.30              | 8,619                   |
| 336.70              | 885                     | 339.35              | 8,843                   |
| 336.75              | 954                     | 339.40              | 9,070                   |
| 336.80              | 1,026                   | 339.45              | 9,300                   |
| 336.85              | 1,103                   | 339.50              | 9,533                   |
| 336.90              | 1,185                   | 339.55              | 9,769                   |
| 336.95              | 1,271                   | 339.60              | 10,008                  |
| 337.00              | 1,362                   | 339.65              | 10,250                  |
| 337.05              | 1,456                   | 339.70              | 10,494                  |
| 337.10              | 1,553                   | 339.75              | <b>10,742</b>           |

**Summary for Pond 5P: Proposed Infiltration Basin**

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.20" for WQv event  
 Inflow = 1.36 cfs @ 12.20 hrs, Volume= 0.126 af  
 Outflow = 1.36 cfs @ 12.21 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.2 min  
 Discarded = 1.36 cfs @ 12.21 hrs, Volume= 0.126 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Primary area = Inflow area x 0.000  
 Peak Elev= 325.51' @ 12.21 hrs Surf.Area= 1,210 sf Storage= 18 cf

Plug-Flow detention time= 0.2 min calculated for 0.126 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 904.3 - 904.1 )

| Volume | Invert  | Avail.Storage | Storage Description   |
|--------|---------|---------------|---|
| #1     | 330.50' | 10,455 cf     | <b>Upper Pond (Irregular)</b> Listed below (Recalc) -Impervious |
| #2     | 325.50' | 11,031 cf     | <b>Micropool (Irregular)</b> Listed below (Recalc)              |
| #3     | 325.50' | 6,296 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)                |
|        |         | 27,781 cf     | Total Available Storage   |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 330.50           | 6,557             | 358.9         | 0                      | 0                      | 6,557            |
| 331.00           | 7,966             | 544.5         | 3,625                  | 3,625                  | 19,902           |
| 331.75           | 10,297            | 768.6         | 6,830                  | 10,455                 | 43,324           |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 906               | 129.8         | 0                      | 0                      | 906              |
| 326.00           | 1,122             | 143.2         | 506                    | 506                    | 1,205            |
| 327.00           | 1,594             | 165.7         | 1,351                  | 1,857                  | 1,779            |
| 328.00           | 2,135             | 187.0         | 1,858                  | 3,715                  | 2,403            |
| 329.00           | 2,732             | 208.0         | 2,427                  | 6,142                  | 3,092            |
| 330.00           | 3,382             | 226.7         | 3,051                  | 9,194                  | 3,774            |
| 330.50           | 3,974             | 250.8         | 1,837                  | 11,031                 | 4,697            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 325.50           | 295               | 81.6          | 0                      | 0                      | 295              |
| 326.00           | 426               | 92.6          | 179                    | 179                    | 454              |
| 327.00           | 755               | 119.2         | 583                    | 762                    | 914              |
| 328.00           | 1,185             | 151.4         | 962                    | 1,724                  | 1,621            |
| 329.00           | 1,678             | 173.2         | 1,424                  | 3,148                  | 2,207            |
| 330.00           | 2,227             | 192.4         | 1,946                  | 5,094                  | 2,794            |
| 330.50           | 2,583             | 209.3         | 1,201                  | 6,296                  | 3,344            |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.25' | <b>10.0' long x 13.2' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |

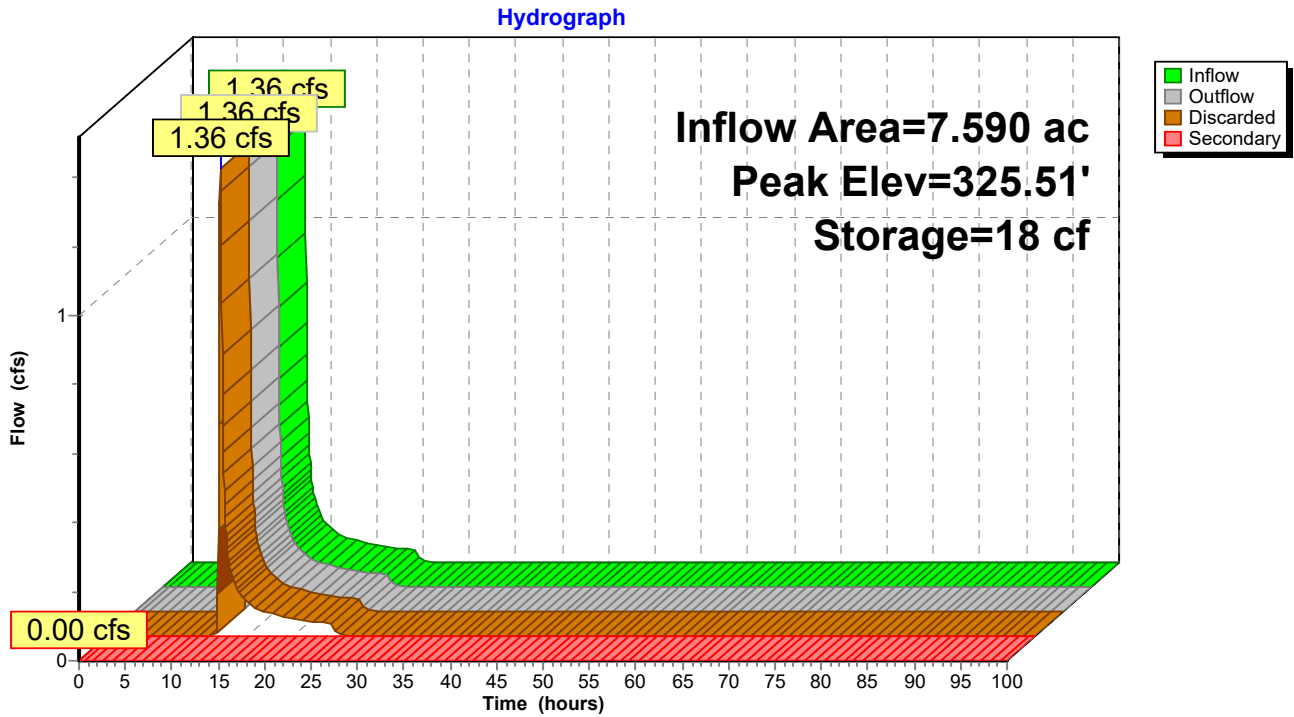


#2 Discarded 325.50' **100.00 in/hr Exfiltration over Horizontal area** Phase-In= 0.03'  
 Coef. (English) 2.61 2.65 2.70 2.66 2.65 2.66 2.65 2.63

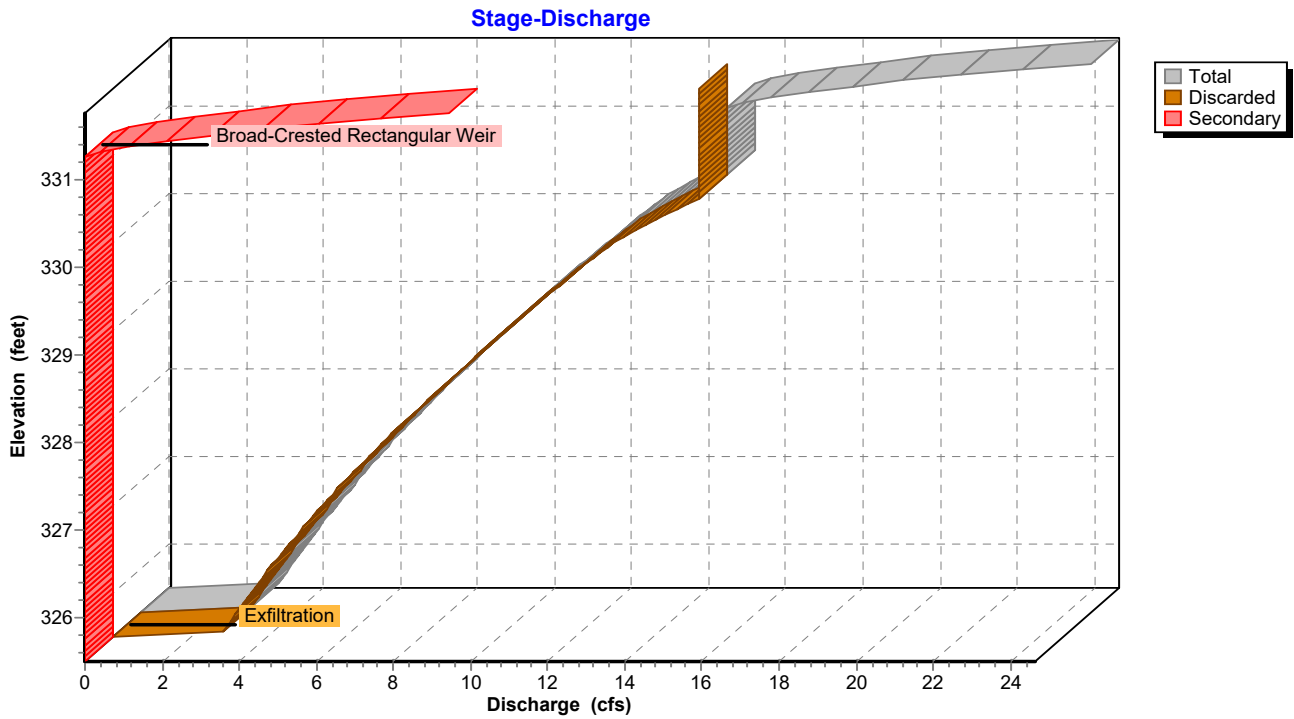
**Discarded OutFlow** Max=1.35 cfs @ 12.21 hrs HW=325.51' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 1.35 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=325.50' TW=0.00' (Dynamic Tailwater)  
 ↳1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

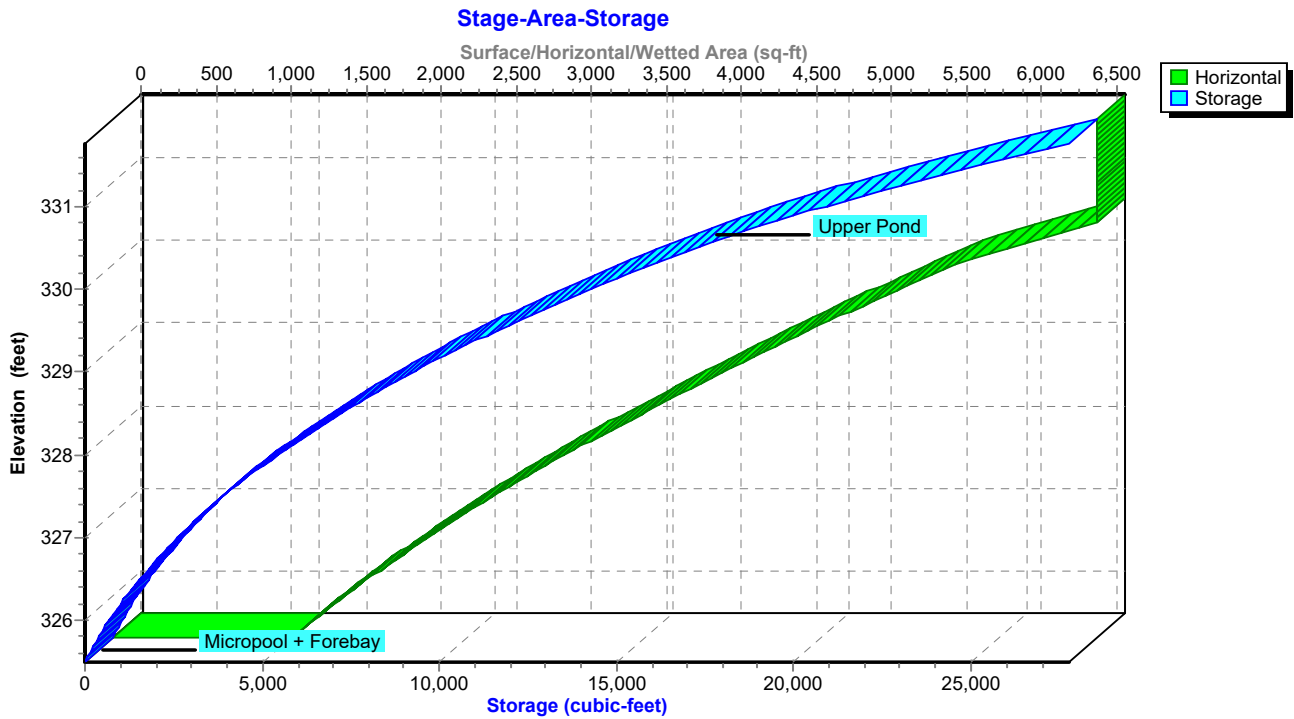
**Pond 5P: Proposed Infiltration Basin**



### Pond 5P: Proposed Infiltration Basin



### Pond 5P: Proposed Infiltration Basin



**Hydrograph for Pond 5P: Proposed Infiltration Basin**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Discarded (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|-----------------|-----------------|
| 0.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | <b>0.00</b>     |
| 2.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 5.00         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 7.50         | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 10.00        | <b>0.00</b>  | <b>0</b>             | <b>325.50</b>    | <b>0.00</b>   | <b>0.00</b>     | 0.00            |
| 12.50        | <b>0.60</b>  | <b>8</b>             | <b>325.51</b>    | <b>0.61</b>   | <b>0.61</b>     | 0.00            |
| 15.00        | 0.10         | 1                    | 325.50           | 0.10          | 0.10            | 0.00            |
| 17.50        | 0.07         | 1                    | 325.50           | 0.07          | 0.07            | 0.00            |
| 20.00        | 0.05         | 1                    | 325.50           | 0.05          | 0.05            | 0.00            |
| 22.50        | 0.04         | 1                    | 325.50           | 0.04          | 0.04            | 0.00            |
| 25.00        | 0.01         | 0                    | 325.50           | 0.01          | 0.01            | 0.00            |
| 27.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 30.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 32.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 35.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 37.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 40.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 42.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 45.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 47.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 50.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 52.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 55.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 57.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 60.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 62.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 65.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 67.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 70.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 72.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 75.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 77.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 80.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 82.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 85.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 87.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 90.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 92.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 95.00        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 97.50        | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |
| 100.00       | 0.00         | 0                    | 325.50           | 0.00          | 0.00            | 0.00            |

**Stage-Discharge for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Discarded<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| 325.50              | 0.00               | 0.00               | 0.00               | 330.80              | 15.18              | 15.18              | 0.00               |
| 325.60              | 2.93               | 2.93               | 0.00               | 330.90              | 15.18              | 15.18              | 0.00               |
| 325.70              | 3.09               | 3.09               | 0.00               | 331.00              | 15.18              | 15.18              | 0.00               |
| 325.80              | 3.25               | 3.25               | 0.00               | 331.10              | 15.18              | 15.18              | 0.00               |
| 325.90              | 3.41               | 3.41               | 0.00               | 331.20              | 15.18              | 15.18              | 0.00               |
| 326.00              | 3.58               | 3.58               | 0.00               | 331.30              | 15.47              | 15.18              | 0.29               |
| 326.10              | 3.75               | 3.75               | 0.00               | 331.40              | 16.69              | 15.18              | 1.52               |
| 326.20              | 3.92               | 3.92               | 0.00               | 331.50              | 18.45              | 15.18              | 3.27               |
| 326.30              | 4.10               | 4.10               | 0.00               | 331.60              | 20.64              | 15.18              | 5.47               |
| 326.40              | 4.28               | 4.28               | 0.00               | 331.70              | <b>23.22</b>       | 15.18              | <b>8.04</b>        |
| 326.50              | 4.46               | 4.46               | 0.00               |                     |                    |                    |                    |
| 326.60              | 4.65               | 4.65               | 0.00               |                     |                    |                    |                    |
| 326.70              | 4.84               | 4.84               | 0.00               |                     |                    |                    |                    |
| 326.80              | 5.03               | 5.03               | 0.00               |                     |                    |                    |                    |
| 326.90              | 5.23               | 5.23               | 0.00               |                     |                    |                    |                    |
| 327.00              | 5.44               | 5.44               | 0.00               |                     |                    |                    |                    |
| 327.10              | 5.64               | 5.64               | 0.00               |                     |                    |                    |                    |
| 327.20              | 5.85               | 5.85               | 0.00               |                     |                    |                    |                    |
| 327.30              | 6.07               | 6.07               | 0.00               |                     |                    |                    |                    |
| 327.40              | 6.29               | 6.29               | 0.00               |                     |                    |                    |                    |
| 327.50              | 6.51               | 6.51               | 0.00               |                     |                    |                    |                    |
| 327.60              | 6.74               | 6.74               | 0.00               |                     |                    |                    |                    |
| 327.70              | 6.97               | 6.97               | 0.00               |                     |                    |                    |                    |
| 327.80              | 7.20               | 7.20               | 0.00               |                     |                    |                    |                    |
| 327.90              | 7.44               | 7.44               | 0.00               |                     |                    |                    |                    |
| 328.00              | 7.69               | 7.69               | 0.00               |                     |                    |                    |                    |
| 328.10              | 7.92               | 7.92               | 0.00               |                     |                    |                    |                    |
| 328.20              | 8.16               | 8.16               | 0.00               |                     |                    |                    |                    |
| 328.30              | 8.40               | 8.40               | 0.00               |                     |                    |                    |                    |
| 328.40              | 8.65               | 8.65               | 0.00               |                     |                    |                    |                    |
| 328.50              | 8.90               | 8.90               | 0.00               |                     |                    |                    |                    |
| 328.60              | 9.15               | 9.15               | 0.00               |                     |                    |                    |                    |
| 328.70              | 9.41               | 9.41               | 0.00               |                     |                    |                    |                    |
| 328.80              | 9.67               | 9.67               | 0.00               |                     |                    |                    |                    |
| 328.90              | 9.94               | 9.94               | 0.00               |                     |                    |                    |                    |
| 329.00              | 10.21              | 10.21              | 0.00               |                     |                    |                    |                    |
| 329.10              | 10.47              | 10.47              | 0.00               |                     |                    |                    |                    |
| 329.20              | 10.74              | 10.74              | 0.00               |                     |                    |                    |                    |
| 329.30              | 11.01              | 11.01              | 0.00               |                     |                    |                    |                    |
| 329.40              | 11.28              | 11.28              | 0.00               |                     |                    |                    |                    |
| 329.50              | 11.55              | 11.55              | 0.00               |                     |                    |                    |                    |
| 329.60              | 11.83              | 11.83              | 0.00               |                     |                    |                    |                    |
| 329.70              | 12.12              | 12.12              | 0.00               |                     |                    |                    |                    |
| 329.80              | 12.40              | 12.40              | 0.00               |                     |                    |                    |                    |
| 329.90              | 12.69              | 12.69              | 0.00               |                     |                    |                    |                    |
| 330.00              | 12.98              | 12.98              | 0.00               |                     |                    |                    |                    |
| 330.10              | 13.41              | 13.41              | 0.00               |                     |                    |                    |                    |
| 330.20              | 13.84              | 13.84              | 0.00               |                     |                    |                    |                    |
| 330.30              | 14.28              | 14.28              | 0.00               |                     |                    |                    |                    |
| 330.40              | 14.73              | 14.73              | 0.00               |                     |                    |                    |                    |
| 330.50              | 15.18              | <b>15.18</b>       | 0.00               |                     |                    |                    |                    |
| 330.60              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |
| 330.70              | 15.18              | 15.18              | 0.00               |                     |                    |                    |                    |

