September 25, 2023

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Coventry Self Storage

1920 Nooseneck Hill Road

Coventry, RI 02816

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Table of Contents

1. Introduction

This SWPPP to be prepared by the Owner/Operator as required under Rhode Island Pollutant Discharge Elimination System (RIPDES) Stormwater Discharge Associated with Construction Activity provided all the eligibility provisions of this permit are met:

- All new and existing stormwater discharges associated with construction, including, but not limited to, clearing, grading, excavation, and filling, where total land disturbance is equal to or greater than one (1) acre including construction activities involving soil disturbances of less than one (1) acre of disturbance if that construction is part of a larger common plan of development or sale that would disturb one (1) or more acre, and the discharge is composed entirely of stormwater.

2. PROJECT INFORMATION

2.1 – Narrative Description

The subject property is located at 1920 Nooseneck Hill Road (Tax Map Parcel 57-4) in the Town of Coventry. **Figure 1** shows the location of the site.

The existing site (Tax Map Parcel 57-4) consists of 4.1 acres and contains an existing storage rental facility with six (6) one-story metal storage structures, associated driveways, parking, utilities, and five (5) stormwater dry wells. Some undeveloped lightly forested area exists along the frontage of the site. The area surrounding the buildings is paved asphalt, with the remainder of the lot being grass or forested pervious area.

The project proposes to construct a 75,088 gross square foot 3 story climate controlled self-storage building to expand the existing storage facility. These improvements will include updates to the parking lot, the addition of landscaping, utilities, lighting, and stormwater management practices. The limit of disturbance for this proposed project is 1.34 acres and the project proposes an increase of pervious area of approximately 0.62 acres. Additional stormwater management is proposed to meet the Town of Coventry and Rhode Island stormwater requirements. The site is accessed via Nooseneck Hill Road which is under RIDOT jurisdiction.

The excess stormwater runoff from the proposed improvements drains into an above ground infiltration basin on the western side of the site. The remaining stormwater runoff flows into existing dry wells on site.

Based on Federal Emergency Management Agency Flood Insurance Rate Maps (FIRM Panel No: 44003C0111H) as shown in **Figure 2**, the project site is not located within the 100-year floodplain limit. The site is classified as Zone X, Area of Minimal Flood Hazard.

Figure 1 – General Location Map

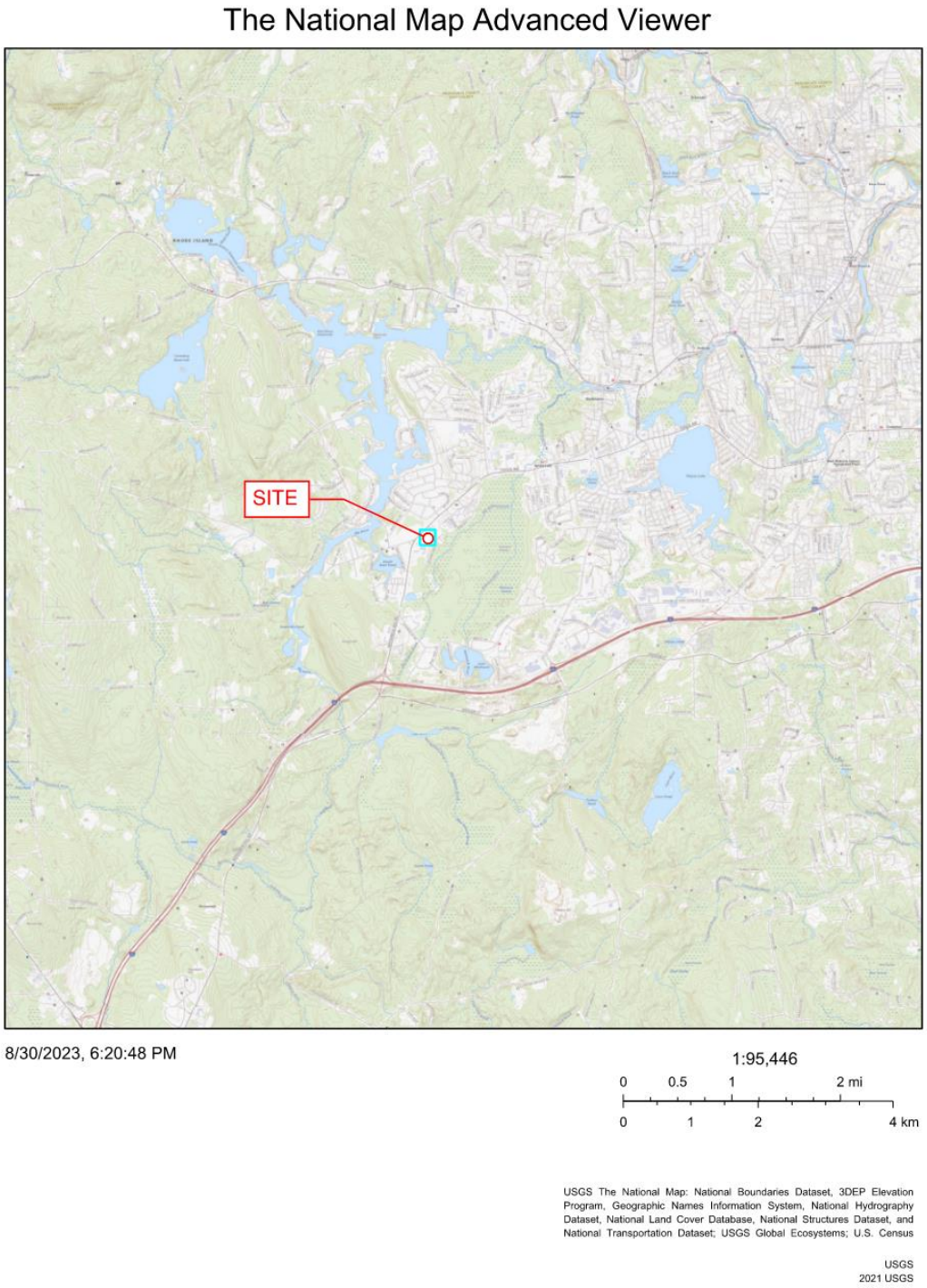


Figure 2 – Flood Map

2.2 – Soils

Soil characteristics including soil types and hydrological soil group classification of the studied drainage area was obtained online from the Web Soil Survey (WSS) operated by the USDA Natural Resources Conservation Service (NRCS). Appendix C provides the reports generated from the WSS and the below table summarizes as follows with most of the site in Hydrologic A or B soils:

Symbol	Description	Hydrological Soil Group
HkA	Hinckley loamy sand, 0 to 3 percent slopes (~25% of site area)	A
MmA	Merrimac fine sandy loam, 0 to 3 percent slopes (~24% of site area)	A
Sb	Scarboro mucky fine sandy loam, 0 to 3 percent slopes (~9% of site area)	A/D
Ss	Sudbury sandy loam (35% of site area)	B
UD	Udorthents-Urban land complex (7% of site area)	A
WgA	Windsor loamy sand, 0 to 3 percent slopes (~<1% of site area)	A

3. STORMWATER

3.1 – Rainfall Event and Sizing Criteria

Rainfall event data was obtained through the *Rhode Island Stormwater Design and Installation Standards Manual, amended March 2015.* The following data provides the 24-hour rainfall for the following storm events for a 24-Hour (Type III) distribution, located in Kent County, Rhode Island:

Storm Event	24-Hour Rainfall (in)
1-Year	2.7
10-Year	4.8
100-Year	8.7

The channel protection volume (CPv) is the 24-hour extended detention of the post development runoff volume from the 1-year, 24-hour Type III design storm event. If a stormwater discharge is proposed within 200 feet of streams and any contiguous natural or vegetated wetlands in watersheds draining to cold-water fisheries, surface detention practices are prohibited (underground detention or infiltration practices will be required). CPv criteria will be demonstrated by providing the infiltration of the 1-year, 24-hour Type III design storm event.

The overbank flood control (Qp) or peak flow attenuation is required for the 10-year and 100-year, 24-hour Type III design storm events. The primary purpose of this sizing criterion is to prevent an increase in the frequency and magnitude of out-of-bank flooding (i.e., flow events that exceed the

bank full capacity of the channel, and therefore, must spill over to the floodplain). One of the key objectives of an out-of-bank flooding requirement is to protect downstream structures from increased flows and velocities from upstream development. The intent of this criterion is to prevent increased flood damage from infrequent but very large storm events, maintain the boundaries of the predevelopment floodplain, and protect the physical integrity of a stormwater management practice itself. Qp criteria will be demonstrated by attenuating the Type III 10-year storm and the 100-year storm.

Town of Coventry requires the overall reduction of peak flows from preexisting conditions to post conditions which is accomplished by reducing the post-drainage areas and using an aboveground infiltration basin.

Study Point

Study points show where the majority of the stormwater runoff from drainage areas drain to and is used for drainage analysis. The existing and proposed conditions are analyzed with the same study points so that a comparison can be made. The following study points have been determined for the project:

- Study Point 1 – The outlet of an existing localized depression within the wooded area between the Nooseneck Hill Road right-of-way and the existing developed site area. For the purposes of analysis, the localized depression is modeled as a retention pond with a 15’ long weir, assumed to outlet to the north via overland flow, based on analysis of local topography.
- Study Point 2 – Existing Dry Well, located within the drive aisle on the northwestern portion of the site.
- Study Point 3 – Existing Dry Well, located within the drive aisle on the southwestern portion of the site.

The remainder of the site’s drainage is captured by two additional existing dry wells along the southeastern portion of the site or is undisturbed pervious bypass. These areas are unaffected by the proposed site development and not included in analysis.

Refer to the Appendix D – Existing and Proposed Drainage Area Exhibits for Study Point locations.

Existing Drainage Area Conditions

Existing drainage area is modeled in what HydroCAD defines as sub-catchment areas. The existing drainage area described in detail below. Refer to Appendix D – Existing and Proposed Drainage Area Exhibits and to Appendix B for detailed design calculations.

- **Existing Drainage Area (EX-1)**

  The existing drainage area is comprised of 1.28 acres of the site. It consists of approximately 0.11 acres of impervious area and 1.17 acres of pervious area.

  Runoff from this drainage area flows to the existing localized depression within EX-1 to Study Point 1 via the following ways:
  - overland by sheet flow
  - overland by shallow concentrated flow

  Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Existing Drainage Area (EX-2)**

  The existing drainage area is comprised of 0.41 acres of the site. It consists of approximately 0.33 acres of impervious area and 0.08 acres of pervious area.

  Runoff from this drainage area travels towards the existing Dry Well (Study Point 2) via the following ways:
  - overland by sheet flow
  - overland by shallow concentrated flow

  Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Existing Drainage Area (EX-3)**

  The existing drainage area is comprised of 0.34 acres of the site. It consists of approximately 0.29 acres of impervious area and 0.05 acres of pervious area.

  Runoff from this drainage area travels towards the existing Dry Well (Study Point 3) via the following ways:
  - overland by sheet flow
  - overland by shallow concentrated flow

  Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Existing Offsite Drainage Area (EX-OFF1)**

  The existing drainage area is comprised of 0.42 acres of offsite area within the right-of-way. It consists of approximately 0.27 acres of impervious area and 0.15 acres of pervious area.

Runoff from this drainage area flows to the existing localized depression within EX-1 to Study Point 1 via the following ways:

- overland by sheet flow
- overland by shallow concentrated flow

Time of concentration has been calculated to be the minimum of 5.0 minutes.

Proposed Drainage Area Conditions

Proposed drainage areas are modeled in what HydroCAD defines as sub-catchment areas. The proposed drainage areas are described in detail below.

Refer to Appendix D – Existing and Proposed Drainage Area Exhibits and to Appendix B for detailed design calculations.

- **Proposed Drainage Area (DA-1)**

  The proposed drainage area is comprised of 0.12 acres of the site. It consists of entirely impervious area of the driveway and facility parking area.

  Runoff from this drainage area travels to the proposed infiltration basin and Study Point 1 via the following ways:

  - overland by sheet flow
  - pipe flow through a proposed 15” PVC storm pipe

  Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Proposed Drainage Area (DA-2)**

  The proposed drainage area is comprised of 0.09 acres of the site. It consists of approximately 0.01 acres of impervious sidewalk area and 0.08 acres of pervious area.

  Runoff from this drainage area travels to the proposed infiltration basin and Study Point 1 via the following ways:

  - overland by sheet flow

  Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Proposed Drainage Area (DA-3)**

The proposed drainage area is comprised of 0.50 acres of the site. It consists of entirely pervious area, containing the proposed infiltration basin and grass area to the south of the proposed building.

Runoff from this drainage area travels to the proposed infiltration basin and Study Point 1 via the following ways:

- overland by sheet flow
- overland by shallow concentrated flow
- overland by channelized flow through a grass swale

Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Proposed Drainage Area (DA-4)**

The proposed drainage area is comprised of 0.57 acres of the site. It consists of entirely impervious roof area.

Runoff from this drainage area travels to the proposed infiltration basin and Study Point 1 via the following ways:

- overland by sheet flow

Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Proposed Drainage Area (DA-5)**

The existing drainage area is comprised of 0.39 acres of the site. It consists of approximately 0.34 acres of impervious area and 0.05 acres of pervious area.