**Stage-Area-Storage for Pond 5P: Proposed Infiltration Basin**

| Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Horizontal<br>(sq-ft) | Storage<br>(cubic-feet) |
|---------------------|-----------------------|-------------------------|---------------------|-----------------------|-------------------------|
| 325.50              | 1,201                 | 0                       | 330.80              | 6,557                 | 19,417                  |
| 325.60              | 1,267                 | 123                     | 330.90              | 6,557                 | 20,170                  |
| 325.70              | 1,334                 | 253                     | 331.00              | 6,557                 | 20,951                  |
| 325.80              | 1,404                 | 390                     | 331.10              | 6,557                 | 21,763                  |
| 325.90              | 1,475                 | 534                     | 331.20              | 6,557                 | 22,604                  |
| 326.00              | 1,548                 | 685                     | 331.30              | 6,557                 | 23,475                  |
| 326.10              | 1,620                 | 844                     | 331.40              | 6,557                 | 24,376                  |
| 326.20              | 1,694                 | 1,009                   | 331.50              | 6,557                 | 25,309                  |
| 326.30              | 1,770                 | 1,183                   | 331.60              | 6,557                 | 26,274                  |
| 326.40              | 1,847                 | 1,363                   | 331.70              | 6,557                 | <b>27,271</b>           |
| 326.50              | 1,926                 | 1,552                   |                     |                       |                         |
| 326.60              | 2,007                 | 1,749                   |                     |                       |                         |
| 326.70              | 2,090                 | 1,954                   |                     |                       |                         |
| 326.80              | 2,175                 | 2,167                   |                     |                       |                         |
| 326.90              | 2,261                 | 2,389                   |                     |                       |                         |
| 327.00              | 2,349                 | 2,619                   |                     |                       |                         |
| 327.10              | 2,438                 | 2,858                   |                     |                       |                         |
| 327.20              | 2,529                 | 3,107                   |                     |                       |                         |
| 327.30              | 2,622                 | 3,364                   |                     |                       |                         |
| 327.40              | 2,716                 | 3,631                   |                     |                       |                         |
| 327.50              | 2,813                 | 3,908                   |                     |                       |                         |
| 327.60              | 2,911                 | 4,194                   |                     |                       |                         |
| 327.70              | 3,010                 | 4,490                   |                     |                       |                         |
| 327.80              | 3,112                 | 4,796                   |                     |                       |                         |
| 327.90              | 3,215                 | 5,112                   |                     |                       |                         |
| 328.00              | 3,320                 | 5,439                   |                     |                       |                         |
| 328.10              | 3,422                 | 5,776                   |                     |                       |                         |
| 328.20              | 3,525                 | 6,123                   |                     |                       |                         |
| 328.30              | 3,630                 | 6,481                   |                     |                       |                         |
| 328.40              | 3,737                 | 6,850                   |                     |                       |                         |
| 328.50              | 3,845                 | 7,229                   |                     |                       |                         |
| 328.60              | 3,955                 | 7,619                   |                     |                       |                         |
| 328.70              | 4,066                 | 8,020                   |                     |                       |                         |
| 328.80              | 4,179                 | 8,432                   |                     |                       |                         |
| 328.90              | 4,294                 | 8,856                   |                     |                       |                         |
| 329.00              | 4,410                 | 9,291                   |                     |                       |                         |
| 329.10              | 4,523                 | 9,737                   |                     |                       |                         |
| 329.20              | 4,638                 | 10,195                  |                     |                       |                         |
| 329.30              | 4,754                 | 10,665                  |                     |                       |                         |
| 329.40              | 4,872                 | 11,146                  |                     |                       |                         |
| 329.50              | 4,991                 | 11,639                  |                     |                       |                         |
| 329.60              | 5,112                 | 12,145                  |                     |                       |                         |
| 329.70              | 5,234                 | 12,662                  |                     |                       |                         |
| 329.80              | 5,357                 | 13,191                  |                     |                       |                         |
| 329.90              | 5,482                 | 13,733                  |                     |                       |                         |
| 330.00              | 5,609                 | 14,288                  |                     |                       |                         |
| 330.10              | 5,793                 | 14,858                  |                     |                       |                         |
| 330.20              | 5,979                 | 15,447                  |                     |                       |                         |
| 330.30              | 6,169                 | 16,054                  |                     |                       |                         |
| 330.40              | 6,361                 | 16,681                  |                     |                       |                         |
| 330.50              | <b>6,557</b>          | 17,326                  |                     |                       |                         |
| 330.60              | 6,557                 | 17,996                  |                     |                       |                         |
| 330.70              | 6,557                 | 18,692                  |                     |                       |                         |

**Summary for Pond 6P: Proposed Stormwater Pond**

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth = 0.27" for WQv event  
 Inflow = 0.16 cfs @ 12.22 hrs, Volume= 0.030 af  
 Outflow = 0.01 cfs @ 19.23 hrs, Volume= 0.029 af, Atten= 91%, Lag= 420.8 min  
 Primary = 0.01 cfs @ 19.23 hrs, Volume= 0.029 af  
 Routed to Reach R10 : 10" Culvert Pond Discharge  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Link AP5 : Analysis Point 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs / 2  
 Starting Elev= 329.33' Surf.Area= 2,011 sf Storage= 1,574 cf  
 Peak Elev= 329.65' @ 19.23 hrs Surf.Area= 2,487 sf Storage= 2,301 cf (728 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= 732.3 min ( 1,676.3 - 944.0 )

| Volume | Invert  | Avail.Storage | Storage Description                                 |
|--------|---------|---------------|---|
| #1     | 331.75' | 6,028 cf      | <b>Upper Pond (Irregular)</b> Listed below (Recalc) |
| #2     | 327.75' | 8,305 cf      | <b>Micropool (Irregular)</b> Listed below (Recalc)  |
| #3     | 327.50' | 2,269 cf      | <b>Forebay (Irregular)</b> Listed below (Recalc)    |
|        |         | 16,603 cf     | Total Available Storage                             |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 331.75           | 5,523             | 306.7         | 0                      | 0                      | 5,523            |
| 332.00           | 5,830             | 312.4         | 1,419                  | 1,419                  | 5,814            |
| 332.75           | 6,467             | 324.9         | 4,609                  | 6,028                  | 6,492            |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.75           | 200               | 93.4          | 0                      | 0                      | 200              |
| 328.00           | 271               | 98.0          | 59                     | 59                     | 274              |
| 329.00           | 1,297             | 155.9         | 720                    | 779                    | 1,451            |
| 330.00           | 2,476             | 197.8         | 1,855                  | 2,634                  | 2,643            |
| 331.00           | 3,318             | 222.9         | 2,887                  | 5,521                  | 3,510            |
| 331.75           | 4,121             | 250.8         | 2,784                  | 8,305                  | 4,576            |

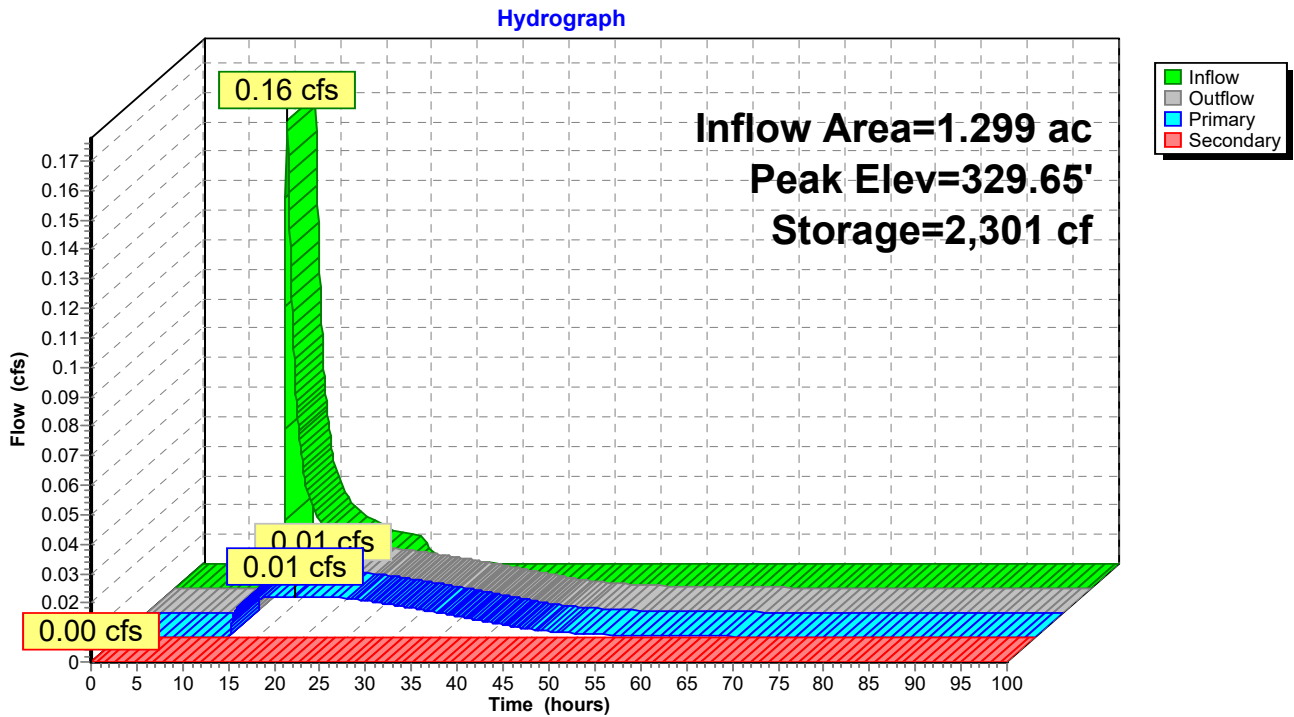
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|------------------|-------------------|---------------|------------------------|------------------------|------------------|
| 327.50           | 29                | 23.3          | 0                      | 0                      | 29               |
| 328.00           | 88                | 35.9          | 28                     | 28                     | 90               |
| 329.00           | 282               | 61.1          | 176                    | 204                    | 291              |
| 330.00           | 574               | 85.9          | 419                    | 623                    | 590              |
| 331.00           | 968               | 111.0         | 762                    | 1,386                  | 995              |
| 331.75           | 1,402             | 143.0         | 884                    | 2,269                  | 1,649            |

| Device | Routing   | Invert  | Outlet Devices  |
|--------|-----------|---------|---|
| #1     | Secondary | 331.63' | <b>10.0' long x 7.8' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.42 2.53 2.70 2.69 2.68 2.68 2.66 2.64 2.64<br>2.64 2.65 2.65 2.66 2.67 2.68 2.71 2.75 |
| #2     | Primary   | 331.61' | <b>10.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads   |
| #3     | Primary   | 330.12' | <b>6.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |
| #4     | Primary   | 329.33' | <b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads  |

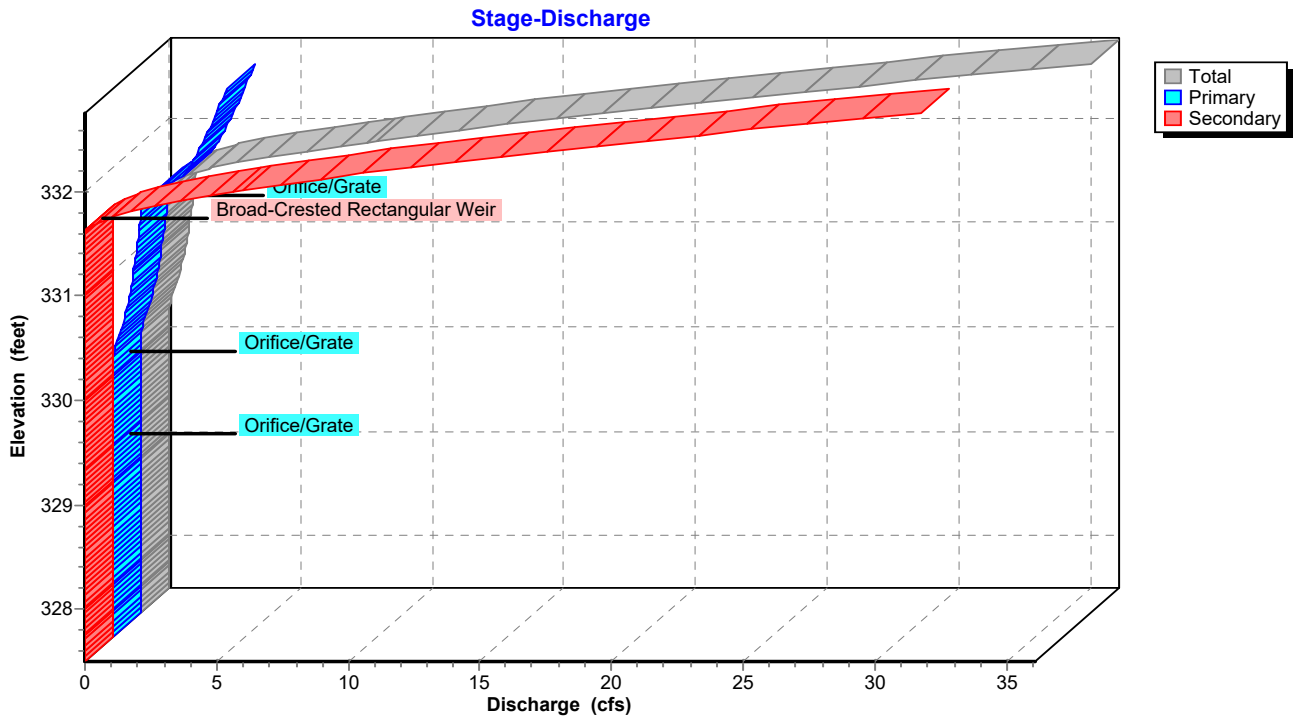
**Primary OutFlow** Max=0.01 cfs @ 19.23 hrs HW=329.65' TW=329.37' (Dynamic Tailwater)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **3=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ **4=Orifice/Grate** (Orifice Controls 0.01 cfs @ 2.55 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=329.33' TW=0.00' (Dynamic Tailwater)  
 ↳ **1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

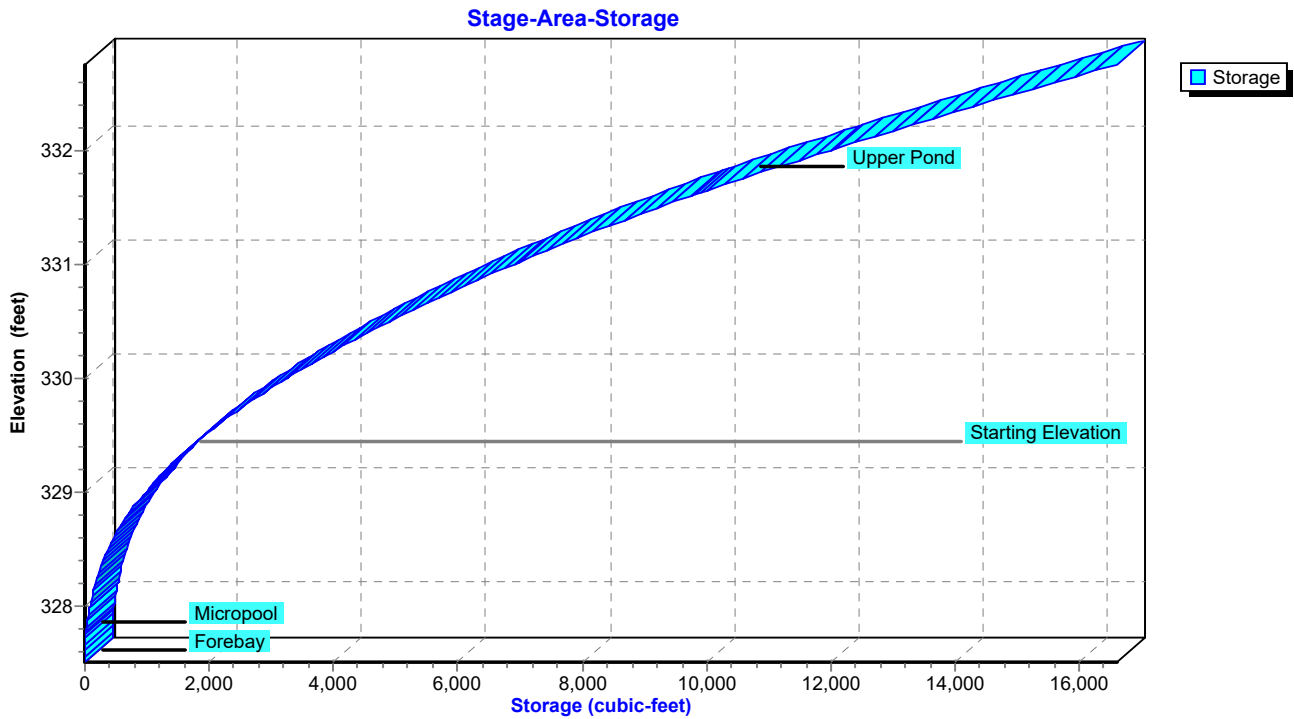
**Pond 6P: Proposed Stormwater Pond**



### Pond 6P: Proposed Stormwater Pond



### Pond 6P: Proposed Stormwater Pond





**Hydrograph for Pond 6P: Proposed Stormwater Pond**

| Time (hours) | Inflow (cfs) | Storage (cubic-feet) | Elevation (feet) | Outflow (cfs) | Primary (cfs) | Secondary (cfs) |
|--------------|--------------|----------------------|------------------|---------------|---------------|-----------------|
| 0.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | <b>0.00</b>     |
| 2.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 5.00         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 7.50         | 0.00         | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 10.00        | <b>0.00</b>  | 1,574                | 329.33           | 0.00          | 0.00          | 0.00            |
| 12.50        | <b>0.13</b>  | 1,824                | 329.45           | 0.01          | 0.01          | 0.00            |
| 15.00        | 0.03         | 2,220                | 329.62           | 0.01          | 0.01          | 0.00            |
| 17.50        | 0.02         | <b>2,291</b>         | <b>329.65</b>    | <b>0.01</b>   | <b>0.01</b>   | 0.00            |
| 20.00        | 0.01         | <b>2,299</b>         | <b>329.65</b>    | <b>0.01</b>   | <b>0.01</b>   | 0.00            |
| 22.50        | 0.01         | 2,276                | 329.64           | 0.01          | 0.01          | 0.00            |
| 25.00        | 0.00         | 2,234                | 329.63           | 0.01          | 0.01          | 0.00            |
| 27.50        | 0.00         | 2,140                | 329.59           | 0.01          | 0.01          | 0.00            |
| 30.00        | 0.00         | 2,042                | 329.55           | 0.01          | 0.01          | 0.00            |
| 32.50        | 0.00         | 1,953                | 329.51           | 0.01          | 0.01          | 0.00            |
| 35.00        | 0.00         | 1,873                | 329.47           | 0.01          | 0.01          | 0.00            |
| 37.50        | 0.00         | 1,805                | 329.44           | 0.01          | 0.01          | 0.00            |
| 40.00        | 0.00         | 1,750                | 329.41           | 0.01          | 0.01          | 0.00            |
| 42.50        | 0.00         | 1,707                | 329.39           | 0.00          | 0.00          | 0.00            |
| 45.00        | 0.00         | 1,678                | 329.38           | 0.00          | 0.00          | 0.00            |
| 47.50        | 0.00         | 1,658                | 329.37           | 0.00          | 0.00          | 0.00            |
| 50.00        | 0.00         | 1,643                | 329.36           | 0.00          | 0.00          | 0.00            |
| 52.50        | 0.00         | 1,633                | 329.36           | 0.00          | 0.00          | 0.00            |
| 55.00        | 0.00         | 1,625                | 329.36           | 0.00          | 0.00          | 0.00            |
| 57.50        | 0.00         | 1,619                | 329.35           | 0.00          | 0.00          | 0.00            |
| 60.00        | 0.00         | 1,614                | 329.35           | 0.00          | 0.00          | 0.00            |
| 62.50        | 0.00         | 1,610                | 329.35           | 0.00          | 0.00          | 0.00            |
| 65.00        | 0.00         | 1,607                | 329.35           | 0.00          | 0.00          | 0.00            |
| 67.50        | 0.00         | 1,604                | 329.35           | 0.00          | 0.00          | 0.00            |
| 70.00        | 0.00         | 1,602                | 329.34           | 0.00          | 0.00          | 0.00            |
| 72.50        | 0.00         | 1,600                | 329.34           | 0.00          | 0.00          | 0.00            |
| 75.00        | 0.00         | 1,598                | 329.34           | 0.00          | 0.00          | 0.00            |
| 77.50        | 0.00         | 1,597                | 329.34           | 0.00          | 0.00          | 0.00            |
| 80.00        | 0.00         | 1,595                | 329.34           | 0.00          | 0.00          | 0.00            |
| 82.50        | 0.00         | 1,594                | 329.34           | 0.00          | 0.00          | 0.00            |
| 85.00        | 0.00         | 1,593                | 329.34           | 0.00          | 0.00          | 0.00            |
| 87.50        | 0.00         | 1,592                | 329.34           | 0.00          | 0.00          | 0.00            |
| 90.00        | 0.00         | 1,591                | 329.34           | 0.00          | 0.00          | 0.00            |
| 92.50        | 0.00         | 1,590                | 329.34           | 0.00          | 0.00          | 0.00            |
| 95.00        | 0.00         | 1,589                | 329.34           | 0.00          | 0.00          | 0.00            |
| 97.50        | 0.00         | 1,589                | 329.34           | 0.00          | 0.00          | 0.00            |
| 100.00       | 0.00         | 1,588                | 329.34           | 0.00          | 0.00          | 0.00            |

**Stage-Discharge for Pond 6P: Proposed Stormwater Pond**

| Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) | Elevation<br>(feet) | Discharge<br>(cfs) | Primary<br>(cfs) | Secondary<br>(cfs) |
|---------------------|--------------------|------------------|--------------------|---------------------|--------------------|------------------|--------------------|
| 327.50              | 0.00               | 0.00             | 0.00               | 330.15              | 0.03               | 0.03             | 0.00               |
| 327.55              | 0.00               | 0.00             | 0.00               | 330.20              | 0.04               | 0.04             | 0.00               |
| 327.60              | 0.00               | 0.00             | 0.00               | 330.25              | 0.07               | 0.07             | 0.00               |
| 327.65              | 0.00               | 0.00             | 0.00               | 330.30              | 0.12               | 0.12             | 0.00               |
| 327.70              | 0.00               | 0.00             | 0.00               | 330.35              | 0.17               | 0.17             | 0.00               |
| 327.75              | 0.00               | 0.00             | 0.00               | 330.40              | 0.23               | 0.23             | 0.00               |
| 327.80              | 0.00               | 0.00             | 0.00               | 330.45              | 0.30               | 0.30             | 0.00               |
| 327.85              | 0.00               | 0.00             | 0.00               | 330.50              | 0.36               | 0.36             | 0.00               |
| 327.90              | 0.00               | 0.00             | 0.00               | 330.55              | 0.43               | 0.43             | 0.00               |
| 327.95              | 0.00               | 0.00             | 0.00               | 330.60              | 0.49               | 0.49             | 0.00               |
| 328.00              | 0.00               | 0.00             | 0.00               | 330.65              | 0.53               | 0.53             | 0.00               |
| 328.05              | 0.00               | 0.00             | 0.00               | 330.70              | 0.57               | 0.57             | 0.00               |
| 328.10              | 0.00               | 0.00             | 0.00               | 330.75              | 0.61               | 0.61             | 0.00               |
| 328.15              | 0.00               | 0.00             | 0.00               | 330.80              | 0.65               | 0.65             | 0.00               |
| 328.20              | 0.00               | 0.00             | 0.00               | 330.85              | 0.69               | 0.69             | 0.00               |
| 328.25              | 0.00               | 0.00             | 0.00               | 330.90              | 0.72               | 0.72             | 0.00               |
| 328.30              | 0.00               | 0.00             | 0.00               | 330.95              | 0.75               | 0.75             | 0.00               |
| 328.35              | 0.00               | 0.00             | 0.00               | 331.00              | 0.78               | 0.78             | 0.00               |
| 328.40              | 0.00               | 0.00             | 0.00               | 331.05              | 0.81               | 0.81             | 0.00               |
| 328.45              | 0.00               | 0.00             | 0.00               | 331.10              | 0.84               | 0.84             | 0.00               |
| 328.50              | 0.00               | 0.00             | 0.00               | 331.15              | 0.87               | 0.87             | 0.00               |
| 328.55              | 0.00               | 0.00             | 0.00               | 331.20              | 0.90               | 0.90             | 0.00               |
| 328.60              | 0.00               | 0.00             | 0.00               | 331.25              | 0.92               | 0.92             | 0.00               |
| 328.65              | 0.00               | 0.00             | 0.00               | 331.30              | 0.95               | 0.95             | 0.00               |
| 328.70              | 0.00               | 0.00             | 0.00               | 331.35              | 0.97               | 0.97             | 0.00               |
| 328.75              | 0.00               | 0.00             | 0.00               | 331.40              | 1.00               | 1.00             | 0.00               |
| 328.80              | 0.00               | 0.00             | 0.00               | 331.45              | 1.02               | 1.02             | 0.00               |
| 328.85              | 0.00               | 0.00             | 0.00               | 331.50              | 1.04               | 1.04             | 0.00               |
| 328.90              | 0.00               | 0.00             | 0.00               | 331.55              | 1.07               | 1.07             | 0.00               |
| 328.95              | 0.00               | 0.00             | 0.00               | 331.60              | 1.09               | 1.09             | 0.00               |
| 329.00              | 0.00               | 0.00             | 0.00               | 331.65              | 1.25               | 1.18             | 0.07               |
| 329.05              | 0.00               | 0.00             | 0.00               | 331.70              | 1.81               | 1.36             | 0.45               |
| 329.10              | 0.00               | 0.00             | 0.00               | 331.75              | 2.61               | 1.60             | 1.01               |
| 329.15              | 0.00               | 0.00             | 0.00               | 331.80              | 3.58               | 1.88             | 1.70               |
| 329.20              | 0.00               | 0.00             | 0.00               | 331.85              | 4.71               | 2.20             | 2.51               |
| 329.25              | 0.00               | 0.00             | 0.00               | 331.90              | 6.00               | 2.55             | 3.45               |
| 329.30              | 0.00               | 0.00             | 0.00               | 331.95              | 7.26               | 2.76             | 4.50               |
| 329.35              | 0.00               | 0.00             | 0.00               | 332.00              | 8.55               | 2.89             | 5.66               |
| 329.40              | 0.00               | 0.00             | 0.00               | 332.05              | 9.94               | 3.01             | 6.93               |
| 329.45              | 0.01               | 0.01             | 0.00               | 332.10              | 11.47              | 3.13             | 8.34               |
| 329.50              | 0.01               | 0.01             | 0.00               | 332.15              | 13.10              | 3.23             | 9.87               |
| 329.55              | 0.01               | 0.01             | 0.00               | 332.20              | 14.85              | 3.34             | 11.51              |
| 329.60              | 0.01               | 0.01             | 0.00               | 332.25              | 16.62              | 3.44             | 13.18              |
| 329.65              | 0.01               | 0.01             | 0.00               | 332.30              | 18.33              | 3.54             | 14.79              |
| 329.70              | 0.02               | 0.02             | 0.00               | 332.35              | 20.09              | 3.63             | 16.46              |
| 329.75              | 0.02               | 0.02             | 0.00               | 332.40              | 21.91              | 3.73             | 18.19              |
| 329.80              | 0.02               | 0.02             | 0.00               | 332.45              | 23.78              | 3.82             | 19.97              |
| 329.85              | 0.02               | 0.02             | 0.00               | 332.50              | 25.70              | 3.90             | 21.80              |
| 329.90              | 0.02               | 0.02             | 0.00               | 332.55              | 27.67              | 3.99             | 23.68              |
| 329.95              | 0.02               | 0.02             | 0.00               | 332.60              | 29.69              | 4.07             | 25.62              |
| 330.00              | 0.02               | 0.02             | 0.00               | 332.65              | 31.76              | 4.15             | 27.61              |
| 330.05              | 0.02               | 0.02             | 0.00               | 332.70              | 33.90              | 4.23             | 29.66              |
| 330.10              | 0.02               | 0.02             | 0.00               | 332.75              | <b>36.08</b>       | <b>4.31</b>      | <b>31.77</b>       |

**Stage-Area-Storage for Pond 6P: Proposed Stormwater Pond**

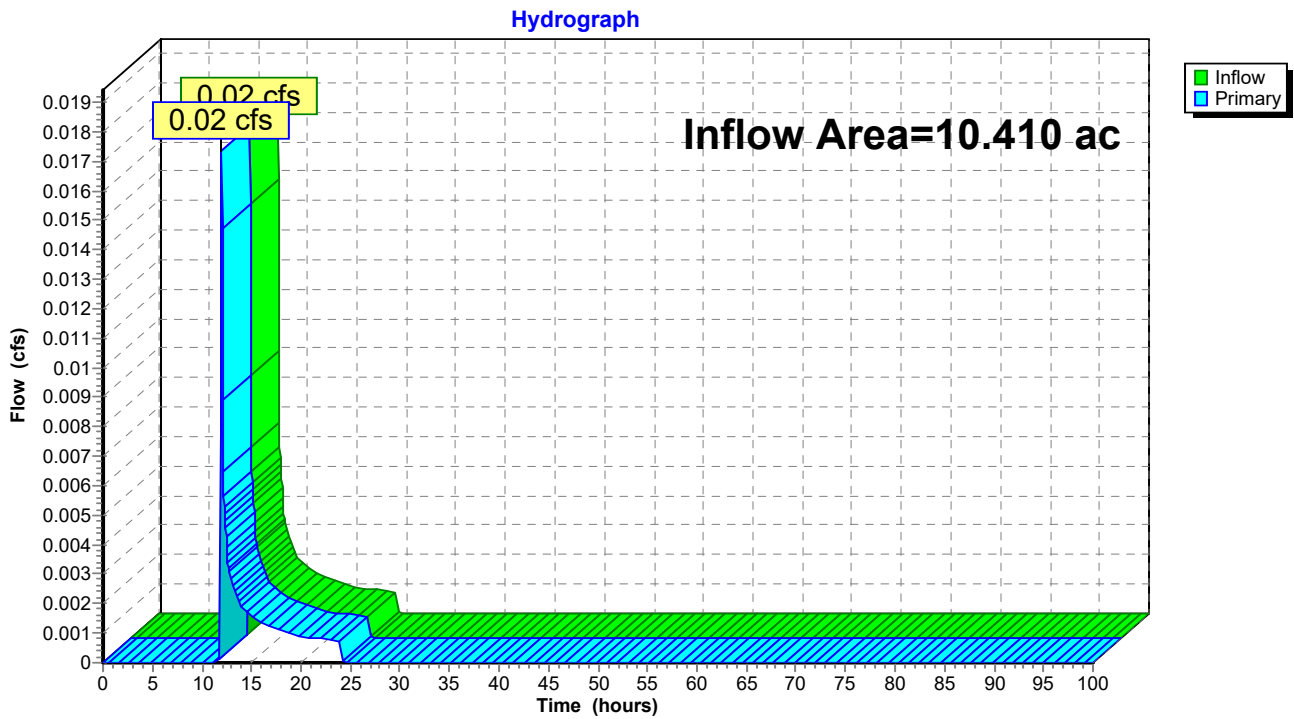
| Elevation<br>(feet) | Storage<br>(cubic-feet) | Elevation<br>(feet) | Storage<br>(cubic-feet) |
|---------------------|-------------------------|---------------------|-------------------------|
| 327.50              | 0                       | 330.15              | 3,727                   |
| 327.55              | 2                       | 330.20              | 3,890                   |
| 327.60              | 3                       | 330.25              | 4,055                   |
| 327.65              | 5                       | 330.30              | 4,224                   |
| 327.70              | 8                       | 330.35              | 4,395                   |
| 327.75              | 10                      | 330.40              | 4,569                   |
| 327.80              | 23                      | 330.45              | 4,747                   |
| 327.85              | 38                      | 330.50              | 4,927                   |
| 327.90              | 53                      | 330.55              | 5,111                   |
| 327.95              | 69                      | 330.60              | 5,297                   |
| 328.00              | 87                      | 330.65              | 5,487                   |
| 328.05              | 106                     | 330.70              | 5,680                   |
| 328.10              | 127                     | 330.75              | 5,876                   |
| 328.15              | 150                     | 330.80              | 6,076                   |
| 328.20              | 175                     | 330.85              | 6,279                   |
| 328.25              | 203                     | 330.90              | 6,484                   |
| 328.30              | 233                     | 330.95              | 6,694                   |
| 328.35              | 266                     | 331.00              | 6,906                   |
| 328.40              | 302                     | 331.05              | 7,123                   |
| 328.45              | 341                     | 331.10              | 7,343                   |
| 328.50              | 382                     | 331.15              | 7,567                   |
| 328.55              | 427                     | 331.20              | 7,795                   |
| 328.60              | 474                     | 331.25              | 8,027                   |
| 328.65              | 525                     | 331.30              | 8,263                   |
| 328.70              | 580                     | 331.35              | 8,503                   |
| 328.75              | 637                     | 331.40              | 8,747                   |
| 328.80              | 699                     | 331.45              | 8,995                   |
| 328.85              | 764                     | 331.50              | 9,248                   |
| 328.90              | 833                     | 331.55              | 9,505                   |
| 328.95              | 906                     | 331.60              | 9,765                   |
| 329.00              | 983                     | 331.65              | 10,031                  |
| 329.05              | 1,063                   | 331.70              | 10,300                  |
| 329.10              | 1,147                   | 331.75              | 10,574                  |
| 329.15              | 1,234                   | 331.80              | 10,852                  |
| 329.20              | 1,324                   | 331.85              | 11,133                  |
| 329.25              | 1,417                   | 331.90              | 11,416                  |
| 329.30              | 1,514                   | 331.95              | 11,703                  |
| 329.35              | 1,614                   | 332.00              | 11,993                  |
| 329.40              | 1,718                   | 332.05              | 12,286                  |
| 329.45              | 1,825                   | 332.10              | 12,580                  |
| 329.50              | 1,936                   | 332.15              | 12,877                  |
| 329.55              | 2,051                   | 332.20              | 13,176                  |
| 329.60              | 2,169                   | 332.25              | 13,477                  |
| 329.65              | 2,291                   | 332.30              | 13,780                  |
| 329.70              | 2,417                   | 332.35              | 14,085                  |
| 329.75              | 2,547                   | 332.40              | 14,392                  |
| 329.80              | 2,681                   | 332.45              | 14,701                  |
| 329.85              | 2,819                   | 332.50              | 15,013                  |
| 329.90              | 2,961                   | 332.55              | 15,327                  |
| 329.95              | 3,107                   | 332.60              | 15,642                  |
| 330.00              | 3,257                   | 332.65              | 15,960                  |
| 330.05              | 3,411                   | 332.70              | 16,280                  |
| 330.10              | 3,568                   | 332.75              | <b>16,603</b>           |

### Summary for Link AP3: Analysis Point 3

Inflow Area = 10.410 ac, 13.37% Impervious, Inflow Depth = 0.00" for WQv event  
Inflow = 0.02 cfs @ 12.02 hrs, Volume= 0.002 af  
Primary = 0.02 cfs @ 12.02 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP3: Analysis Point 3



**Hydrograph for Link AP3: Analysis Point 3**

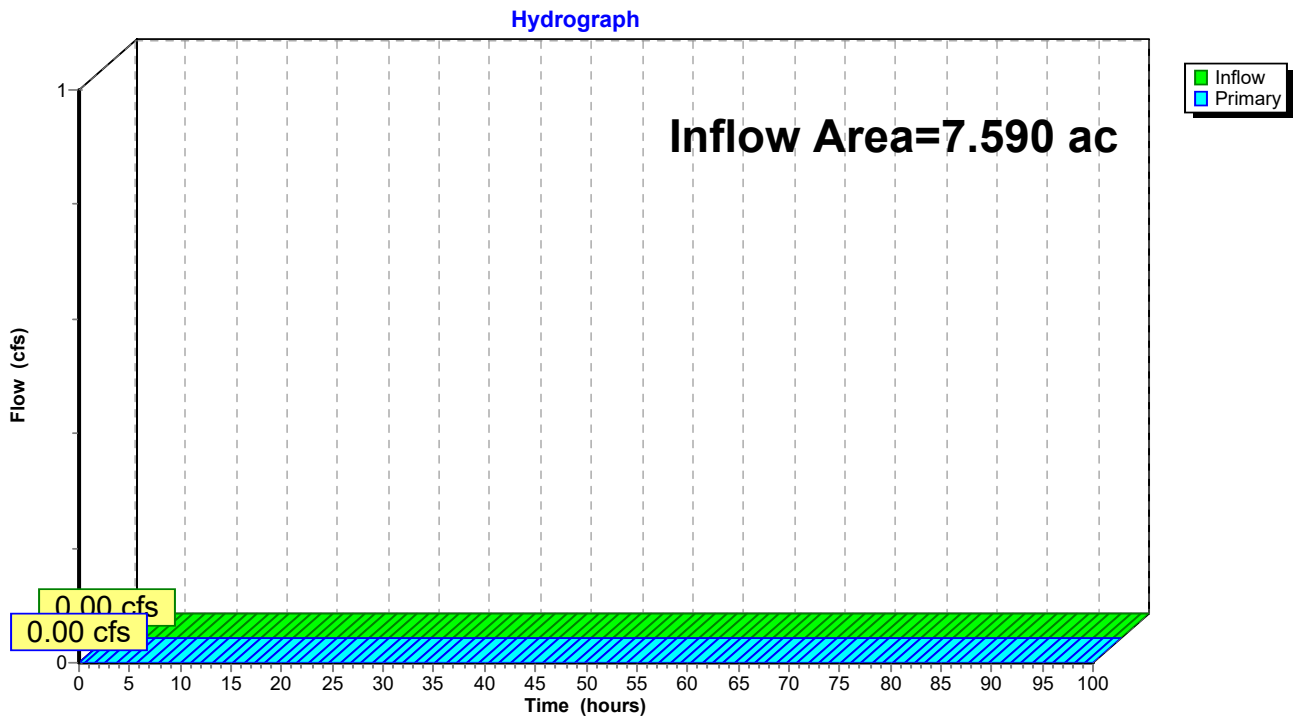
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | <b>0.02</b>  | 0.00             | <b>0.02</b>   | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP4: Analysis Point 4

Inflow Area = 7.590 ac, 48.91% Impervious, Inflow Depth = 0.00" for WQv event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP4: Analysis Point 4