Runoff from this drainage area travels towards the existing Dry Well (Study Point 2) via the following ways:

- overland by sheet flow
- overland by shallow concentrated flow

Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Proposed Drainage Area (DA-6)**

The existing drainage area is comprised of 0.35 acres of the site. It consists of approximately 0.30 acres of impervious area and 0.05 acres of pervious area.

Runoff from this drainage area travels towards the existing Dry Well (Study Point 3) via the following ways:

- overland by sheet flow
- overland by shallow concentrated flow

Time of concentration has been calculated to be the minimum of 5.0 minutes.

- **Proposed Drainage Area (DA-OFF1)**

The existing drainage area is comprised of 0.35 acres of offsite area within the right-of-way. It consists of approximately 0.30 acres of impervious area and 0.05 acres of pervious area.

Runoff from this drainage area travels to the proposed infiltration basin and Study Point 1 via the following ways:

- overland by sheet flow
- overland by shallow concentrated flow

Time of concentration has been calculated to be the minimum of 5.0 minutes.

Hydrologic Analysis

The HydroCAD analysis yields the existing and proposed conditions peak flows at Study Point 1 for storms from the 1-year, 10-year, and 100-year design frequencies.

Refer to Appendix B for supporting calculations for the hydrologic analysis (HydroCAD) for both existing and proposed conditions.

Summary Tables #1 and #2 below show the comparison of flows produced under existing and developed conditions for the study points.

Table 1 – Existing Conditions Peak Flows

Study Point	Area (ac)	Peak Discharges (cfs) of Various Storm Frequency		
		1-yr	10-yr	100-yr
1	1.71	0.00	0.00	2.18
2	0.42	0.72	1.62	3.30
3	0.34	0.71	1.46	2.83

In existing conditions, flow from EX-Off1 and EX-1 enters the localized depression and is retained there in the 1 and 10-year storm. The 100-year storm event is assumed to outlet to the north via

overland flow, based on analysis of local topography, at Study Point 1. The outlet of the localized depression was modeled as a 15' long weir, conveying flow to the north. Subsequently, there is some discharge from the site to the north in the existing 100-year storm event, as shown in the table above.

Table 2 – Proposed Conditions Peak Flows

Study Point	Area (ac)	Peak Discharges (cfs) of Various Storm Frequency		
		1-yr	10-yr	100-yr
1	1.71	0.00	0.00	0.00
2	0.39	0.83**	1.69*	3.27
3	0.35	0.70	1.48*	2.90*

** Post development peak flow rates are within 5% of pre-development rates, therefore there is no alteration to the existing drainage patterns or characteristics of the Study Point.*
*** Peak flow has been attenuated to the maximum extent practicable; however, there is a slight increase in impervious area within a small drainage area, resulting in an increased peak flow for the lower intensity storm events. For the 100-year storm event, peak flow is attenuated.*

In proposed conditions, flow from DA-Off1 and DA-1, 2,3 and 4 enters the infiltration basin. All flow from the 100-year storm infiltrates into the ground to attenuate peak flows to existing condition. There are no engineered outlets such as weirs. There is approximately 2.0' freeboard from the 100-year water surface elevation of the pond to the finished floor elevation and proposed entrance driveway.

3.2 – Water Quality

An infiltration basin is proposed on site to attenuate the 1, 10, and 100-year storms as well as to infiltrate the required groundwater recharge volume (Rev) and water quality volume (WQv). The bottom elevation of the proposed infiltration basins is 247.5'. Additional site-specific testing to be conducted to confirm suitability for groundwater elevation and infiltration relative to the proposed bottom of basin. The proposed infiltration basin retains and infiltrates all flow for the 100-year storm, no engineered outlet is proposed.

The required water quality volume (WQ_V) for the total site is 0.065 ac-ft (2,831 ft^3). The required groundwater recharge (Rev) volume is 0.023 ac-ft. An infiltration basin was designed to provide the WQ_V and Rev as calculated in accordance with the Rhode Island Stormwater Design and Installations Standards Manual. The total treatment and recharge volume provided by the infiltration basin is 0.79 ac-ft (34,493 ft^3).

A series of five drywells exist onsite. As discussed in the previous sections, no alteration to the existing drainage characteristics of Study Points 2 and 3 or remaining two drywells will result from

the proposed development. Therefore, the drywells were not included in the water quality volume calculations.

4 – Erosion and Sediment Control

The purposes of providing erosion and sediment control are to minimize temporary impacts to downgradient open water during any construction activities by controlling runoff and retaining sediment as much as possible within the site. Refer to site plan for proposed erosion control practices and details. The erosion and sediment control practices shall base on the guidelines from the latest Rhode Island Soil Erosion and Sediment Control Handbook.

A separately bound Soil Erosion and Sediment Control Plan, following the RIDEM SESC Template, has been prepared outlining how the project has met the Performance Criteria.

Erosion and sediment control practices includes, but not limiting to, providing the following activities by the owner/operator:

A) Silt Fence

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from drainage area of disturbed soil by temporary ponding the sediment laden runoff allowing settling to occur.

B) Straw Bale

A temporary barrier of straw used to intercept sediment laden runoff from drainage area of disturbed soil to reduce runoff velocity and effect deposition of the transported sediment load.

C) Inlet Protection

A temporary barrier with low permeability, installed around inlets in the form of fence, berm or excavation around an opening, detaining water and thereby reducing the sediment content of sediment laden water by settling thus preventing heavily sediment laden water from entering a storm drainage system.

D) Dust Control

Water shall be strayed from water truck during construction activity to prevent dust from forming and minimize sediment transport that may cause off-site damage, health hazards or traffic safety problem.

E) Pavement Sweeping

Pavement sweeping will remove sediments from the paved surfaces directly thus preventing sediment from stormwater runoff.

F) Catch Basin Cleaning

Sediments that are not removed by pavement sweeping or inlet protection practices will be drained by stormwater runoff into the site's catch basin system. Catch basin shall be cleaned on a regular basis to make sure the catch basin system function as intended.

G) Stabilized Construction Entrance

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, or parking area. The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public right-of way or streets.

H) Mulching

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control.

I) Concrete Truck Washout

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering the storm drainage systems or leaching into soil.

J) Land Grading

Reshaping of the existing land surface by grading in accordance with an engineering topographic plan and specification to provide for erosion control and vegetative establishment on disturbed, reshaped areas.

K) Seeding

Providing temporary erosion control protection to disturbed areas and/or localized critical areas for an interim period by covering all bare ground that exists because of construction activities or natural event. Critical areas may include but not limited to steep excavated cut or fill slopes and any disturbed, denuded natural slopes subject to erosion.