**Hydrograph for Link AP4: Analysis Point 4**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

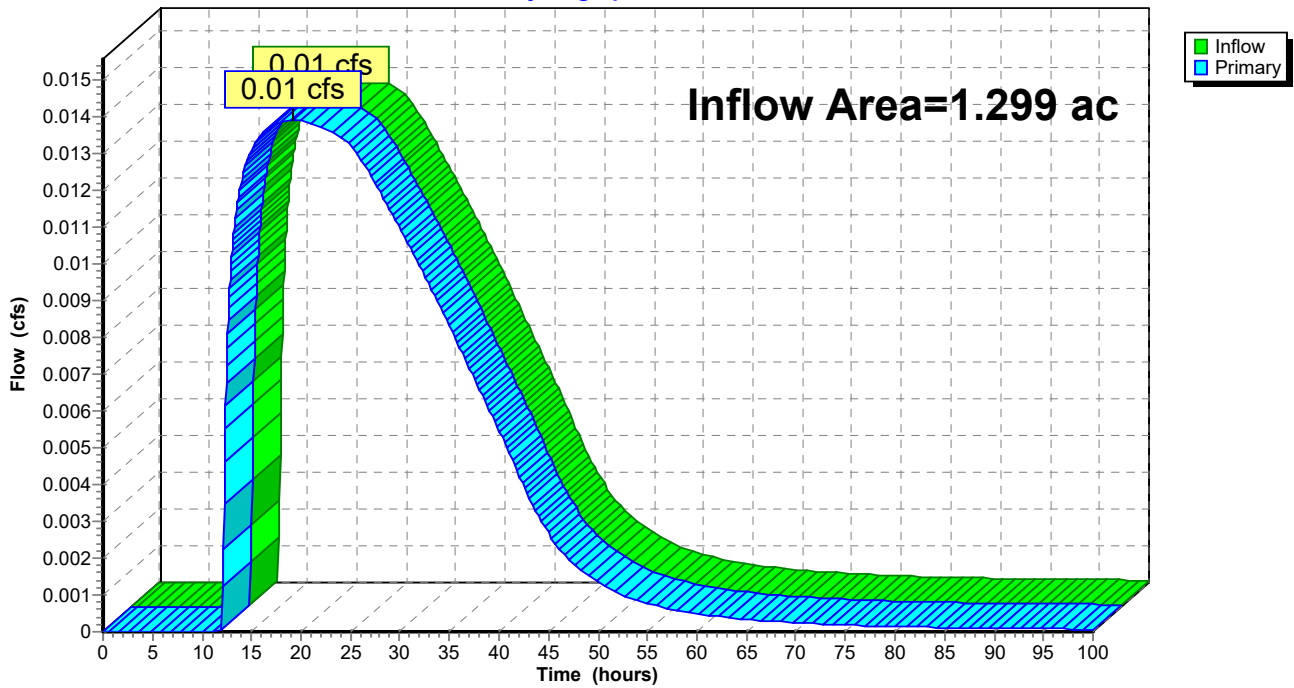
### Summary for Link AP5: Analysis Point 5

Inflow Area = 1.299 ac, 35.18% Impervious, Inflow Depth > 0.27" for WQv event  
Inflow = 0.01 cfs @ 19.24 hrs, Volume= 0.029 af  
Primary = 0.01 cfs @ 19.24 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP5: Analysis Point 5

Hydrograph





**Hydrograph for Link AP5: Analysis Point 5**

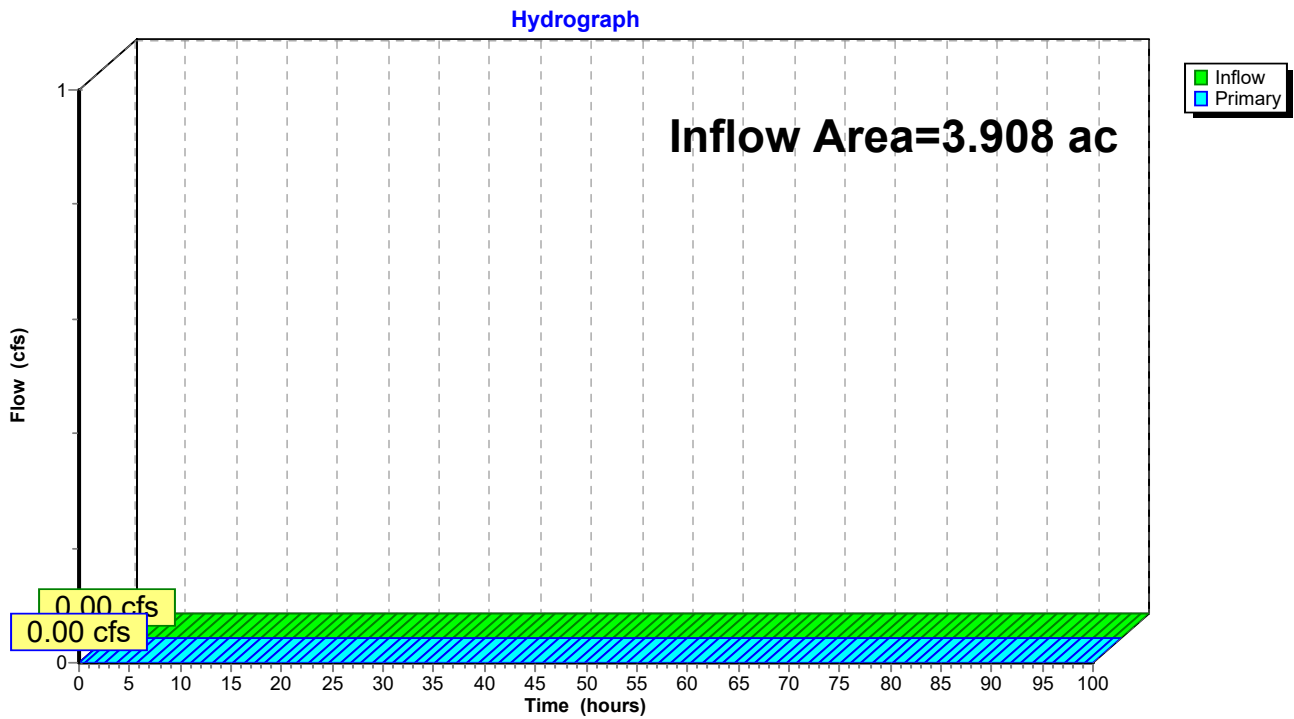
| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | <b>0.00</b>      | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.01         | 0.00             | 0.01          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.01         | 0.00             | 0.01          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.01         | 0.00             | 0.01          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.01         | 0.00             | 0.01          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.01         | 0.00             | 0.01          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.01         | 0.00             | 0.01          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | <b>0.01</b>  | 0.00             | <b>0.01</b>   | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | <b>0.01</b>  | 0.00             | <b>0.01</b>   | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.01         | 0.00             | 0.01          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.01         | 0.00             | 0.01          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.01         | 0.00             | 0.01          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.01         | 0.00             | 0.01          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.01         | 0.00             | 0.01          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.01         | 0.00             | 0.01          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.01         | 0.00             | 0.01          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.01         | 0.00             | 0.01          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.01         | 0.00             | 0.01          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.01         | 0.00             | 0.01          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.01         | 0.00             | 0.01          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.01         | 0.00             | 0.01          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.01         | 0.00             | 0.01          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.01         | 0.00             | 0.01          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.01         | 0.00             | 0.01          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.01         | 0.00             | 0.01          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.01         | 0.00             | 0.01          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.01         | 0.00             | 0.01          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.01         | 0.00             | 0.01          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.01         | 0.00             | 0.01          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

### Summary for Link AP6: Analysis Point 6

Inflow Area = 3.908 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event  
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

### Link AP6: Analysis Point 6



**Hydrograph for Link AP6: Analysis Point 6**

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) | Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|--------------|--------------|------------------|---------------|--------------|--------------|------------------|---------------|
| 0.00         | 0.00         | 0.00             | 0.00          | 53.00        | 0.00         | 0.00             | 0.00          |
| 1.00         | 0.00         | 0.00             | 0.00          | 54.00        | 0.00         | 0.00             | 0.00          |
| 2.00         | 0.00         | 0.00             | 0.00          | 55.00        | 0.00         | 0.00             | 0.00          |
| 3.00         | 0.00         | 0.00             | 0.00          | 56.00        | 0.00         | 0.00             | 0.00          |
| 4.00         | 0.00         | 0.00             | 0.00          | 57.00        | 0.00         | 0.00             | 0.00          |
| 5.00         | 0.00         | 0.00             | 0.00          | 58.00        | 0.00         | 0.00             | 0.00          |
| 6.00         | 0.00         | 0.00             | 0.00          | 59.00        | 0.00         | 0.00             | 0.00          |
| 7.00         | 0.00         | 0.00             | 0.00          | 60.00        | 0.00         | 0.00             | 0.00          |
| 8.00         | 0.00         | 0.00             | 0.00          | 61.00        | 0.00         | 0.00             | 0.00          |
| 9.00         | 0.00         | 0.00             | 0.00          | 62.00        | 0.00         | 0.00             | 0.00          |
| 10.00        | 0.00         | 0.00             | 0.00          | 63.00        | 0.00         | 0.00             | 0.00          |
| 11.00        | 0.00         | 0.00             | 0.00          | 64.00        | 0.00         | 0.00             | 0.00          |
| 12.00        | 0.00         | 0.00             | 0.00          | 65.00        | 0.00         | 0.00             | 0.00          |
| 13.00        | 0.00         | 0.00             | 0.00          | 66.00        | 0.00         | 0.00             | 0.00          |
| 14.00        | 0.00         | 0.00             | 0.00          | 67.00        | 0.00         | 0.00             | 0.00          |
| 15.00        | 0.00         | 0.00             | 0.00          | 68.00        | 0.00         | 0.00             | 0.00          |
| 16.00        | 0.00         | 0.00             | 0.00          | 69.00        | 0.00         | 0.00             | 0.00          |
| 17.00        | 0.00         | 0.00             | 0.00          | 70.00        | 0.00         | 0.00             | 0.00          |
| 18.00        | 0.00         | 0.00             | 0.00          | 71.00        | 0.00         | 0.00             | 0.00          |
| 19.00        | 0.00         | 0.00             | 0.00          | 72.00        | 0.00         | 0.00             | 0.00          |
| 20.00        | 0.00         | 0.00             | 0.00          | 73.00        | 0.00         | 0.00             | 0.00          |
| 21.00        | 0.00         | 0.00             | 0.00          | 74.00        | 0.00         | 0.00             | 0.00          |
| 22.00        | 0.00         | 0.00             | 0.00          | 75.00        | 0.00         | 0.00             | 0.00          |
| 23.00        | 0.00         | 0.00             | 0.00          | 76.00        | 0.00         | 0.00             | 0.00          |
| 24.00        | 0.00         | 0.00             | 0.00          | 77.00        | 0.00         | 0.00             | 0.00          |
| 25.00        | 0.00         | 0.00             | 0.00          | 78.00        | 0.00         | 0.00             | 0.00          |
| 26.00        | 0.00         | 0.00             | 0.00          | 79.00        | 0.00         | 0.00             | 0.00          |
| 27.00        | 0.00         | 0.00             | 0.00          | 80.00        | 0.00         | 0.00             | 0.00          |
| 28.00        | 0.00         | 0.00             | 0.00          | 81.00        | 0.00         | 0.00             | 0.00          |
| 29.00        | 0.00         | 0.00             | 0.00          | 82.00        | 0.00         | 0.00             | 0.00          |
| 30.00        | 0.00         | 0.00             | 0.00          | 83.00        | 0.00         | 0.00             | 0.00          |
| 31.00        | 0.00         | 0.00             | 0.00          | 84.00        | 0.00         | 0.00             | 0.00          |
| 32.00        | 0.00         | 0.00             | 0.00          | 85.00        | 0.00         | 0.00             | 0.00          |
| 33.00        | 0.00         | 0.00             | 0.00          | 86.00        | 0.00         | 0.00             | 0.00          |
| 34.00        | 0.00         | 0.00             | 0.00          | 87.00        | 0.00         | 0.00             | 0.00          |
| 35.00        | 0.00         | 0.00             | 0.00          | 88.00        | 0.00         | 0.00             | 0.00          |
| 36.00        | 0.00         | 0.00             | 0.00          | 89.00        | 0.00         | 0.00             | 0.00          |
| 37.00        | 0.00         | 0.00             | 0.00          | 90.00        | 0.00         | 0.00             | 0.00          |
| 38.00        | 0.00         | 0.00             | 0.00          | 91.00        | 0.00         | 0.00             | 0.00          |
| 39.00        | 0.00         | 0.00             | 0.00          | 92.00        | 0.00         | 0.00             | 0.00          |
| 40.00        | 0.00         | 0.00             | 0.00          | 93.00        | 0.00         | 0.00             | 0.00          |
| 41.00        | 0.00         | 0.00             | 0.00          | 94.00        | 0.00         | 0.00             | 0.00          |
| 42.00        | 0.00         | 0.00             | 0.00          | 95.00        | 0.00         | 0.00             | 0.00          |
| 43.00        | 0.00         | 0.00             | 0.00          | 96.00        | 0.00         | 0.00             | 0.00          |
| 44.00        | 0.00         | 0.00             | 0.00          | 97.00        | 0.00         | 0.00             | 0.00          |
| 45.00        | 0.00         | 0.00             | 0.00          | 98.00        | 0.00         | 0.00             | 0.00          |
| 46.00        | 0.00         | 0.00             | 0.00          | 99.00        | 0.00         | 0.00             | 0.00          |
| 47.00        | 0.00         | 0.00             | 0.00          | 100.00       | 0.00         | 0.00             | 0.00          |
| 48.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 49.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 50.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 51.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |
| 52.00        | 0.00         | 0.00             | 0.00          |              |              |                  |               |

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- 94 Subcat S5a: Subcatchment 5a
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- 100 Subcat S7: Subcatchment 7
- 103 Reach R10: 10" Culvert Pond Discharge
- 109 Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond
- 114 Reach R12: 12" Culvert Pond Discharge
- 120 Reach R7: Proposed RRv Swale
- 125 Reach R8: Proposed RRv Swale
- 130 Reach R9: Proposed RRV Swale
- 135 Pond 4P: Proposed Stormwater Pond
- 141 Pond 5P: Proposed Infiltration Basin

- 147 Pond 6P: Proposed Stormwater Pond
- 153 Link AP3: Analysis Point 3
- 155 Link AP4: Analysis Point 4
- 157 Link AP5: Analysis Point 5
- 159 Link AP6: Analysis Point 6

**25-yr Event**

- 161 Node Listing
- 163 Subcat 6S: Subcatchment 6
- 165 Subcat S4a: Subcatchment 4a
- 169 Subcat S4b: Subcatchment 4b
- 171 Subcat S5a: Subcatchment 5a
- 174 Subcat S5b: Subcatchment 5b
- 177 Subcat S7: Subcatchment 7
- 180 Reach R10: 10" Culvert Pond Discharge
- 186 Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond
- 191 Reach R12: 12" Culvert Pond Discharge
- 197 Reach R7: Proposed RRv Swale
- 202 Reach R8: Proposed RRv Swale
- 207 Reach R9: Proposed RRV Swale
- 212 Pond 4P: Proposed Stormwater Pond
- 218 Pond 5P: Proposed Infiltration Basin
- 224 Pond 6P: Proposed Stormwater Pond
- 230 Link AP3: Analysis Point 3
- 232 Link AP4: Analysis Point 4
- 234 Link AP5: Analysis Point 5
- 236 Link AP6: Analysis Point 6

**100-yr Event**

- 238 Node Listing
- 240 Subcat 6S: Subcatchment 6
- 242 Subcat S4a: Subcatchment 4a
- 246 Subcat S4b: Subcatchment 4b
- 248 Subcat S5a: Subcatchment 5a
- 251 Subcat S5b: Subcatchment 5b
- 254 Subcat S7: Subcatchment 7
- 257 Reach R10: 10" Culvert Pond Discharge
- 263 Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond
- 268 Reach R12: 12" Culvert Pond Discharge
- 274 Reach R7: Proposed RRv Swale
- 279 Reach R8: Proposed RRv Swale
- 284 Reach R9: Proposed RRV Swale
- 290 Pond 4P: Proposed Stormwater Pond
- 296 Pond 5P: Proposed Infiltration Basin
- 302 Pond 6P: Proposed Stormwater Pond
- 308 Link AP3: Analysis Point 3
- 310 Link AP4: Analysis Point 4
- 312 Link AP5: Analysis Point 5

314 Link AP6: Analysis Point 6

**WQv Event**

316 Node Listing

318 Subcat 6S: Subcatchment 6

320 Subcat S4a: Subcatchment 4a

324 Subcat S4b: Subcatchment 4b

326 Subcat S5a: Subcatchment 5a

329 Subcat S5b: Subcatchment 5b

332 Subcat S7: Subcatchment 7

335 Reach R10: 10" Culvert Pond Discharge

341 Reach R11: Proposed RRv Swale - 268' Prior to Stormwater Pond

346 Reach R12: 12" Culvert Pond Discharge

352 Reach R7: Proposed RRv Swale

357 Reach R8: Proposed RRv Swale

362 Reach R9: Proposed RRV Swale

367 Pond 4P: Proposed Stormwater Pond

373 Pond 5P: Proposed Infiltration Basin

379 Pond 6P: Proposed Stormwater Pond

385 Link AP3: Analysis Point 3

387 Link AP4: Analysis Point 4

389 Link AP5: Analysis Point 5

391 Link AP6: Analysis Point 6

**APPENDIX F**

**WATER QUALITY CALCULATIONS  
RUNOFF REDUCTION CALCULATIONS  
SUMMARY**

**SHANGRI-LA - FARMSTAND WATER QUALITY & RUNOFF REDUCTION VOLUME CALCULATIONS**

**Water Quality Volume - Subcatchment 2a (Runoff to RRv Vegetated Swale 2R & Pond 3)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P)(R_v)(A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 18.6%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.22  
 A = Area = 0.830 acres  
 A<sub>i</sub> = Area, Impervious = 0.154 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.018 ac-ft**

**Water Quality Volume - Subcatchment 2c (Runoff to RRv Vegetated Swale 3R & Pond 3)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P)(R_v)(A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 42.5%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.43  
 A = Area = 0.506 acres  
 A<sub>i</sub> = Area, Impervious = 0.215 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.022 ac-ft**

**Water Quality Volume - Subcatchment 2e (Runoff to RRv Vegetated Swale 5R & Pond 3)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P)(R_v)(A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 26.5%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.29  
 A = Area = 0.238 acres  
 A<sub>i</sub> = Area, Impervious = 0.063 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.007 ac-ft**

**Minimum Runoff Reduction Volume - Project Total**

Formula for calculating the Runoff Reduction volume (RR<sub>v</sub>) =  $\frac{(P)(R_v)(A_{ic})(S)}{12}$

P = 90% Rainfall Event = 1.20 inches  
 I = 100% Impervious = 100.0%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.95  
 A<sub>ic</sub> = Total Area of New Impervious Cover = 0.432 acres  
 S = Hydraulic Soil Group Specific Reduction Factor = 0.20  
**Minimum Runoff Reduction Volume = 0.008 ac-ft**

\*There is an area reduction applied to the Total Impervious Area Coverage. Ten (10) Trees are being proposed directly adjacent to impervious areas. The total impervious area used for calculation is reduced by 1,000 sf.  
 \*Contributing drainage areas, based on Web Soil Survey, are within A/D, C/D and A Soils. Based on field observations and test pit data, the HSG designation of D was used for developed/disturbed areas designated as Wa Soils.

**RRv and WQv Storage Volume Summary**

**Total Project WQv Required = 0.047 ac-ft** (0.018 ac-ft + 0.022 ac-ft + 0.007 ac-ft)  
**Minimum Project RRv Required = 0.008 ac-ft**  
 RRv Provided in Vegetated Swale 2R = 0.002 ac-ft 12% WQv Reduction\* (12% of 0.018 ac-ft) (D Soils)  
 RRv Provided in Vegetated Swale 3R = 0.003 ac-ft 12% WQv Reduction\* (12% of 0.022 ac-ft) (D Soils)  
 RRv Provided in Vegetated Swale 5R = 0.001 ac-ft 12% WQv Reduction\* (12% of 0.007 ac-ft) (D Soils)  
 RRv Provided in Cistern\*\* = 0.002 ac-ft \*\*See Cistern Sizing Calcs Below  
**Total RRv Provided = 0.008 ac-ft** \*SWPPP calls for Soil Restoration  
 Remaining WQv required in Pond = 0.039 ac-ft (0.047 ac-ft - 0.008 ac-ft)  
 WQv provided in Pond = 0.095 ac-ft  
**Total Project WQv Provided = 0.103 ac-ft**

**The Total Project Provided Water Quality Volume exceeds the Required Water Quality Volume**

**The required minimum RRv is provided in the Vegetated Swales and Cistern**

Vegetated Swales used for RRv are located in D Soils. See RRv Vegetated Swale Summary for 12% WQv reduction justification.

**Cistern Sizing Calculations (Treating Farmstand Rooftop)**

Vol = WQv x 7.5 gals/cu-ft = 95 cf x 7.5 gals/cu-ft = 712 gallons = 0.002 af-ft  
 WQv =  $\frac{(P)(R_v)(A)}{12}$

Where:

**Cistern shall hold 712 gallons runoff min.**  
 P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 100.0%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.95  
 A = Area = 0.02 acres (Farmstand Roof)  
 A<sub>i</sub> = Area, Impervious = 0.02 acres (Farmstand Roof)

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.002 ac-ft**



## Shangri-La Farmstand - Vegetated Swale RRv Justification Summary

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Chapter 5 of the NYS Stormwater Design Manual Outlines Sizing Criteria that needs to be met in order to claim WQv reduction for the use of Vegetated Swales.

The following chart summarizes the sizing criteria outlined in the manual and that provided in the design.

| Design Criteria       | Required               | Provided in Swale 2R | Provided in Swale 3R | Provided in Swale 5R |
|-----------------------|------------------------|----------------------|----------------------|----------------------|
| Bottom Width          | 2' minimum, 6' maximum | 2'                   | 2'                   | 2'                   |
| Side Slopes           | 3:1 maximum            | 3:1'                 | 3:1'                 | 3:1'                 |
| Swale Length          | 100' minimum           | 390'                 | 104'                 | 136'                 |
| WQv Detention Time    | 10 minutes minimum     | 38.5 minutes         | 11.3 minutes         | 14.4 minutes         |
| Longitudinal Slope    | 4.0% maximum           | 1.5 Percent          | 1.2 Percent          | 3.3 Percent          |
| WQv Velocity          | 1 fps maximum          | 0.47 fps             | 0.51 fps             | 0.48 fps             |
| WQv Water Depth       | 4" maximum             | 1.2"                 | 2.8"                 | 0.72"                |
| 10-yr Storm Freeboard | 6" minimum             | 6"                   | 6"                   | 6"                   |
| 10-yr Storm Velocity  | 5.0 fps maximum        | 1.16 fps             | 0.94 fps             | 1.11 fps             |
| n-value               | 0.03 - 0.15            | 0.08                 | 0.10                 | 0.08                 |

The proposed vegetated swales 2R, 3R and 5R meet the design criteria to provide a Reduction in the Water Quality Volume based on soil type for their respective drainage areas. See Water Quality and Runoff Reduction Volume Calculations for summary.

SHANGRI-LA - GREENHOUSES WATER QUALITY & RUNOFF REDUCTION VOLUME CALCULATIONS

**Water Quality Volume - Subcatchment 4a (Runoff to RRv Vegetated Swale 11R & Pond 4)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P) (R_v) (A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 22.5%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.25  
 A = Area = 3.448 acres  
 A<sub>i</sub> = Area, Impervious = 0.775 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.087 ac-ft**

**Water Quality Volume - Subcatchment 5a (Runoff to RRv Vegetated Swale 7R & Infiltration Basin 5)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P) (R_v) (A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 54.9%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.54  
 A = Area = 5.515 acres  
 A<sub>i</sub> = Area, Impervious = 3.026 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.300 ac-ft**

**Water Quality Volume - Subcatchment 5b (Runoff to RRv Vegetated Swale 8R & Infiltration Basin 5)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P) (R_v) (A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 41.1%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.42  
 A = Area = 1.670 acres  
 A<sub>i</sub> = Area, Impervious = 0.686 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.070 ac-ft**

**Water Quality Volume - Subcatchment 6 (Runoff to RRv Vegetated Swale 9R & Pond 6)**

Formula for calculating the Water Quality storage volume (WQ<sub>v</sub>) =  $\frac{(P) (R_v) (A)}{12}$

Where:

P = 90% Rainfall Event = 1.20 inches  
 I = Percent of Impervious Cover (A/A<sub>i</sub>) = 31.6%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.33  
 A = Area = 1.299 acres  
 A<sub>i</sub> = Area, Impervious = 0.411 acres

R<sub>v</sub> = 0.05 + 0.009(I)  
 I = Impervious Cover in Percent  
 P = 90% Rainfall (See Figure 4.1)  
 A = Site Area (Disturbed Area) in Acres

**Water Quality Storage Volume Required = 0.043 ac-ft**

**Minimum Runoff Reduction Volume - Project Total**

Formula for calculating the Runoff Reduction volume (RR<sub>v</sub>) =  $\frac{(P) (R_v) (Aic) (S)}{12}$

P = 90% Rainfall Event = 1.20 inches  
 I = 100% Impervious = 100.0%  
 R<sub>v</sub> = 0.05 + 0.009(I) = 0.95  
 Aic = Total Area of New Impervious Cover = 4.898 acres  
 S = Hydraulic Soil Group Specific Reduction Factor = 0.475

\*Contributing drainage areas, based on Web Soil Survey, are within A/D, C/D and A Soils. Based on field observations and test pit data, the HSG designation of D was used for developed/disturbed areas designated as Wa Soils. In addition a HSG designation D was used for WnB soils at the south of the greenhouse area. Weighted average of 0.475 used.

**Minimum Runoff Reduction Volume = 0.221 ac-ft**

**RRv and WQv Storage Volume Summary**

**Total Project WQv Required = 0.500 ac-ft** (0.087 ac-ft + 0.300 ac-ft + 0.070 ac-ft + 0.043 ac-ft)

**Minimum Project RRv Required = 0.221 ac-ft**

RRv Provided in Vegetated Swale 11R = 0.010 ac-ft 12% WQv Reduction\* (12% of 0.087 ac-ft) (D Soils)  
 RRv Provided in Vegetated Swale 7R = 0.048 ac-ft 16%\*\* WQv Reduction\* (16% of 0.300 ac-ft) (A & D Soils)  
 RRv Provided in Vegetated Swale 8R = 0.014 ac-ft 20% WQv Reduction\* (20% of 0.070 ac-ft) (A Soils)  
 RRv Provided in Vegetated Swale 9R = 0.005 ac-ft 12% WQv Reduction\* (12% of 0.043 ac-ft) (D Soils)  
 RRv Provided in Infiltration Basin = 0.528 ac-ft See HydroCAD Cals and Details. Entire Stormwater Volume is Infiltrated.

**Total RRv Provided = 0.605 ac-ft** \*SWPPP calls for Soil Restoration  
 \*\* Swale is in A and D Soils. Average used.

WQv provided in Ponds = 0.160 ac-ft 0.077 + 0.083

**Total Project WQv Provided = 0.765 ac-ft**

**The Total Project Provided Water Quality Volume exceeds the Required Water Quality Volume**

**The required minimum RRv is provided in the Vegetated Swales and Infiltration Basin.**

Vegetated Swales used for RRv are located in A & D Soils.  
 See RRv Vegetated Swale Summary for WQv reduction justification.

Shangri-La Greenhouses - Vegetated Swale RRV Justification Summary

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Chapter 5 of the NYS Stormwater Design Manual Outlines Sizing Criteria that needs to be met in order to claim WQv reduction for the use of Vegetated Swales.

The following chart summarizes the sizing criteria outlined in the manual and that provided in the design.

| Design Criteria       | Required               | Provided in Swale 11R | Provided in Swale 7R | Provided in Swale 8R | Provided in Swale 9R |
|-----------------------|------------------------|-----------------------|----------------------|----------------------|----------------------|
| Bottom Width          | 2' minimum, 6' maximum | 2'                    | 4'                   | 2'                   | 2'                   |
| Side Slopes           | 3:1 maximum            | 3:1                   | 3:1                  | 3:1                  | 3:1                  |
| Swale Length          | 100' minimum           | 268'                  | 318'                 | 568'                 | 764'                 |
| WQv Detention Time    | 10 minutes minimum     | N/A*                  | 19.3 minutes         | N/A*                 | 104.6 minutes        |
| Longitudinal Slope    | 4.0% maximum           | 0.5 Percent           | 1.3 Percent          | 1.6 Percent          | 0.6 Percent          |
| WQv Velocity          | 1 fps maximum          | N/A*                  | 0.86 fps             | N/A*                 | 0.37 fps             |
| WQv Water Depth       | 4" maximum             | N/A*                  | 3.8"                 | N/A*                 | 2.0"                 |
| 10-yr Storm Freeboard | 6" minimum             | 10.8"                 | 7.7"                 | 10.6"                | 6.0"                 |
| 10-yr Storm Velocity  | 5.0 fps maximum        | 1.16 fps              | 1.70 fps             | 0.51 fps             | 0.84 fps             |
| n-value               | 0.03 - 0.15            | 0.035                 | 0.08                 | 0.08                 | 0.08                 |

\* The WQv Storm Event does not reach the proposed swales. Therefore, WQv Detention Time, Velocity, and Depth would be less than the required design criteria.

The proposed vegetated swales 6R, 7R, 8R and 9R meet the design criteria to provide a Reduction in the Water Quality Volume based on soil type for their respective drainage areas. See Water Quality and Runoff Reduction Volume Calculations for summary.

**APPENDIX G**  
**SUBSURFACE INVESTIGATIONS**  
**SOIL INFORMATION**

## **Shangri - La Greenhouses and Farmstand Test Pits and Infiltration Testing**

Date: 09/12/2024

Weather: 80 degrees, sunny

Logged by: Scott Miller, Siela Zembsch

### **Test Pits:**

#### **TP-1**

| Depth     | Description  |
|-----------|--|
| 0" - 42"  | Brown (10yr/4/3) Loamy Sand, No Roots, No Rocks, Damp                              |
| 42" - 10' | Olive Brown (2.5yr/4/3) Loamy Fine Sand, No Roots, No Rocks,<br>Water Weeps at 60" |

\*No Bedrock

#### **TP-2**

| Depth    | Description  |
|----------|--|
| 0" - 32" | Strong Brown (7.5yr/4/6) Loamy Sand, No Rocks, Roots Top 1'                    |
| 32" - 9' | Grayish Brown (10yr/5/2) Loamy Sand, No Rocks, No Roots,<br>Water Weeps at 32" |

\*No Bedrock

#### **TP-3**

| Depth    | Description   |
|----------|---|
| 0" - 32" | Very Dark Brown (10yr/2/2) Loamy Sand, Roots Throughout, No Rocks |
| 32" - 8' | Brown (7.5yr/4/4) Loamy Sand, No Roots, No Rocks                  |

\*No Bedrock

\*Groundwater @ 8'

#### **TP-4**

| Depth     | Description  |
|-----------|--|
| 0" - 24"  | Dark Yellowish Brown (10yr/4/4) Loamy Sand, No Rocks, Very Little Roots    |
| 24" - 44" | Very Dark Brown (10yr/2/2) Loamy Sand, No Roots, No Rocks                  |
| 44" - 8'  | Gray (10yr/5/1) Silty Clay Loam, No Roots, No Rocks,<br>Water Weeps at 44" |

\*No Bedrock

**Infiltration Testing:**

Date: 09/12/2024

Weather: 80 degrees, sunny

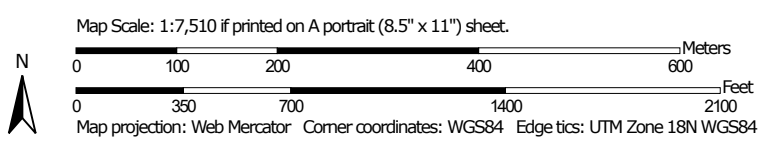
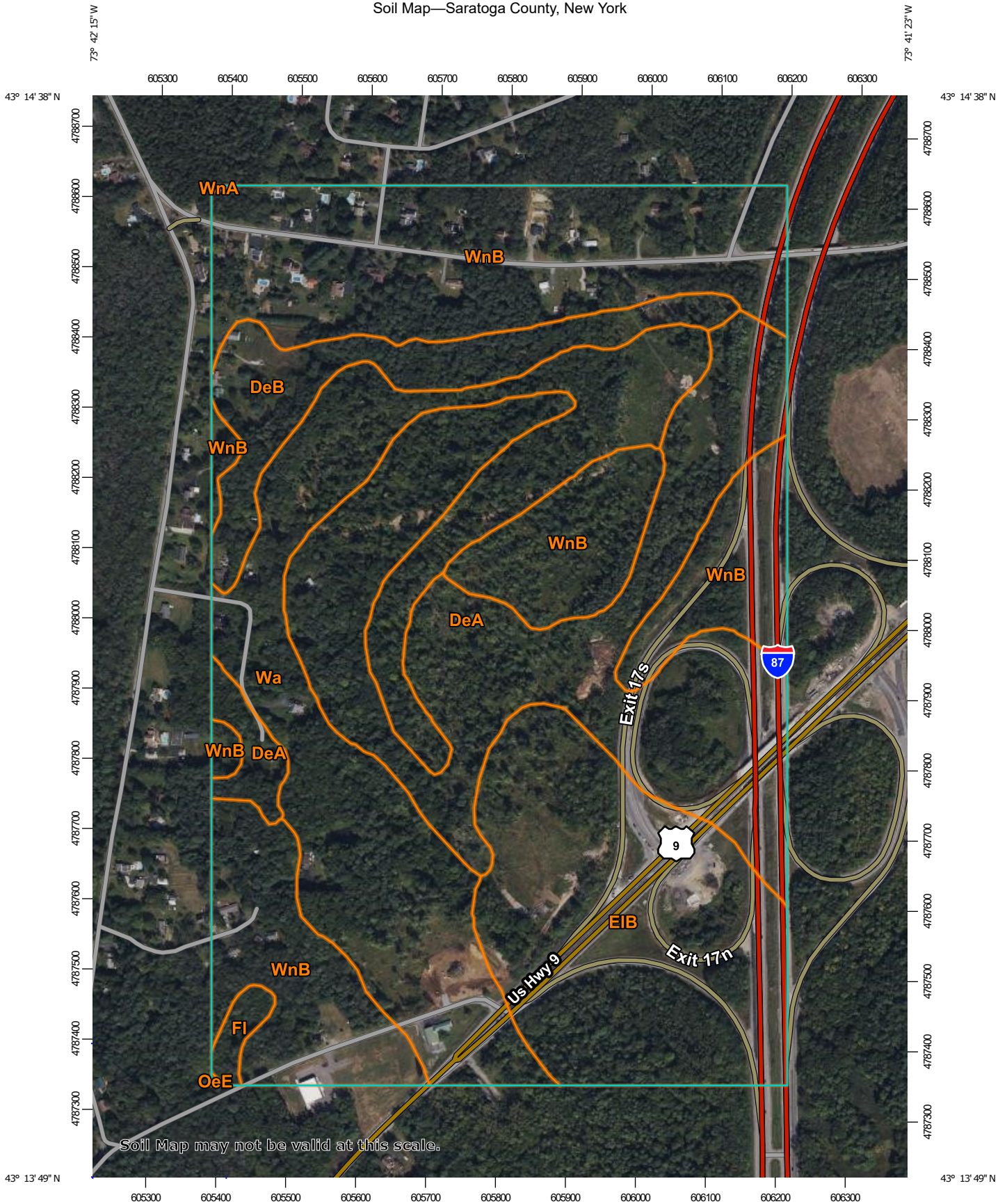
Logged by: Scott Miller, Siela Zembsch

Infiltration testing performed per NYS 2015 Stormwater Design Manual, Appendix D with 4" diameter casing, 30" long, with presoaking prior to running tests. Casing refilled to 24" depth. All tests ran at 4' depth plus additional 2' auger depth (6' from existing ground to bottom of casing). No testing performed in pits 1, 2 and 4. Results as follows:

**TP-3**


|        |  |
|--------|--|
| Test 1 | Fully Drained In 0:04.26 = 324.7 in/hr |
| Test 2 | Fully Drained In 0:06.26 = 223.9 in/hr |
| Test 3 | Fully Drained In 0:07.10 = 200.9 in/hr |
| Test 4 | Fully Drained In 0:06.42 = 215.0 in/hr |
| Test 5 | Fully Drained In 0:07.18 = 197.3 in/hr |

Soil Map—Saratoga County, New York




## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Saratoga County, New York

Survey Area Data: Version 24, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 9, 2022—Oct 22, 2022

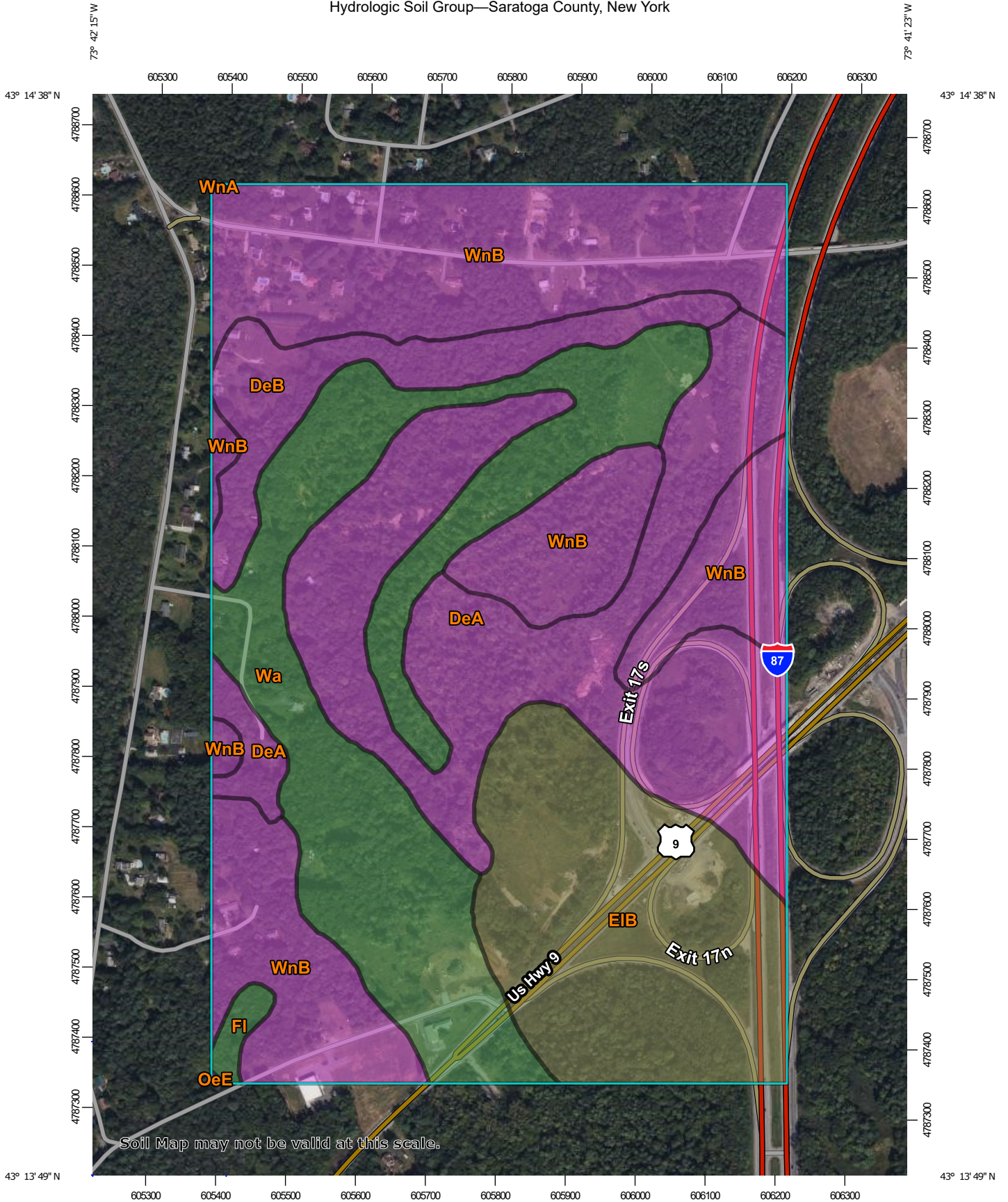
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