5 – General Construction Phases

Site development in general will occur in two generalized phases:

1. Site preparation and erosion control
2. Construction, removal of sediment and final stabilization

1) Site Preparation and Erosion Control

Prior to any construction activities, erosion control measures shall be implemented to minimize or control erosion on site. These include but not limited to silt fence, erosion eel, inlet protection, stabilized construction entrance, concrete truck wash-out area, and stockpile area. Fencing shall be placed around trees to be protected.

2) Construction, Removal of Sediment and Final Stabilization

After proper site preparation and erosion control installation, the onsite construction will begin. This phase includes construction of the proposed onsite utility, grading, pavement, stormwater management system, building, and landscape.

After construction, all temporary control measures shall be removed once the site has been stabilized and all sediment has been removed. Additionally, all litter shall be removed from site.

Erosion control measures shall not be removed until the qualified engineer has performed a site visit and has deemed that the site's permanent stabilization is satisfactory.

6 – Appendices

APPENDIX A – RIDEM STORMWATER MANAGEMENT CHECKLIST

APPENDIX A: STORMWATER MANAGEMENT PLAN CHECKLIST AND LID PLANNING REPORT – STORMWATER DESIGN SUMMARY

PROJECT NAME Coventry Self Storage	**(RIDEM USE ONLY)** **STW/WQC File #:** **Date Received:**
TOWN Town of Coventry	
BRIEF PROJECT DESCRIPTION: The project proposes a 75,088 GSF 3-story climate controlled self-storage facility expansion to an existing facility. Improvements include parking lot updates, landscaping additions, utilities, lighting, and SWM practices (an infiltration basin).	

Stormwater Management Plan (SMP) Elements – Minimum Standards

When submitting a SMP,[1] submit four separately bound documents: Appendix A Checklist; Stormwater Site Planning, Analysis and Design Report with Plan Set/Drawings; Soil Erosion and Sediment Control (SESC) Plan, and Post Construction Operations and Maintenance (O&M) Plan. Please refer to Suggestions to Promote Brevity**.**

Note**: All stormwater construction projects must create a Stormwater Management Plan (SMP). However, not every element listed below is required per the** RIDEM Stormwater Rules **and the** RIPDES Construction General Permit (CGP)**. This checklist will help identify the required elements to be submitted with an Application for Stormwater Construction Permit & Water Quality Certification.**

PART 1. PROJECT AND SITE INFORMATION

PROJECT TYPE (Check all that apply)

☐ Residential	☒ Commercial	☐ Federal	☐ Retrofit	☐ Restoration
☐ Road	☐ Utility	☐ Fill	☐ Dredge	☐ Mine
☐ Other (specify):				

SITE INFORMATION

☒ Vicinity Map

INITIAL DISCHARGE LOCATION(S): The WQv discharges to: (You may choose more than one answer if several discharge points are associated with the project.)

☒ **Groundwater**	☐ **Surface Water**	☐ **MS4**
☒ GAA	☐ Isolated Wetland	☐ RIDOT
☐ GA	☐ Named Waterbody	☐ RIDOT Alteration Permit is Approved
☐ GB	☐ Unnamed Waterbody Connected to Named Waterbody	☐ Town
		☐ Other (specify):

ULTIMATE RECEIVING WATERBODY LOCATION(S): Include pertinent information that applies to both WQ_v and flow from larger storm events including overflows. Choose all that apply, and repeat table for each waterbody.

☒ Groundwater or Disconnected Wetland	☐ SRWP		
☐ Waterbody Name:	☐ Coldwater	☐ Warmwater	☐ Unassessed
☐ Waterbody ID:	☐ 4th order stream of pond 50 acres or more		
☐ TMDL for:	☐ Watershed of flood prone river (e.g., Pocasset River)		
☐ Contributes to a priority outfall listed in the TMDL	☐ Contributes stormwater to a public beach		
☐ 303(d) list – Impairment(s) for:	☐ Contributes to shellfishing grounds		

[1] Applications for a Construction General Permit that do not require any other permits from RIDEM and will disturb less than 5 acres over the entire course of the project do not need to submit a SMP. The Appendix A checklist must still be submitted.

PROJECT HISTORY		
☐ RIDEM Pre- Application Meeting	Meeting Date:	☐ Minutes Attached
☐ Municipal Master Plan Approval	Approval Date:	☐ Minutes Attached
☐ Subdivision Suitability Required	Approval #:	
☐ Previous Enforcement Action has been taken on the property	Enforcement #:	

FLOODPLAIN & FLOODWAY See Guidance Pertaining to Floodplain and Floodways	
☐ Riverine 100-year floodplain: **FEMA FLOODPLAIN FIRMETTE** has been reviewed and the 100-year floodplain is on site	
☐ Delineated from FEMA Maps	
NOTE: Per Rule 250-RICR-150-10-8-1.1(B)(5)(d)(3), provide volumetric floodplain compensation calculations for cut and fill/displacement calculated by qualified professional	
☐ Calculated by Professional Engineer	
☐ Calculations are provided for cut vs. fill/displacement volumes proposed within the 100-year floodplain	Amount of Fill (CY):
	Amount of Cut (CY):
☐ Restrictions or modifications are proposed to the flow path or velocities in a floodway	
☐ Floodplain storage capacity is impacted	
☒ Project area is not within 100-year floodplain as defined by RIDEM	

CRMC JURISDICTION
☐ CRMC Assent required
☐ Property subject to a Special Area Management Plan (SAMP). If so, specify which SAMP:
☐ Sea level rise mitigation has been designed into this project

LUHPPL IDENTIFICATION - MINIMUM STANDARD 8:			
1. OFFICE OF Land Revitalization and Sustainable Materials Management (OLRSMM)			
	☐ Known or suspected releases of HAZARDOUS MATERIAL are present at the site (Hazardous Material is defined in Rule 1.4(A)(33) of 250-140-30-1 of the RIDEM Rules and Regulations for Investigation and Remediation of Hazardous Materials (the Remediation Regulations))		**RIDEM CONTACT:**
	☐ Known or suspected releases of PETROLEUM PRODUCT are present at the site (Petroleum Product as defined in Rule 1.5(A)(84) of 250-140-25-1 of the RIDEM Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials)		
	☐ This site is identified on the RIDEM Environmental Resources Map as one of the following regulated facilities		**SITE ID#**:
		☐ CERCLIS/Superfund (NPL)	
		☐ State Hazardous Waste Site (SHWS)	
		☐ Environmental Land Usage Restriction (ELUR)	
		☐ Leaking Underground Storage Tank (LUST)	
		☐ Closed Landfill	
Note: If any boxes in 1 above are checked, the applicant must contact the RIDEM OLRSMM Project Manager associated with the Site to determine if subsurface infiltration of stormwater is allowable for the project. Indicate if the infiltration corresponds to "Red," "Yellow" or "Green" as described in Section 3.2.8 of the RISDISM Guidance (Subsurface Contamination Guidance). Also, note and reference approval in PART 3, Minimum Standard 2: Groundwater Recharge/Infiltration**.**			
2. PER MINIMUM STANDARD 8 of RICR 8.14.C.1-6 "LUHPPLS," THE SITE IS/HAS:			
	☐ Industrial Site with RIPDES MSGP, except where No Exposure Certification exists. http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/status.php		
	☐ Auto Fueling Facility (e.g., gas station)		
	☐ Exterior Vehicles Service, Maintenance, or Equipment Cleaning Area		

	☐ Road Salt Storage and Loading Areas (exposed to rainwater)	
	☐ Outdoor Storage and Loading/Unloading of Hazardous Substances	
3.	**STORMWATER INDUSTRIAL PERMITTING**	
	☐ The site is associated with existing or proposed activities that are considered Land Uses with Higher Potential Pollutant Loads (LUHPPLS) (see RICR 8.14.C)	Activities: Sector:
	☐ Construction is proposed on a site that is subject to THE MULTI-SECTOR GENERAL PERMIT (MSGP) UNDER RULE 31(B)15 OF THE RIPDES REGULATIONS.	MSGP permit #
	☐ Additional stormwater treatment is required by the MSGP Explain:	

REDEVELOPMENT STANDARD – MINIMUM STANDARD 6		
☒ Pre Construction Impervious Area		
1.00 ac	☒ Total Pre-Construction Impervious Area (**TIA**)	
4.10	☒ Total Site Area (**TSA**)	
0.00 ac	☒ Jurisdictional Wetlands (**JW**)	
0.00 ac	☒ Conservation Land (**CL**)	
☒ Calculate the Site Size (defined as contiguous properties under same ownership)		
4.10 ac	☒ Site Size (**SS**) = (**TSA**) – (**JW**) – (**CL**)	
0.24	☒ (**TIA**) / (**SS**) = 1.00 ac / 4.10 ac	☐ (**TIA**) / (**SS**) >**0.4**?
☐ YES, Redevelopment		

PART 2. LOW IMPACT DEVELOPMENT ASSESSMENT – MINIMUM STANDARD 1

(NOT REQUIRED FOR REDEVELOPMENT OR RETROFITS)

This section may be deleted if not required.

Note: A written description must be provided specifying why each method is not being used or is not applicable at the Site. Appropriate answers may include:

- Town requires … (state the specific local requirement)
- Meets Town's dimensional requirement of …
- Not practical for site because …
- Applying for waiver/variance to achieve this (pending/approved/denied)
- Applying for wavier/variance to seek relief from this (pending/approved/denied)

A) PRESERVATION OF UNDISTURBED AREAS, BUFFERS, AND FLOODPLAINS	
☐ Sensitive resource areas and site constraints are identified (required)	N/A - no sensitive areas identified onsite.
☒ Local development regulations have been reviewed (required)	
☐ All vegetated buffers and coastal and freshwater wetlands will be protected during and after construction	N/A – no wetlands identified onsite.
☐ Conservation Development or another site design technique has been incorporated to protect open space and pre-development hydrology. **Note:** If Conservation Development has been used, check box and skip to Subpart C	Not practical – site is developed with no existing open space. Pre-development hydrology is maintained.
☒ As much natural vegetation and pre-development hydrology as possible has been maintained	

B) LOCATE DEVELOPMENT IN LESS SENSITIVE AREAS AND WORK WITH THE NATURAL LANDSCAPE CONDITIONS, HYDROLOGY, AND SOILS ☒ Development sites and building envelopes have been appropriately distanced from wetlands and waterbodies ☒ Development and stormwater systems have been located in areas with greatest infiltration capacity (e.g., soil groups A and B) ☒ Plans show measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPA's) ☒ Development sites and building envelopes have been positioned outside of floodplains ☒ Site design positions buildings, roadways and parking areas in a manner that avoids impacts to surface water features ☒ Development sites and building envelopes have been located to minimize impacts to steep slopes (≥15%) ☐ Other (describe):	
C) MINIMIZE CLEARING AND GRADING ☒ Site clearing has been restricted to minimum area needed for building footprints, development activities, construction access, and safety. ☒ Site has been designed to position buildings, roadways, and parking areas in a manner that minimizes grading (cut and fill quantities) ☒ Protection for stands of trees and individual trees and their root zones to be preserved has been specified, and such protection extends at least to the tree canopy drip line(s) ☒ Plan notes specify that public trees removed or damaged during construction shall be replaced with equivalent	
D) REDUCE IMPERVIOUS COVER ☐ Reduced roadway widths (≤22 feet for ADT ≤ 400; ≤ 26 feet for ADT 400 - 2,000) ☐ Reduced driveway areas (length minimized via reduced ROW width (≤ 45 ft.) and/or reduced (or absolute minimum) front yard setback; width minimized to ≤ 9 ft. wide one lane; ≤ 18 ft. wide two lanes; shared driveways; pervious surface) ☒ Reduced building footprint: Explain approach: *Building footprint was reduced to minimum to maintain 80' front setback, vehicle circulation, and to accommodate stormwater practices.* ☐ Reduced sidewalk area (≤ 4 ft. wide; one side of the street; unpaved path; pervious surface) ☐ Reduced cul-de-sacs (radius < 45 ft; vegetated island; alternative turn-around) ☒ Reduced parking lot area: Explain approach ☐ Use of pervious surfaces for driveways, sidewalks, parking areas/overflow parking areas, etc. ☒ Minimized impervious surfaces (project meets or is less than maximum specified by Zoning Ordinance) ☐ Other (describe):	N/A – no road proposed. No – AHJ code minimum driveway maintained for storage vehicle access. No – AHJ code minimum N/A – no cul-de-sac proposed No – standard pavement/concrete required for use.
E) DISCONNECT IMPERVIOUS AREA ☒ Impervious surfaces have been disconnected, and runoff has been diverted to QPAs to the maximum extent possible ☒ Residential street edges allow side-of-the-road drainage into vegetated open swales ☒ Parking lot landscaping breaks up impervious expanse AND accepts runoff ☐ Other (describe):	
F) MITIGATE RUNOFF AT THE POINT OF GENERATION ☒ Small-scale BMPs have been designated to treat runoff as close as possible to the source	

G) PROVIDE LOW-MAINTENANCE NATIVE VEGETATION ☒ Low-maintenance landscaping has been proposed using native species and cultivars ☒ Plantings of native trees and shrubs in areas previously cleared of native vegetation are shown on site plan ☒ Lawn areas have been limited/minimized, and yards have been kept undisturbed to the maximum extent practicable on residential lots	
H) RESTORE STREAMS/WETLANDS ☐ Historic drainage patterns have been restored by removing closed drainage systems, daylighting buried streams, and/or restoring degraded stream channels and/or wetlands ☐ Removal of invasive species ☐ Other	N/A – Pre-development hydrology is maintained. No channels/wetlands onsite. N/A – Invasive species not identified onsite.