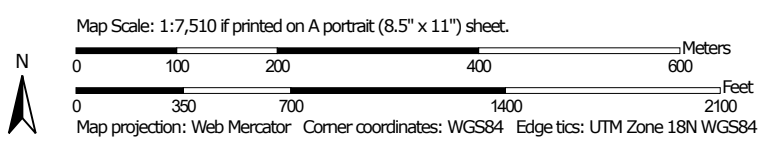
## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name  | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| DeA                                | Deerfield loamy fine sand, 0 to 3 percent slopes     | 62.6         | 23.9%          |
| DeB                                | Deerfield loamy fine sand, 3 to 8 percent slopes     | 15.7         | 6.0%           |
| EIB                                | Elmridge very fine sandy loam, 3 to 8 percent slopes | 44.7         | 17.1%          |
| FI                                 | Fluvaquents frequently flooded                       | 1.6          | 0.6%           |
| OeE                                | Windsor loamy sand, 25 to 35 percent slopes          | 0.0          | 0.0%           |
| Wa                                 | Wareham loamy sand                                   | 56.4         | 21.5%          |
| WnA                                | Windsor loamy sand, 0 to 3 percent slopes            | 0.0          | 0.0%           |
| WnB                                | Windsor loamy sand, 3 to 8 percent slopes            | 80.6         | 30.8%          |
| <b>Totals for Area of Interest</b> |  | <b>261.7</b> | <b>100.0%</b>  |

Hydrologic Soil Group—Saratoga County, New York




Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points




 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Saratoga County, New York  
 Survey Area Data: Version 24, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 9, 2022—Oct 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Map unit symbol                    | Map unit name  | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------|--------------|----------------|
| DeA                                | Deerfield loamy fine sand, 0 to 3 percent slopes     | A      | 62.6         | 23.9%          |
| DeB                                | Deerfield loamy fine sand, 3 to 8 percent slopes     | A      | 15.7         | 6.0%           |
| EIB                                | Elmridge very fine sandy loam, 3 to 8 percent slopes | C/D    | 44.7         | 17.1%          |
| FI                                 | Fluvaquents frequently flooded                       | A/D    | 1.6          | 0.6%           |
| OeE                                | Windsor loamy sand, 25 to 35 percent slopes          | A      | 0.0          | 0.0%           |
| Wa                                 | Wareham loamy sand                                   | A/D    | 56.4         | 21.5%          |
| WnA                                | Windsor loamy sand, 0 to 3 percent slopes            | A      | 0.0          | 0.0%           |
| WnB                                | Windsor loamy sand, 3 to 8 percent slopes            | A      | 80.6         | 30.8%          |
| <b>Totals for Area of Interest</b> |  |        | <b>261.7</b> | <b>100.0%</b>  |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Saratoga County, New York

### DeA—Deerfield loamy fine sand, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2xfg8

*Elevation:* 0 to 1,100 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 145 to 240 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Deerfield and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Deerfield

##### Setting

*Landform:* Outwash terraces, outwash deltas, outwash plains, kame terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave, convex, linear

*Across-slope shape:* Convex, linear, concave

*Parent material:* Sandy outwash derived from granite, gneiss, and/or quartzite

##### Typical profile

*Ap - 0 to 9 inches:* loamy fine sand

*Bw - 9 to 25 inches:* loamy fine sand

*BC - 25 to 33 inches:* fine sand

*Cg - 33 to 60 inches:* sand

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to very high (1.42 to 99.90 in/hr)

*Depth to water table:* About 15 to 37 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Sodium adsorption ratio, maximum:* 11.0

*Available water supply, 0 to 60 inches:* Moderate (about 6.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* A  
*Ecological site:* F144AY027MA - Moist Sandy Outwash  
*Hydric soil rating:* No

### **Minor Components**

#### **Windsor**

*Percent of map unit:* 7 percent  
*Landform:* Outwash terraces, kame terraces, outwash deltas, outwash plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave, convex, linear  
*Across-slope shape:* Convex, linear, concave  
*Hydric soil rating:* No

#### **Wareham**

*Percent of map unit:* 5 percent  
*Landform:* Drainageways, depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### **Sudbury**

*Percent of map unit:* 2 percent  
*Landform:* Outwash plains, kame terraces, outwash deltas, outwash terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave, convex, linear  
*Across-slope shape:* Convex, linear, concave  
*Hydric soil rating:* No

#### **Ninigret**

*Percent of map unit:* 1 percent  
*Landform:* Kame terraces, outwash plains, outwash terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, concave  
*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Saratoga County, New York  
Survey Area Data: Version 24, Aug 29, 2024

## Saratoga County, New York

### DeB—Deerfield loamy fine sand, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2xfg9

*Elevation:* 0 to 1,190 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 145 to 240 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Deerfield and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Deerfield

##### Setting

*Landform:* Outwash deltas, outwash terraces, outwash plains, kame terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave, convex, linear

*Across-slope shape:* Convex, linear, concave

*Parent material:* Sandy outwash derived from granite, gneiss, and/or quartzite

##### Typical profile

*Ap - 0 to 9 inches:* loamy fine sand

*Bw - 9 to 25 inches:* loamy fine sand

*BC - 25 to 33 inches:* fine sand

*Cg - 33 to 60 inches:* sand

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to very high (1.42 to 99.90 in/hr)

*Depth to water table:* About 15 to 37 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Sodium adsorption ratio, maximum:* 11.0

*Available water supply, 0 to 60 inches:* Moderate (about 6.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified



*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* A  
*Ecological site:* F144AY027MA - Moist Sandy Outwash  
*Hydric soil rating:* No

### **Minor Components**

#### **Windsor**

*Percent of map unit:* 7 percent  
*Landform:* Outwash terraces, outwash plains, kame terraces, outwash deltas  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave, convex, linear  
*Across-slope shape:* Convex, linear, concave  
*Hydric soil rating:* No

#### **Wareham**

*Percent of map unit:* 5 percent  
*Landform:* Drainageways, depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### **Sudbury**

*Percent of map unit:* 2 percent  
*Landform:* Kame terraces, outwash deltas, outwash terraces, outwash plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave, convex, linear  
*Across-slope shape:* Convex, linear, concave  
*Hydric soil rating:* No

#### **Ninigret**

*Percent of map unit:* 1 percent  
*Landform:* Outwash plains, outwash terraces, kame terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, concave  
*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Saratoga County, New York  
Survey Area Data: Version 24, Aug 29, 2024

## Saratoga County, New York

### EIB—Elmridge very fine sandy loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9w9w  
*Elevation:* 130 to 410 feet  
*Mean annual precipitation:* 36 to 48 inches  
*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 125 to 160 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Elmridge and similar soils:* 70 percent  
*Minor components:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Elmridge

##### Setting

*Landform:* Lake plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Parent material:* Loamy over clayey glaciolacustrine or marine deposits

##### Typical profile

*H1 - 0 to 8 inches:* very fine sandy loam  
*H2 - 8 to 18 inches:* very fine sandy loam  
*2Bw - 18 to 39 inches:* silty clay  
*2C - 39 to 72 inches:* clay

##### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Available water supply, 0 to 60 inches:* Low (about 3.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C/D

*Ecological site:* F144AY018NY - Moist Lake Plain  
*Hydric soil rating:* No

### **Minor Components**

#### **Unnamed soils**

*Percent of map unit:* 15 percent

#### **Oakville**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### **Deerfield**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### **Shaker**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Saratoga County, New York

Survey Area Data: Version 24, Aug 29, 2024

## Saratoga County, New York

### Wa—Wareham loamy sand

#### Map Unit Setting

*National map unit symbol:* 9wd4

*Elevation:* 100 to 1,000 feet

*Mean annual precipitation:* 36 to 48 inches

*Mean annual air temperature:* 45 to 48 degrees F

*Frost-free period:* 125 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Wareham, poorly drained, and similar soils:* 70 percent

*Minor components:* 30 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Wareham, Poorly Drained

##### Setting

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Sandy glaciofluvial or deltaic deposits

##### Typical profile

*O<sub>i</sub> - 0 to 2 inches:* slightly decomposed plant material

*H<sub>2</sub> - 2 to 8 inches:* loamy sand

*H<sub>3</sub> - 8 to 19 inches:* loamy sand

*C - 19 to 72 inches:* sand

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water*

*(K<sub>sat</sub>):* Moderately high to high (0.20 to 5.95 in/hr)

*Depth to water table:* About 0 to 18 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* A/D

*Ecological site:* F144AY028MA - Wet Outwash

*Hydric soil rating:* Yes

### **Minor Components**

#### **Wareham, somewhat poorly drained**

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

#### **Deerfield**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### **Raynham**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### **Cheektowaga**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Scarboro**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Saratoga County, New York

Survey Area Data: Version 24, Aug 29, 2024

## Saratoga County, New York

### WnB—Windsor loamy sand, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2svkf

*Elevation:* 0 to 1,210 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 250 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Windsor and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Windsor

##### Setting

*Landform:* Outwash terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

##### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 3 inches:* loamy sand

*Bw - 3 to 25 inches:* loamy sand

*C - 25 to 65 inches:* sand

##### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Excessively drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to very high (1.42 to 99.90 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water supply, 0 to 60 inches:* Low (about 4.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* A

*Ecological site:* F145XY008MA - Dry Outwash  
*Hydric soil rating:* No

### **Minor Components**

#### **Hinckley**

*Percent of map unit:* 10 percent  
*Landform:* Eskers  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* F145XY008MA - Dry Outwash  
*Hydric soil rating:* No

#### **Deerfield, loamy sand**

*Percent of map unit:* 5 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* F144AY027MA - Moist Sandy Outwash  
*Hydric soil rating:* No

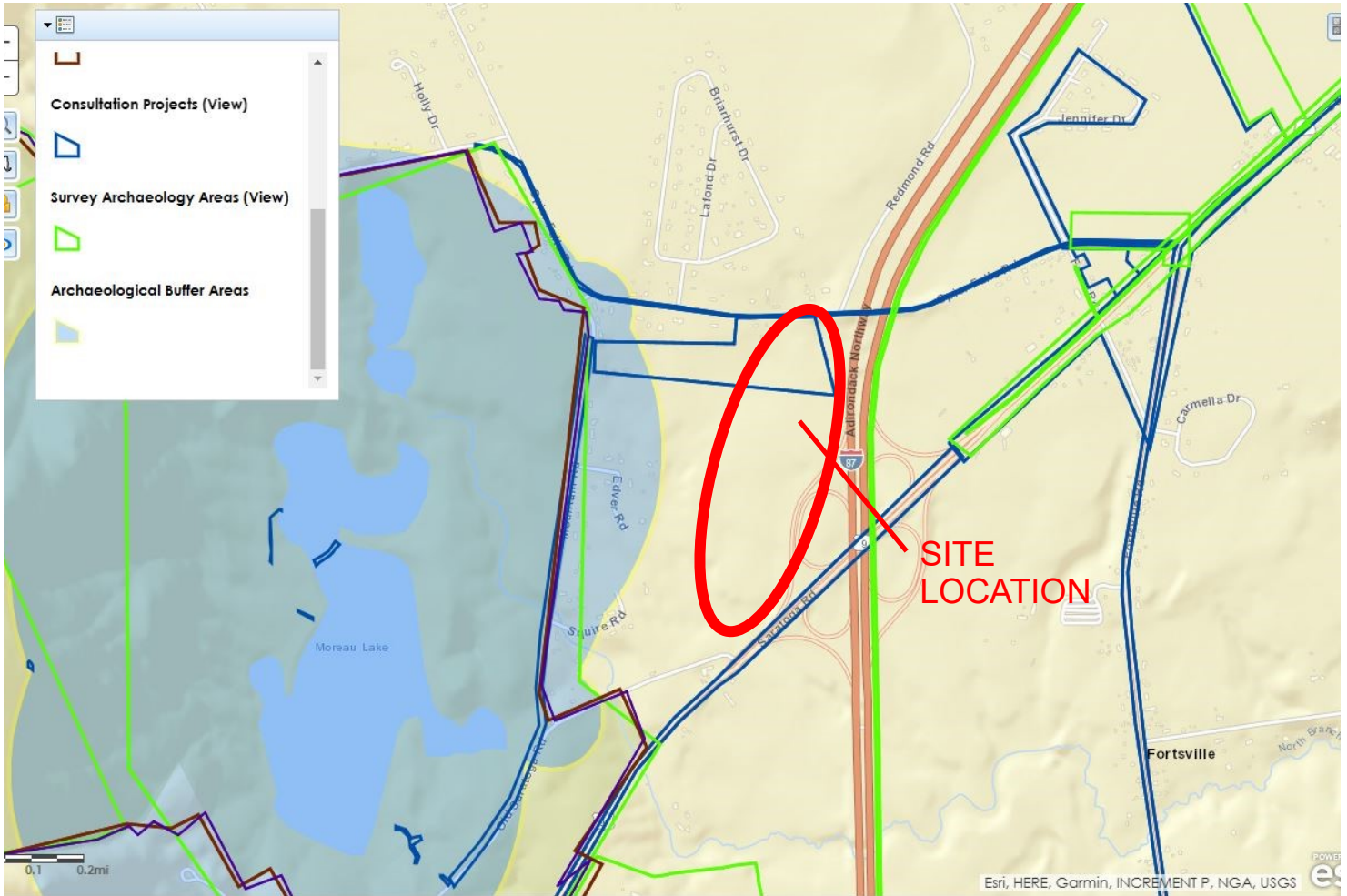
## **Data Source Information**

Soil Survey Area: Saratoga County, New York  
Survey Area Data: Version 24, Aug 29, 2024

**APPENDIX H**

**NEW YORK STATE OFFICE OF PARKS, RECREATION AND HISTORIC  
PRESERVATION DETERMINATION**





LANDSCAPE ARCHITECTURE ■ ENGINEERING ■ PLANNING, P.C.

*Designs that Build*

**SHPO Archeological Assessment  
Shangri-La Greenhouses and Farmstand  
Town of Moreau, Hamilton County, State of New York**

**FIGURE 1**

**APPENDIX I**

**NYSDEC SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES  
FROM CONSTRUCTION ACTIVITIES**



Department of  
Environmental  
Conservation

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT  
FOR STORMWATER DISCHARGES

From

**CONSTRUCTION ACTIVITY**

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70  
of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator



Authorized Signature

1-23-20  
Date

Address: NYS DEC  
Division of Environmental Permits  
625 Broadway, 4th Floor  
Albany, N.Y. 12233-1750

## PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System (“NPDES”)* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of “*construction activity*”, as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

**\*Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM  
CONSTRUCTION ACTIVITIES**

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## Part 1. PERMIT COVERAGE AND LIMITATIONS

### A. Permit Application

This permit authorizes stormwater *discharges to surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants to surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

### B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharges* authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize the discharge of pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

- a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:
- (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*;
  - (ii) Control stormwater *discharges*, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;
  - (iii) *Minimize* the amount of soil exposed during *construction activity*;
  - (iv) *Minimize* the disturbance of *steep slopes*;
  - (v) *Minimize* sediment *discharges* from the site;
  - (vi) Provide and maintain *natural buffers* around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, unless *infeasible*;
  - (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;
  - (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and
  - (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.
- b. **Soil Stabilization.** In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments



listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

- c. **Dewatering.** *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.
  
- d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:
  - (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;
  
  - (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and
  
  - (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.
  
- e. **Prohibited Discharges.** The following *discharges* are prohibited:
  - (i) Wastewater from washout of concrete;
  
  - (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

- (iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;
  - (iv) Soaps or solvents used in vehicle and equipment washing; and
  - (v) Toxic or hazardous substances from a spill or other release.
- f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

### **C. Post-construction Stormwater Management Practice Requirements**

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices (“SMPs”) are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

#### **a. Sizing Criteria for New Development**

- (i) Runoff Reduction Volume (“RRv”): Reduce the total Water Quality Volume (“WQv”) by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

**In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual.**

The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (“Cpv”): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site discharges directly to tidal waters, or fifth order or larger streams.
  
- (iv) *Overbank* Flood Control Criteria (“Qp”): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site discharges directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.
  
- (v) Extreme Flood Control Criteria (“Qf”): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site discharges directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.

**b. Sizing Criteria for New Development in Enhanced Phosphorus Removal Watershed**

- (i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

- (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual.** The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.
- (v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that *overbank* control is not required.

### c. Sizing Criteria for Redevelopment Activity

- (i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.
- (1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
  - (2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
  - (3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
  - (4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

- (ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

**d. Sizing Criteria for Combination of Redevelopment Activity and New Development**

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

**D. Maintaining Water Quality**

The Department expects that compliance with the conditions of this permit will control *discharges* necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;
2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

## **E. Eligibility Under This General Permit**

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges*; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.
3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharges* from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.
4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

## **F. Activities Which Are Ineligible for Coverage Under This General Permit**

All of the following are **not** authorized by this permit:

1. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;
4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

*operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;
6. *Construction activities* for residential, commercial and institutional projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which are undertaken on land with no existing *impervious cover*; and
  - c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture (“USDA”) Soil Survey as Soil Slope Phase “D”, (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase “E” or “F” (regardless of the map unit name), or a combination of the three designations.
7. *Construction activities* for linear transportation projects and linear utility projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which are undertaken on land with no existing *impervious cover*; and
  - c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase “D” (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase “E” or “F” (regardless of the map unit name), or a combination of the three designations.



8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:
- a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.
    - 1-5 acres of disturbance - 20 feet
    - 5-20 acres of disturbance - 50 feet
    - 20+ acres of disturbance - 100 feet, or
  - b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
    - (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
    - (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
    - (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
    - (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or
  - c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

- (i) No Affect
- (ii) No Adverse Affect
- (iii) Executed Memorandum of Agreement, or

d. Documentation that:

- (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.
9. *Discharges from construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

## Part II. PERMIT COVERAGE

### A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.
2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.
3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

## B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (<http://www.dec.ny.gov/>). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

**NOTICE OF INTENT  
NYS DEC, Bureau of Water Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, New York 12233-3505**

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.
3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

## C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
  - a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (<http://www.dec.ny.gov/>) for more information,
  - b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators of construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

- c. the final SWPPP has been prepared, and
  - d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:
- a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:
    - (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or
    - (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;
    - (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

- b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:
  - (i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed “MS4 SWPPP Acceptance” form, or
  - (ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed “MS4 SWPPP Acceptance” form.
4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

#### **D. General Requirements For Owners or Operators With Permit Coverage**

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (“NOT”) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor’s or subcontractor’s certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.
3. The *owner or operator of a construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

- use control MS4, the regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:
- a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
  - b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
  - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
  - d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.
  - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..
  5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
  6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

*regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

#### **E. Permit Coverage for Discharges Authorized Under GP-0-15-002**

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of a *construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

#### **F. Change of Owner or Operator**

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4*, the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.
2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.
3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

*operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

### Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

#### A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.
2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:
  - a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;



- b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;
  - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority; and
  - d. to document the final construction conditions.
5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.
6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

## **B. Required SWPPP Contents**

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:
  - a. Background information about the scope of the project, including the location, type and size of project

- b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge(s)*;
- c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);
- d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;
- e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;
- f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;
- g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;
- h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;
- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

- j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;
  - k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and
  - l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

The post-construction stormwater management practice component of the SWPPP shall include the following:

- a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
- c. A Stormwater Modeling and Analysis Report that includes:
  - (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;
  - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;
  - (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;
  - (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;
  - (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and
  - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;
- d. Soil testing results and locations (test pits, borings);
- e. Infiltration test results, when required; and
- f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria*, Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

### **C. Required SWPPP Components by Project Type**

Unless otherwise notified by the Department, *owners or operators of construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators of the construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

## **Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS**

### **A. General Construction Site Inspection and Maintenance Requirements**

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

### **B. Contractor Maintenance Inspection Requirements**

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

### C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
  - Certified Professional in Erosion and Sediment Control (CPESC),
  - New York State Erosion and Sediment Control Certificate Program holder
  - Registered Landscape Architect, or
  - someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].
1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:
    - a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

- b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
  - c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
  - d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:
- a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.
  - b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
  - c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.