PART 3. SUMMARY OF REMAINING STANDARDS

GROUNDWATER RECHARGE – MINIMUM STANDARD 2		
YES	**NO**	
☒	☐	The project has been designed to meet the groundwater recharge standard.
☐	☐	If "No," the justification for groundwater recharge criterion waiver has been explained in the Narrative (e.g., threat of groundwater contamination or physical limitation), if applicable (see RICR 8.8.D);
☐	☐	Your waiver request has been explained in the Narrative, if applicable.
☐	☒	Is this site identified as a Regulated Facility in Part 1, Minimum Standard 8: LUHPPL Identification?
☐	☐	If "Yes," has approval for infiltration by the OLRSMM Site Project Manager, per Part 1, Minimum Standard 8, been requested?

TABLE 2-1: Summary of Recharge (see RISDISM Section 3.3.2)
(Add or Subtract Rows as Necessary)

Design Point	Impervious Area Treated (sq ft)	Total Re_v Required (cu ft)	LID Stormwater Credits (see RISDISM Section 4.6.1) Portion of Re_v directed to a QPA (cu ft)	Recharge Required by Remaining BMPs (cu ft)	Recharge Provided by BMPs (cu ft)
SP-1:	33,976	1,001	0	1,001	34,493
SP-2:	No alteration to the existing drainage characteristics to Study Points 2 and 3 will result from the proposed development. Therefore, the areas to the drywells were not included in the water quality or recharge calculations.				
SP-3:					
TOTALS:	33,976	1,001	0	1,001	34,493

Notes:
1. Only BMPs listed in RISDISM Table 3-5 "List of BMPs Acceptable for Recharge" may be used to meet the recharge requirement.
2. Recharge requirement must be satisfied for each waterbody ID.

☒ Indicate where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.):
Stormwater Pollution Prevention Plan (SWPPP) prepared by Kimley-Horn. Appendix B.

WATER QUALITY – MINIMUM STANDARD 3		
YES	**NO**	
☒	☐	Does this project meet or exceed the required water quality volume WQv (see RICR 8.9.E-I)?
☒	☐	Is the proposed final impervious cover greater than 20% of the disturbed area (see RICR 8.9.E-I)?
☐	☐	If "Yes," either the Modified Curve Number Method or the Split Pervious/Impervious method in Hydro-CAD was used to calculate WQv; or,
☒	☐	If "Yes," either TR-55 or TR-20 was used to calculate WQv; and,
☐	☐	If "No," the project meets the minimum WQv of 0.2 watershed inches over the entire disturbed area.
☐	☐	Not Applicable
☒	☐	Does this project meet or exceed the ability to treat required water quality flow WQf (see RICR 8.9.I.1-3)?
☐	☒	Does this project propose an increase of impervious cover to a receiving water body with impairments? If "Yes," please indicate below the method that was used to address the water quality requirements of no further degradation to a low-quality water.
☐	☒	RICR 8.36. A Pollutant Loading Analysis is needed and has been completed.
☒	☐	The Water Quality Guidance Document (Water Quality Goals and Pollutant Loading Analysis Guidance for Discharges to Impaired Waters) has been followed as applicable.
☐	☒	BMPs are proposed that are on the approved technology list . If "Yes," please provide all required worksheets from the manufacturer.
☐	☒	Additional pollutant-specific requirements and/or pollutant removal efficiencies are applicable to the site as the result of a TMDL, SAMP, or other watershed-specific requirements. If "Yes," please describe:

TABLE 3-1: Summary of Water Quality (see RICR 8.9)

Design Point and WB ID	Impervious area treated (sq ft)	Total WQ_v Required (cu ft)	LID Stormwater Credits (see RICR 8.18) WQv directed to a QPA (cu ft)	Water Quality Treatment Remaining (cu ft)	Water Quality Provided by BMPs (cu ft)
SP-1:	33,976	2,831	0	2,831	34,493
SP-2:	No alteration to the existing drainage characteristics to Study Points 2 and 3 will result from the proposed development. Therefore, the areas to the drywells were not included in the water quality or recharge calculations.				
SP-3:					
TOTALS:	33,976	2,831	0	2,831	34,493

Notes:
1. Only BMPs listed in RICR 8.20 and 8.25 or the Approved Technologies List of BMPs is Acceptable for Water Quality treatment.
2. For each Design Point, the Water Quality Volume Standard must be met for each Waterbody ID.

☒ YES ☐ NO	This project has met the setback requirements for each BMP. If "No," please explain:

☒ Indicate where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.):
Stormwater Pollution Prevention Plan (SWPPP) prepared by Kimley-Horn. Appendix B.

CONVEYANCE AND NATURAL CHANNEL PROTECTION (RICR 8.10) – MINIMUM STANDARD 4			
YES	**NO**		
☐	☒	Is this standard waived? If "Yes," please indicate one or more of the reasons below:	
		☐	The project directs discharge to a large river (i.e., 4th-order stream or larger. See RISDISM Appendix I for State-wide list and map of stream orders), bodies of water >50.0 acres in surface area (i.e., lakes, ponds, reservoirs), or tidal waters.
		☐	The project is a small facility with impervious cover of less than or equal to 1 acre.
		☐	The project has a post-development peak discharge rate from the facility that is less than 2 cfs for the 1-year, 24-hour Type III design storm event (prior to any attenuation). (Note: LID design strategies can greatly reduce the peak discharge rate).
☒	☐	Conveyance and natural channel protection for the site have been met. If "No,' explain why:	

TABLE 4-1: Summary of Channel Protection Volumes (see RICR 8.10)					
Design Point	**Receiving Water Body Name**	**Coldwater Fishery? (Y/N)**	**Total CPv Required (cu ft)**	**Total CPv Provided (cu ft)**	**Average Release Rate Modeled in the 1-yr storm (cfs)**
SP-1:	Infiltration Basin	N	3,571	8,886	0
SP-2:	Existing Wet Well	N	2,221	2,570	0.72
SP-3:	Existing Wet Well	N	2,221	2,178	0.71
TOTALS:	-	-	8,013	13,634	1.43
Note: The Channel Protection Volume Standard must be met in each waterbody ID.					
☒ YES ☐ NO	The CPv is released at roughly a uniform rate over a 24-hour duration (see examples of sizing calculations in Appendix D of the RISDISM).				
☐ YES ☒ NO	Do additional design restrictions apply resulting from any discharge to cold-water fisheries; If "Yes," please indicate restrictions and solutions below.				
☒ Indicate below where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.). Stormwater Pollution Prevention Plan (SWPPP) prepared by Kimley-Horn. Appendix B.					