- d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice*” certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.
  - e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.
  4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

- a. Date and time of inspection;
- b. Name and title of person(s) performing inspection;
- c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
- d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
- e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
- f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;
- g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
- h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;
- i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
- j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
- k. Identification and status of all corrective actions that were required by previous inspection; and

- I. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

## **Part V. TERMINATION OF PERMIT COVERAGE**

### **A. Termination of Permit Coverage**

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.
2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:
  - a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

- b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;
      - c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.
      - d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.
3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice certification statements*” on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.
4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the “*MS4 Acceptance*” statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) required in Part V.A.3. of this permit.
5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:
  - a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

- b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),
- c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,
- d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

## **Part VI. REPORTING AND RETENTION RECORDS**

### **A. Record Retention**

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

### **B. Addresses**

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

## **Part VII. STANDARD PERMIT CONDITIONS**

### **A. Duty to Comply**

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

#### **B. Continuation of the Expired General Permit**

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

#### **C. Enforcement**

Failure of the *owner or operator*, its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to \$37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

#### **D. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

### **E. Duty to Mitigate**

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### **F. Duty to Provide Information**

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

### **G. Other Information**

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

### **H. Signatory Requirements**

1. All NOIs and NOTs shall be signed as follows:
  - a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

- (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
    - (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or
  - c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
    - (i) the chief executive officer of the agency, or
    - (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,



superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

- c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.
3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.
4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

#### **I. Property Rights**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

#### **J. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

#### **K. Requirement to Obtain Coverage Under an Alternative Permit**

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge(s)*, the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

#### **L. Proper Operation and Maintenance**

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

#### **M. Inspection and Entry**

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner's or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.
4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

#### **N. Permit Actions**

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

#### **O. Definitions**

Definitions of key terms are included in Appendix A of this permit.

#### **P. Re-Opener Clause**

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

#### **Q. Penalties for Falsification of Forms and Reports**

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

**R. Other Permits**

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

## **APPENDIX A – Acronyms and Definitions**

### **Acronyms**

APO – Agency Preservation Officer

BMP – Best Management Practice

CPESC – Certified Professional in Erosion and Sediment Control

Cpv – Channel Protection Volume

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)

DOW – Division of Water

EAF – Environmental Assessment Form

ECL - Environmental Conservation Law

EPA – U. S. Environmental Protection Agency

HSG – Hydrologic Soil Group

MS4 – Municipal Separate Storm Sewer System

NOI – Notice of Intent

NOT – Notice of Termination

NPDES – National Pollutant Discharge Elimination System

OPRHP – Office of Parks, Recreation and Historic Places

Qf – Extreme Flood

Qp – Overbank Flood

RRv – Runoff Reduction Volume

RWE – Regional Water Engineer

SEQR – State Environmental Quality Review

SEQRA - State Environmental Quality Review Act

SHPA – State Historic Preservation Act

SPDES – State Pollutant Discharge Elimination System

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

UPA – Uniform Procedures Act

USDA – United States Department of Agriculture

WQv – Water Quality Volume

## Definitions

All definitions in this section are solely for the purposes of this permit.

**Agricultural Building** – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

**Agricultural Property** – means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State” prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

**Alter Hydrology from Pre to Post-Development Conditions** - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

**Combined Sewer** - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

**Commence (Commencement of) Construction Activities** - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

**Construction Activity(ies)** - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

**Construction Site** – means the land area where *construction activity(ies)* will occur. See definition for “*Commence (Commencement of) Construction Activities*” and “*Larger Common Plan of Development or Sale*” also.

**Dewatering** – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

**Direct Discharge (to a specific surface waterbody)** - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

**Discharge(s)** - means any addition of any pollutant to waters of the State through an outlet or *point source*.

**Embankment** –means an earthen or rock slope that supports a road/highway.

**Endangered or Threatened Species** – see 6 NYCRR Part 182 of the Department’s rules and regulations for definition of terms and requirements.

**Environmental Conservation Law (ECL)** - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

**Equivalent (Equivalence)** – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

**Final Stabilization** - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

**General SPDES permit** - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

**Groundwater(s)** - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

**Historic Property** – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

**Impervious Area (Cover)** - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

**Infeasible** – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

**Larger Common Plan of Development or Sale** - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

**Minimize** – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer (MS4)** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a *combined sewer*, and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**National Pollutant Discharge Elimination System (NPDES)** - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

**Natural Buffer** –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

**New Development** – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.



**New York State Erosion and Sediment Control Certificate Program** – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

**NOI Acknowledgment Letter** - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

**Nonpoint Source** - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

**Overbank** –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

**Owner or Operator** - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

**Performance Criteria** – means the design criteria listed under the “Required Elements” sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf ) in Part I.C.2. of the permit.

**Point Source** - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

**Pollutant** - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

**Qualified Inspector** - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

**Redevelopment Activity(ies)** – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

**Regulated, Traditional Land Use Control MS4** - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

**Routine Maintenance Activity** - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

**Site limitations** – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

**Sizing Criteria** – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank Flood* (Qp), and *Extreme Flood* (Qf).

**State Pollutant Discharge Elimination System (SPDES)** - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

**Steep Slope** – means land area designated on the current United States Department of Agriculture (“USDA”) Soil Survey as Soil Slope Phase “D”, (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

**Streambank** – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

**Stormwater Pollution Prevention Plan (SWPPP)** – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

**Surface Waters of the State** - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

**Temporarily Ceased** – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

**Temporary Stabilization** - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

**Total Maximum Daily Loads (TMDLs)** - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint sources*. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint sources*, and a margin of safety (MOS).

**Trained Contractor** - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

**Uniform Procedures Act (UPA) Permit** - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

**Water Quality Standard** - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

## APPENDIX B – Required SWPPP Components by Project Type

**Table 1**  
**Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls**

|  |
|--|
| <p><b>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</b></p> <ul style="list-style-type: none"><li>• Single family home <u>not</u> located in one of the watersheds listed in Appendix C or <u>not directly discharging</u> to one of the 303(d) segments listed in Appendix E</li><li>• Single family residential subdivisions with 25% or less impervious cover at total site build-out and <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E</li><li>• Construction of a barn or other <i>agricultural building</i>, silo, stock yard or pen.</li></ul>   |
| <p><b>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</b></p> <p>All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.</p>   |
| <p><b>The following construction activities that involve soil disturbances of one (1) or more acres of land:</b></p> <ul style="list-style-type: none"><li>• Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains</li><li>• Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects</li><li>• Pond construction</li><li>• Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover</li><li>• Cross-country ski trails and walking/hiking trails</li><li>• Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;</li><li>• Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.</li><li>• Slope stabilization projects</li><li>• Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics</li></ul> |

**Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State”, excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

**Table 2**  
**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES**  
**POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1



Table 2 (Continued)

**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES**

The following construction activities that involve soil disturbances of one (1) or more acres of land:

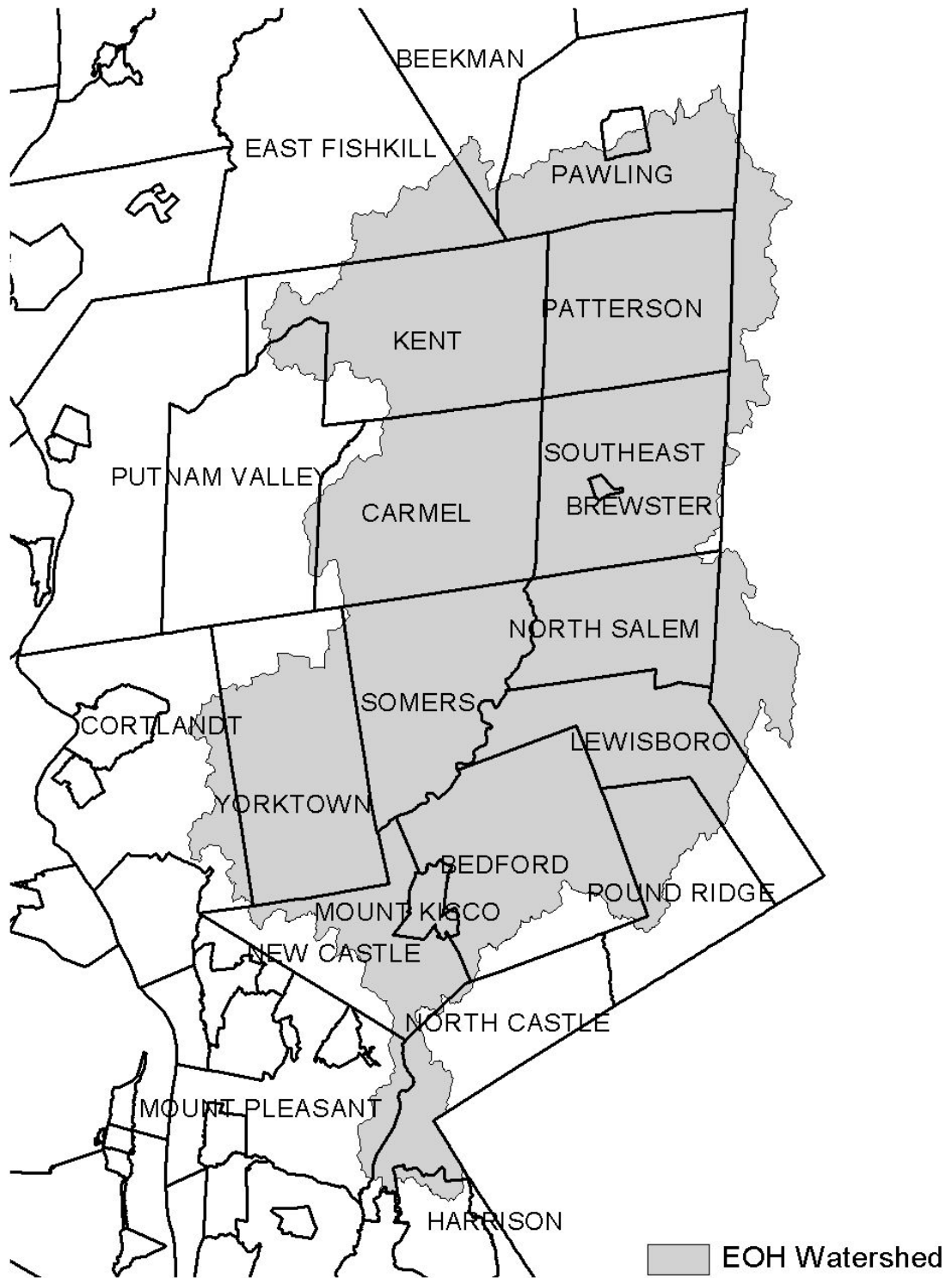
- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover*, and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

## APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

**Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).**

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

**Figure 1 - New York City Watershed East of the Hudson**



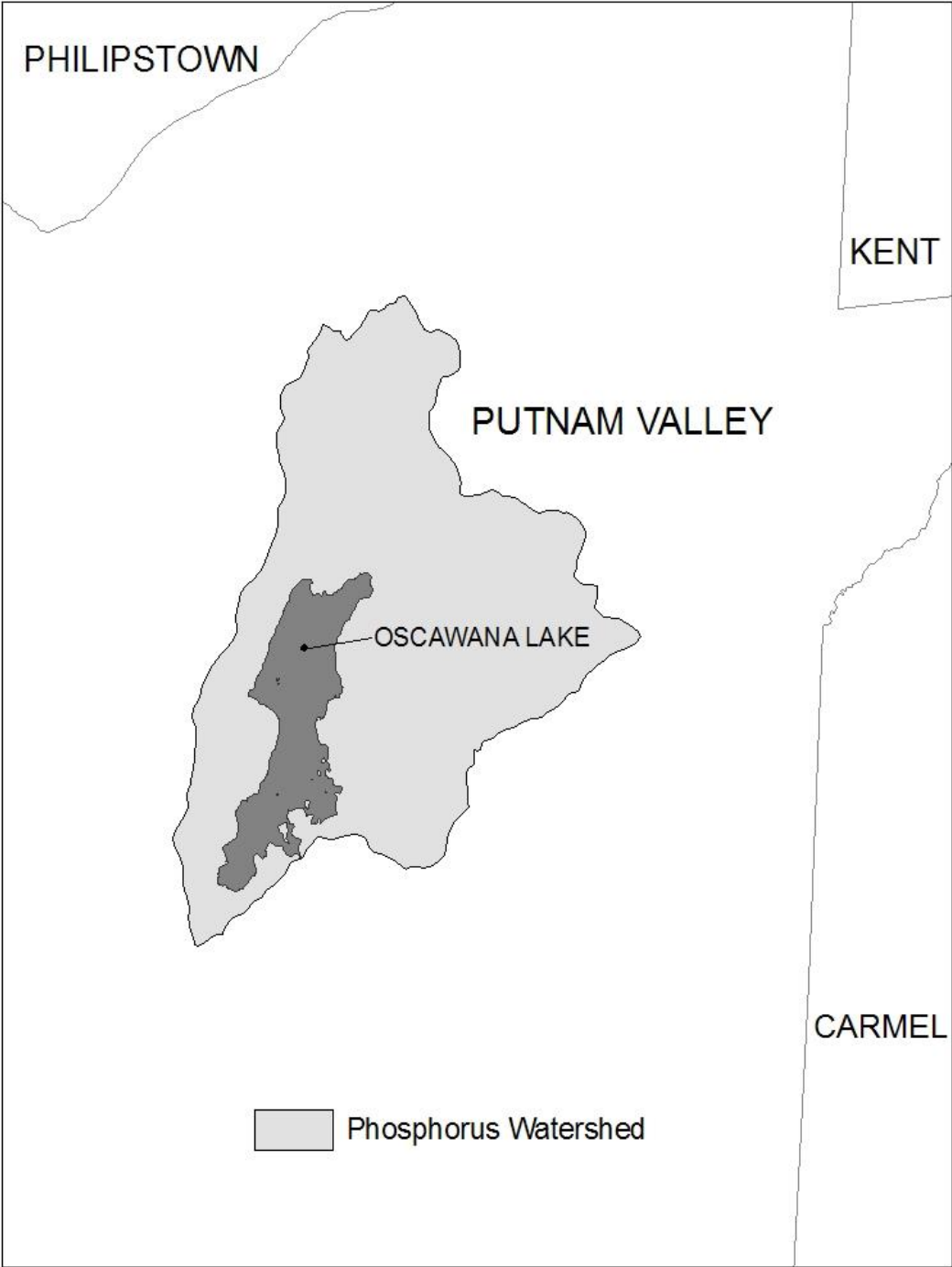
**Figure 2 - Onondaga Lake Watershed**



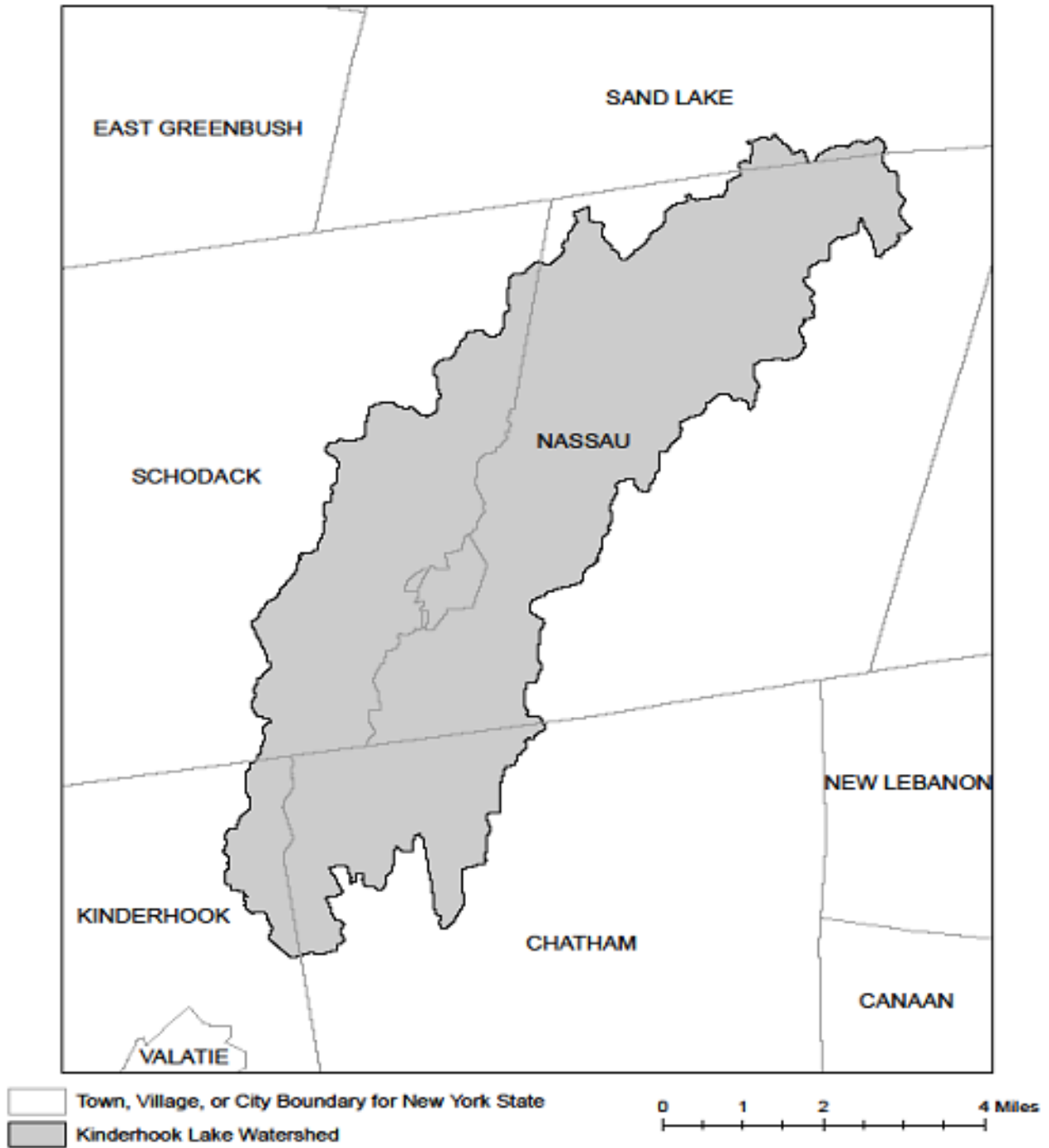
**Figure 3 - Greenwood Lake Watershed**



**Figure 4 - Oscawana Lake Watershed**



**Figure 5 - Kinderhook Lake Watershed**



## **APPENDIX D – Watersheds with Lower Disturbance Threshold**

**Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.**

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C



## APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

| COUNTY      | WATERBODY                                | POLLUTANT     |
|-------------|--|---------------|
| Albany      | Ann Lee (Shakers) Pond, Stump Pond       | Nutrients     |
| Albany      | Basic Creek Reservoir                    | Nutrients     |
| Allegany    | Amity Lake, Saunders Pond                | Nutrients     |
| Bronx       | Long Island Sound, Bronx                 | Nutrients     |
| Bronx       | Van Cortlandt Lake                       | Nutrients     |
| Broome      | Fly Pond, Deer Lake, Sky Lake            | Nutrients     |
| Broome      | Minor Tribs to Lower Susquehanna (north) | Nutrients     |
| Broome      | Whitney Point Lake/Reservoir             | Nutrients     |
| Cattaraugus | Allegheny River/Reservoir                | Nutrients     |
| Cattaraugus | Beaver (Alma) Lake                       | Nutrients     |
| Cattaraugus | Case Lake                                | Nutrients     |
| Cattaraugus | Linlyco/Club Pond                        | Nutrients     |
| Cayuga      | Duck Lake                                | Nutrients     |
| Cayuga      | Little Sodus Bay                         | Nutrients     |
| Chautauqua  | Bear Lake                                | Nutrients     |
| Chautauqua  | Chadakoin River and tribs                | Nutrients     |
| Chautauqua  | Chautauqua Lake, North                   | Nutrients     |
| Chautauqua  | Chautauqua Lake, South                   | Nutrients     |
| Chautauqua  | Findley Lake                             | Nutrients     |
| Chautauqua  | Hulburt/Clymer Pond                      | Nutrients     |
| Clinton     | Great Chazy River, Lower, Main Stem      | Silt/Sediment |
| Clinton     | Lake Champlain, Main Lake, Middle        | Nutrients     |
| Clinton     | Lake Champlain, Main Lake, North         | Nutrients     |
| Columbia    | Kinderhook Lake                          | Nutrients     |
| Columbia    | Robinson Pond                            | Nutrients     |
| Cortland    | Dean Pond                                | Nutrients     |