OVERBANK FLOOD PROTECTION (RICR 8.11) AND OTHER POTENTIAL HIGH FLOWS – MINIMUM STANDARD 5			
YES	**NO**		
☐	☒	Is this standard waived? If yes, please indicate one or more of the reasons below:	
		☐	The project directs discharge to a large river (i.e., 4th-order stream or larger. See Appendix I for state-wide list and map of stream orders), bodies of water >50.0 acres in surface area (i.e., lakes, ponds, reservoirs), or tidal waters.
		☐	A Downstream Analysis (see RICR 8.11.D and E) indicates that peak discharge control would not be beneficial or would exacerbate peak flows in a downstream tributary of a particular site (e.g., through coincident peaks).
☐	☒	Does the project flow to an MS4 system or subject to other stormwater requirements? If "Yes," indicate as follows:	
		☐	RIDOT
		☐	Other (specify):
Note: The project could be approved by RIDEM but not meet RIDOT or Town standards. RIDOT's regulations indicate that post-volumes must be **less** than pre-volumes for the 10-yr storm at the design point entering the RIDOT system. If you have not already received approval for the discharge to an MS4, please explain below your strategy to comply with RIDEM and the MS4. Not applicable.			
		Indicate below which model was used for your analysis. ☒ TR-55 ☐ TR-20 ☒ HydroCAD ☐ Bentley/Haestad ☐ Intellisolve ☐ Other (Specify):	
YES	**NO**		
☒	☐	Does the drainage design demonstrate that flows from the 100-year storm event through a BMP will safely manage and convey the 100-year storm? If "No," please explain briefly below and reference where in the application further documentation can be found (i.e., name of report/document, page numbers, appendices, etc.):	
☒	☐	Do off-site areas contribute to the sub-watersheds and design points? If "Yes,"	
☒	☐	Are the areas modeled as "present condition" for both pre- and post-development analysis?	
☒	☐	Are the off-site areas shown on the subwatershed maps?	
☒	☐	Does the drainage design confirm safe passage of the 100-year flow through the site for off-site runoff?	
☐	☒	Is a Downstream Analysis required (see RICR 8.11.E.1)?	
☒	☐	Calculate the following:	
1.22	ac	☒	Area of disturbance within the sub-watershed (areas)
51	%	☒	Impervious cover (%)
☐	☒	Is a dam breach analysis required (earthen embankments over six (6) feet in height, or a capacity of 15 acre-feet or more, and contributes to a significant or high hazard dam)?	
☒	☐	Does this project meet the overbank flood protection standard?	

Table 5-1 Hydraulic Analysis Summary								
Subwatershed (Design Point)	**1.2" Peak Flow** (cfs) **		**1-yr Peak Flow** (cfs)		**10-yr Peak Flow** (cfs)		**100-yr Peak Flow** (cfs)	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
SP-1:	0	0	0	0	0	0	2.18	0
SP-2:	0.15	0.23	0.72	0.83	1.62	1.69	3.30	3.27
SP-3:	0.20	0.19	0.71	0.70	1.46	1.48	2.83	2.90
TOTALS:	0.35	0.42	1.43	1.53	3.08	3.17	8.31	6.17

** Utilize modified curve number method or split pervious /impervious method in HydroCAD.

Note: The hydraulic analysis must demonstrate no impact to each individual subwatershed DP unless each DP discharges to the same wetland or water resource.

Indicate as follows where the pertinent calculations and/or information for the items above are provided	**Name of report/document, page numbers, appendices, etc.**
Existing conditions analysis for each subwatershed, including curve numbers, times of concentration, runoff rates, volumes, and water surface elevations showing methodologies used and supporting calculations.	Stormwater Pollution Prevention Plan (SWPPP) prepared by Kimley-Horn.
Proposed conditions analysis for each subwatershed, including curve numbers, times of concentration, runoff rates, volumes, water surface elevations, and routing showing the methodologies used and supporting calculations.	
Final sizing calculations for structural stormwater BMPs, including contributing drainage area, storage, and outlet configuration.	
Stage-storage, inflow and outflow hydrographs for storage facilities (e.g., detention, retention, or infiltration facilities).	

Table 5-2 Summary of Best Management Practices											
BMP ID	**DP #**	**BMP Type** (e.g., bioretention, tree filter)	**BMP Functions**					**Bypass Type**	**Horizontal Setback Criteria are met per RICR 8.21.B.10, 8.22.D.11, and 8.35.B.4**		
			Pre-Treatment (Y/N/ NA)	Re_v	WQ_v	CP_v (Y/N/ NA)	Overbank Flood Reduction (Y/N/NA)	External (E) Internal (I) or NA	Yes/ No	Technical Justification (Design Report page number)	Distance Provided
1	SP-1	Infiltration Basin	NA	34,493 cf	34,493 cf	Y	Y	NA	Y	SWPPP Pg. 11	25'
		TOTALS:	-	34,493 cf	34,493 cf	-	-	-	-	-	25'

Table 5.3 Summary of Soils to Evaluate Each BMP									
DP #	**BMP ID**	**BMP Type** (e.g., bioretention, tree filter)	**Soils Analysis for Each BMP**						
			Test Pit ID# and Ground Elevation		SHWT Elevation (ft)	Bottom of Practice Elevation* (ft)	Separation Distance Provided (ft)	Hydrologic Soil Group (A, B, C, D)	Exfiltration Rate Applied (in/hr)
			Primary	Secondary					
SP-1	1	Infiltration Basin	TBD	TBD	TBD	247.50'	TBD	B	1.02
		TOTALS:	-	-	-	-	-	-	1.02

* For underground infiltration systems (UICs) bottom equals bottom of stone, for surface infiltration basins bottom equals bottom of basin, for filters bottom equals interface of storage and top of filter layer

LAND USES WITH HIGHER POTENTIAL POLLUTANTS LOADS (LUHPPLs) – MINIMUM STANDARD 8			
YES	**NO**	**N/A**	
☐	☐	☒	Describe any LUHPPLs identified in Part 1, Minimum Standard 8, Section 2. If not applicable, continue to Minimum Standard 9.
☐	☐	☒	Are these activities already covered under an MSGP? If "No," please explain if you have applied for an MSGP or intend to do so?
☐	☐	☒	List the specific BMPs that are proposed for this project that receive stormwater from LUHPPL drainage areas. These BMP types must be listed in RISDISM Table 3-3, "Acceptable BMPs for Use at LUHPPLs." Please list BMPs:
☐	☐	☒	Additional BMPs, or additional pretreatment BMP's if any, that meet RIPDES MSGP requirements; Please list BMPs:
			Indicate below where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.).