### 303(d) Segments Impaired by Construction Related Pollutant(s)

|            |   |               |
|------------|---|---------------|
| Dutchess   | Fall Kill and tribs                     | Nutrients     |
| Dutchess   | Hillside Lake                           | Nutrients     |
| Dutchess   | Wappingers Lake                         | Nutrients     |
| Dutchess   | Wappingers Lake                         | Silt/Sediment |
| Erie       | Beeman Creek and tribs                  | Nutrients     |
| Erie       | Ellicott Creek, Lower, and tribs        | Silt/Sediment |
| Erie       | Ellicott Creek, Lower, and tribs        | Nutrients     |
| Erie       | Green Lake                              | Nutrients     |
| Erie       | Little Sister Creek, Lower, and tribs   | Nutrients     |
| Erie       | Murder Creek, Lower, and tribs          | Nutrients     |
| Erie       | Rush Creek and tribs                    | Nutrients     |
| Erie       | Scajaquada Creek, Lower, and tribs      | Nutrients     |
| Erie       | Scajaquada Creek, Middle, and tribs     | Nutrients     |
| Erie       | Scajaquada Creek, Upper, and tribs      | Nutrients     |
| Erie       | South Branch Smoke Cr, Lower, and tribs | Silt/Sediment |
| Erie       | South Branch Smoke Cr, Lower, and tribs | Nutrients     |
| Essex      | Lake Champlain, Main Lake, South        | Nutrients     |
| Essex      | Lake Champlain, South Lake              | Nutrients     |
| Essex      | Willsboro Bay                           | Nutrients     |
| Genesee    | Bigelow Creek and tribs                 | Nutrients     |
| Genesee    | Black Creek, Middle, and minor tribs    | Nutrients     |
| Genesee    | Black Creek, Upper, and minor tribs     | Nutrients     |
| Genesee    | Bowen Brook and tribs                   | Nutrients     |
| Genesee    | LeRoy Reservoir                         | Nutrients     |
| Genesee    | Oak Orchard Cr, Upper, and tribs        | Nutrients     |
| Genesee    | Tonawanda Creek, Middle, Main Stem      | Nutrients     |
| Greene     | Schoharie Reservoir                     | Silt/Sediment |
| Greene     | Sleepy Hollow Lake                      | Silt/Sediment |
| Herkimer   | Steele Creek tribs                      | Silt/Sediment |
| Herkimer   | Steele Creek tribs                      | Nutrients     |
| Jefferson  | Moon Lake                               | Nutrients     |
| Kings      | Hendrix Creek                           | Nutrients     |
| Kings      | Prospect Park Lake                      | Nutrients     |
| Lewis      | Mill Creek/South Branch, and tribs      | Nutrients     |
| Livingston | Christie Creek and tribs                | Nutrients     |
| Livingston | Conesus Lake                            | Nutrients     |
| Livingston | Mill Creek and minor tribs              | Silt/Sediment |
| Monroe     | Black Creek, Lower, and minor tribs     | Nutrients     |
| Monroe     | Buck Pond                               | Nutrients     |
| Monroe     | Cranberry Pond                          | Nutrients     |

### 303(d) Segments Impaired by Construction Related Pollutant(s)

|          |  |               |
|----------|--|---------------|
| Monroe   | Lake Ontario Shoreline, Western          | Nutrients     |
| Monroe   | Long Pond                                | Nutrients     |
| Monroe   | Mill Creek and tribs                     | Nutrients     |
| Monroe   | Mill Creek/Blue Pond Outlet and tribs    | Nutrients     |
| Monroe   | Minor Tribs to Irondequoit Bay           | Nutrients     |
| Monroe   | Rochester Embayment - East               | Nutrients     |
| Monroe   | Rochester Embayment - West               | Nutrients     |
| Monroe   | Shipbuilders Creek and tribs             | Nutrients     |
| Monroe   | Thomas Creek/White Brook and tribs       | Nutrients     |
| Nassau   | Beaver Lake                              | Nutrients     |
| Nassau   | Camaans Pond                             | Nutrients     |
| Nassau   | East Meadow Brook, Upper, and tribs      | Silt/Sediment |
| Nassau   | East Rockaway Channel                    | Nutrients     |
| Nassau   | Grant Park Pond                          | Nutrients     |
| Nassau   | Hempstead Bay                            | Nutrients     |
| Nassau   | Hempstead Lake                           | Nutrients     |
| Nassau   | Hewlett Bay                              | Nutrients     |
| Nassau   | Hog Island Channel                       | Nutrients     |
| Nassau   | Long Island Sound, Nassau County Waters  | Nutrients     |
| Nassau   | Massapequa Creek and tribs               | Nutrients     |
| Nassau   | Milburn/Parsonage Creeks, Upp, and tribs | Nutrients     |
| Nassau   | Reynolds Channel, west                   | Nutrients     |
| Nassau   | Tidal Tribs to Hempstead Bay             | Nutrients     |
| Nassau   | Tribs (fresh) to East Bay                | Nutrients     |
| Nassau   | Tribs (fresh) to East Bay                | Silt/Sediment |
| Nassau   | Tribs to Smith/Halls Ponds               | Nutrients     |
| Nassau   | Woodmere Channel                         | Nutrients     |
| New York | Harlem Meer                              | Nutrients     |
| New York | The Lake in Central Park                 | Nutrients     |
| Niagara  | Bergholtz Creek and tribs                | Nutrients     |
| Niagara  | Hyde Park Lake                           | Nutrients     |
| Niagara  | Lake Ontario Shoreline, Western          | Nutrients     |
| Niagara  | Lake Ontario Shoreline, Western          | Nutrients     |
| Oneida   | Ballou, Nail Creeks and tribs            | Nutrients     |
| Onondaga | Harbor Brook, Lower, and tribs           | Nutrients     |
| Onondaga | Ley Creek and tribs                      | Nutrients     |
| Onondaga | Minor Tribs to Onondaga Lake             | Nutrients     |
| Onondaga | Ninemile Creek, Lower, and tribs         | Nutrients     |
| Onondaga | Onondaga Creek, Lower, and tribs         | Nutrients     |
| Onondaga | Onondaga Creek, Middle, and tribs        | Nutrients     |

### 303(d) Segments Impaired by Construction Related Pollutant(s)

|            |  |               |
|------------|--|---------------|
| Onondaga   | Onondaga Lake, northern end              | Nutrients     |
| Onondaga   | Onondaga Lake, southern end              | Nutrients     |
| Ontario    | Great Brook and minor tribs              | Silt/Sediment |
| Ontario    | Great Brook and minor tribs              | Nutrients     |
| Ontario    | Hemlock Lake Outlet and minor tribs      | Nutrients     |
| Ontario    | Honeoye Lake                             | Nutrients     |
| Orange     | Greenwood Lake                           | Nutrients     |
| Orange     | Monhagen Brook and tribs                 | Nutrients     |
| Orange     | Orange Lake                              | Nutrients     |
| Orleans    | Lake Ontario Shoreline, Western          | Nutrients     |
| Orleans    | Lake Ontario Shoreline, Western          | Nutrients     |
| Oswego     | Lake Neatahwanta                         | Nutrients     |
| Oswego     | Pleasant Lake                            | Nutrients     |
| Putnam     | Bog Brook Reservoir                      | Nutrients     |
| Putnam     | Boyd Corners Reservoir                   | Nutrients     |
| Putnam     | Croton Falls Reservoir                   | Nutrients     |
| Putnam     | Diverting Reservoir                      | Nutrients     |
| Putnam     | East Branch Reservoir                    | Nutrients     |
| Putnam     | Lake Carmel                              | Nutrients     |
| Putnam     | Middle Branch Reservoir                  | Nutrients     |
| Putnam     | Oscawana Lake                            | Nutrients     |
| Putnam     | Palmer Lake                              | Nutrients     |
| Putnam     | West Branch Reservoir                    | Nutrients     |
| Queens     | Bergen Basin                             | Nutrients     |
| Queens     | Flushing Creek/Bay                       | Nutrients     |
| Queens     | Jamaica Bay, Eastern, and tribs (Queens) | Nutrients     |
| Queens     | Kissena Lake                             | Nutrients     |
| Queens     | Meadow Lake                              | Nutrients     |
| Queens     | Willow Lake                              | Nutrients     |
| Rensselaer | Nassau Lake                              | Nutrients     |
| Rensselaer | Snyders Lake                             | Nutrients     |
| Richmond   | Grasmere Lake/Bradys Pond                | Nutrients     |
| Rockland   | Congers Lake, Swartout Lake              | Nutrients     |
| Rockland   | Rockland Lake                            | Nutrients     |
| Saratoga   | Ballston Lake                            | Nutrients     |
| Saratoga   | Dwaas Kill and tribs                     | Silt/Sediment |
| Saratoga   | Dwaas Kill and tribs                     | Nutrients     |
| Saratoga   | Lake Lonely                              | Nutrients     |
| Saratoga   | Round Lake                               | Nutrients     |
| Saratoga   | Tribs to Lake Lonely                     | Nutrients     |

### 303(d) Segments Impaired by Construction Related Pollutant(s)

|             |   |               |
|-------------|---|---------------|
| Schenectady | Collins Lake                            | Nutrients     |
| Schenectady | Duane Lake                              | Nutrients     |
| Schenectady | Mariaville Lake                         | Nutrients     |
| Schoharie   | Engleville Pond                         | Nutrients     |
| Schoharie   | Summit Lake                             | Nutrients     |
| Seneca      | Reeder Creek and tribs                  | Nutrients     |
| St.Lawrence | Black Lake Outlet/Black Lake            | Nutrients     |
| St.Lawrence | Fish Creek and minor tribs              | Nutrients     |
| Steuben     | Smith Pond                              | Nutrients     |
| Suffolk     | Agawam Lake                             | Nutrients     |
| Suffolk     | Big/Little Fresh Ponds                  | Nutrients     |
| Suffolk     | Canaan Lake                             | Silt/Sediment |
| Suffolk     | Canaan Lake                             | Nutrients     |
| Suffolk     | Flanders Bay, West/Lower Sawmill Creek  | Nutrients     |
| Suffolk     | Fresh Pond                              | Nutrients     |
| Suffolk     | Great South Bay, East                   | Nutrients     |
| Suffolk     | Great South Bay, Middle                 | Nutrients     |
| Suffolk     | Great South Bay, West                   | Nutrients     |
| Suffolk     | Lake Ronkonkoma                         | Nutrients     |
| Suffolk     | Long Island Sound, Suffolk County, West | Nutrients     |
| Suffolk     | Mattituck (Marratooka) Pond             | Nutrients     |
| Suffolk     | Meetinghouse/Terrys Creeks and tribs    | Nutrients     |
| Suffolk     | Mill and Seven Ponds                    | Nutrients     |
| Suffolk     | Millers Pond                            | Nutrients     |
| Suffolk     | Moriches Bay, East                      | Nutrients     |
| Suffolk     | Moriches Bay, West                      | Nutrients     |
| Suffolk     | Peconic River, Lower, and tidal tribs   | Nutrients     |
| Suffolk     | Quantuck Bay                            | Nutrients     |
| Suffolk     | Shinnecock Bay and Inlet                | Nutrients     |
| Suffolk     | Tidal tribs to West Moriches Bay        | Nutrients     |
| Sullivan    | Bodine, Montgomery Lakes                | Nutrients     |
| Sullivan    | Davies Lake                             | Nutrients     |
| Sullivan    | Evens Lake                              | Nutrients     |
| Sullivan    | Pleasure Lake                           | Nutrients     |
| Tompkins    | Cayuga Lake, Southern End               | Nutrients     |
| Tompkins    | Cayuga Lake, Southern End               | Silt/Sediment |
| Tompkins    | Owasco Inlet, Upper, and tribs          | Nutrients     |
| Ulster      | Ashokan Reservoir                       | Silt/Sediment |
| Ulster      | Esopus Creek, Upper, and minor tribs    | Silt/Sediment |
| Warren      | Hague Brook and tribs                   | Silt/Sediment |

### 303(d) Segments Impaired by Construction Related Pollutant(s)

|             |  |               |
|-------------|--|---------------|
| Warren      | Huddle/Finkle Brooks and tribs           | Silt/Sediment |
| Warren      | Indian Brook and tribs                   | Silt/Sediment |
| Warren      | Lake George                              | Silt/Sediment |
| Warren      | Tribs to L.George, Village of L George   | Silt/Sediment |
| Washington  | Cossayuna Lake                           | Nutrients     |
| Washington  | Lake Champlain, South Bay                | Nutrients     |
| Washington  | Tribs to L.George, East Shore            | Silt/Sediment |
| Washington  | Wood Cr/Champlain Canal and minor tribs  | Nutrients     |
| Wayne       | Port Bay                                 | Nutrients     |
| Westchester | Amawalk Reservoir                        | Nutrients     |
| Westchester | Blind Brook, Upper, and tribs            | Silt/Sediment |
| Westchester | Cross River Reservoir                    | Nutrients     |
| Westchester | Lake Katonah                             | Nutrients     |
| Westchester | Lake Lincolndale                         | Nutrients     |
| Westchester | Lake Meahagh                             | Nutrients     |
| Westchester | Lake Mohegan                             | Nutrients     |
| Westchester | Lake Shenorock                           | Nutrients     |
| Westchester | Long Island Sound, Westchester (East)    | Nutrients     |
| Westchester | Mamaroneck River, Lower                  | Silt/Sediment |
| Westchester | Mamaroneck River, Upper, and minor tribs | Silt/Sediment |
| Westchester | Muscoot/Upper New Croton Reservoir       | Nutrients     |
| Westchester | New Croton Reservoir                     | Nutrients     |
| Westchester | Peach Lake                               | Nutrients     |
| Westchester | Reservoir No.1 (Lake Isle)               | Nutrients     |
| Westchester | Saw Mill River, Lower, and tribs         | Nutrients     |
| Westchester | Saw Mill River, Middle, and tribs        | Nutrients     |
| Westchester | Sheldrake River and tribs                | Silt/Sediment |
| Westchester | Sheldrake River and tribs                | Nutrients     |
| Westchester | Silver Lake                              | Nutrients     |
| Westchester | Teatown Lake                             | Nutrients     |
| Westchester | Titicus Reservoir                        | Nutrients     |
| Westchester | Truesdale Lake                           | Nutrients     |
| Westchester | Wallace Pond                             | Nutrients     |
| Wyoming     | Java Lake                                | Nutrients     |
| Wyoming     | Silver Lake                              | Nutrients     |

## APPENDIX F – List of NYS DEC Regional Offices

| <u>Region</u> | <u>COVERING THE FOLLOWING COUNTIES:</u>  | <u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u>                               | <u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u>   |
|---------------|--|--|--|
| 1             | NASSAU AND SUFFOLK   | 50 CIRCLE ROAD<br>STONY BROOK, NY 11790<br>TEL. (631) 444-0365                                     | 50 CIRCLE ROAD<br>STONY BROOK, NY 11790-3409<br>TEL. (631) 444-0405                                |
| 2             | BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND  | 1 HUNTERS POINT PLAZA,<br>47-40 21ST ST.<br>LONG ISLAND CITY, NY 11101-5407<br>TEL. (718) 482-4997 | 1 HUNTERS POINT PLAZA,<br>47-40 21ST ST.<br>LONG ISLAND CITY, NY 11101-5407<br>TEL. (718) 482-4933 |
| 3             | DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER                               | 21 SOUTH PUTT CORNERS ROAD<br>NEW PALTZ, NY 12561-1696<br>TEL. (845) 256-3059                      | 100 HILLSIDE AVENUE, SUITE 1W<br>WHITE PLAINS, NY 10603<br>TEL. (914) 428 - 2505                   |
| 4             | ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE      | 1150 NORTH WESTCOTT ROAD<br>SCHENECTADY, NY 12306-2014<br>TEL. (518) 357-2069                      | 1130 NORTH WESTCOTT ROAD<br>SCHENECTADY, NY 12306-2014<br>TEL. (518) 357-2045                      |
| 5             | CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON                        | 1115 STATE ROUTE 86, Po Box 296<br>RAY BROOK, NY 12977-0296<br>TEL. (518) 897-1234                 | 232 GOLF COURSE ROAD<br>WARRENSBURG, NY 12885-1172 TEL.<br>(518) 623-1200                          |
| 6             | HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE  | STATE OFFICE BUILDING<br>317 WASHINGTON STREET<br>WATERTOWN, NY 13601-3787<br>TEL. (315) 785-2245  | STATE OFFICE BUILDING<br>207 GENESEE STREET<br>UTICA, NY 13501-2885 TEL. (315)<br>793-2554         |
| 7             | BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS                  | 615 ERIE BLVD. WEST<br>SYRACUSE, NY 13204-2400<br>TEL. (315) 426-7438                              | 615 ERIE BLVD. WEST<br>SYRACUSE, NY 13204-2400<br>TEL. (315) 426-7500                              |
| 8             | CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES | 6274 EAST AVON-LIMA<br>ROADAVON, NY 14414-9519<br>TEL. (585) 226-2466                              | 6274 EAST AVON-LIMA RD.<br>AVON, NY 14414-9519<br>TEL. (585) 226-2466                              |
| 9             | ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING                                       | 270 MICHIGAN AVENUE<br>BUFFALO, NY 14203-2999<br>TEL. (716) 851-7165                               | 270 MICHIGAN AVENUE<br>BUFFALO, NY 14203-2999<br>TEL. (716) 851-7070                               |