ILLICIT DISCHARGES – MINIMUM STANDARD 9			
Illicit discharges are defined as unpermitted discharges to Waters of the State that do not consist entirely of stormwater or uncontaminated groundwater, except for certain discharges identified in the RIPDES Phase II Stormwater General Permit.			
YES	**NO**	**N/A**	
☒	☐	☐	Have you checked for illicit discharges?
☐	☒	☐	Have any been found and/or corrected? If "Yes," please identify.
☒	☐	☐	Does your report explain preventative measures that keep non-stormwater discharges out of the Waters of the State (during and after construction)?

SOIL EROSION AND SEDIMENT CONTROL (SESC) – MINIMUM STANDARD 10			
YES	**NO**	**N/A**	
☒	☐	☐	Have you included a Soil Erosion and Sediment Control Plan Set and/or Complete Construction Plan Set?
☒	☐	☐	Have you provided a **separately-bound** document based upon the SESC Template? If yes, proceed to Minimum Standard 11 (the following items can be assumed to be addressed).

	If "No," include a document with your submittal that addresses the following elements of an SESC Plan:	
	☐	Soil Erosion and Sediment Control Plan Project Narrative, including a description of how the fifteen (15) Performance Criteria have been met:
	☐	Provide Natural Buffers and Maintain Existing Vegetation
	☐	Minimize Area of Disturbance
	☐	Minimize the Disturbance of Steep Slopes
	☐	Preserve Topsoil
	☐	Stabilize Soils
	☐	Protect Storm Drain Inlets
	☐	Protect Storm Drain Outlets
	☐	Establish Temporary Controls for the Protection of Post-Construction Stormwater Control Measures
	☐	Establish Perimeter Controls and Sediment Barriers
	☐	Divert or Manage Run-On from Up-Gradient Areas
	☐	Properly Design Constructed Stormwater Conveyance Channels
	☐	Retain Sediment On-Site
	☐	Control Temporary Increases in Stormwater Velocity, Volume, and Peak Flows
	☐	Apply Construction Activity Pollution Prevention Control Measures
	☐	Install, Inspect, and Maintain Control Measures and Take Corrective Actions
	☐	Qualified SESC Plan Preparer's Information and Certification
	☐	Operator's Information and Certification; if not known at the time of application, the Operator must certify the SESC Plan upon selection and prior to initiating site activities
	☐	Description of Control Measures, such as Temporary Sediment Trapping and Conveyance Practices, including design calculations and supporting documentation, as required

STORMWATER MANAGEMENT SYSTEM OPERATION, MAINTENANCE, AND POLLUTION PREVENTION PLAN – MINIMUM STANDARDS 7 AND 9		
Operation and Maintenance Section		
YES	**NO**	
☒	☐	Have you minimized all sources of pollutant contact with stormwater runoff, to the maximum extent practicable?
☒	☐	Have you provided a **separately-bound** Operation and Maintenance Plan for the site and for all of the BMPs, and does it address each element of RICR 8.17 and RISDISM Appendix C and E?
☒	☐	Lawn, Garden, and Landscape Management meet the requirements of RISDISM Section G.7? If "No," why not?
☒	☐	Is the property owner or homeowner's association responsible for the stormwater maintenance of all BMP's? If "No," you must provide a legally binding and enforceable maintenance agreement (see RISDISM Appendix E, page 26) that identifies the entity that will be responsible for maintenance of the stormwater. Indicate where this agreement can be found in your report (i.e., name of report/document, page numbers, appendices, etc.).
☐	☒	Do you anticipate that you will need legal agreements related to the stormwater structures? (e.g. off-site easements, deed restrictions, covenants, or ELUR per the Remediation Regulations). If "Yes," have you obtained them? Or please explain your plan to obtain them:
☐	☒	Is stormwater being directed from public areas to private property? If "Yes," note the following: Note: This is not allowed unless a funding mechanism is in place to provide the finances for the long-term maintenance of the BMP and drainage, or a funding mechanism is demonstrated that can guarantee the long-term maintenance of a stormwater BMP by an individual homeowner.
Pollution Prevention Section		

☐	☒	Designated snow stockpile locations?
☒	☐	Trash racks to prevent floatables, trash, and debris from discharging to Waters of the State?
☐	☒	Asphalt-only based sealants?
☐	☒	Pet waste stations? (Note: If a receiving water has a bacterial impairment, and the project involves housing units, then this could be an important part of your pollution prevention plan).
☒	☐	Regular sweeping? Please describe:
☐	☒	De-icing specifications, in accordance with RISDISM Appendix G. (NOTE: If the groundwater is GAA, or this area contributes to a drinking water supply, then this could be an important part of your pollution prevention plan).
☐	☒	A prohibition of phosphate-based fertilizers? (Note: If the site discharges to a phosphorus impaired waterbody, then this could be an important part of your pollution prevention plan).

PART 4. SUBWATERSHED MAPPING AND SITE-PLAN DETAILS

Existing and Proposed Subwatershed Mapping (REQUIRED)			
YES	**NO**		
☒	☐		Existing and proposed drainage area delineations
☒	☐		Locations of all streams and drainage swales
☒	☐		Drainage flow paths, mapped according to the DEM *Guidance for Preparation of Drainage Area Maps* (included in RISDISM Appendix K)
☒	☐		Complete drainage area boundaries; include off-site areas in both mapping and analyses, as applicable
☐	☒		Logs of borings and/or test pit investigations along with supporting soils/geotechnical report
☐	☒		Mapped seasonal high-water-table test pit locations
☐	☒		Mapped locations of the site-specific borings and/or test pits and soils information from the test pits at the locations of the BMPs
☒	☐		Mapped locations of the BMPs, with the BMPs consistently identified on the Site Construction Plans
☐	☒		Mapped bedrock outcrops adjacent to any infiltration BMP
☐	☐		Soils were logged by a: *Site specific soil testing is pending.*
		☐	DEM-licensed Class IV soil evaluator Name:
		☐	RI-registered P.E. Name:

Subwatershed and Impervious Area Summary				
Subwatershed (area to each design point)	**First Receiving Water ID or MS4**	**Area Disturbed (ac)**	**Existing Impervious (ac)**	**Proposed Impervious (ac)**
DA-1: 0.12 ac	PR-1	0.12	0.11	0.12
DA-2: 0.09 ac	PR-1	0.09	0.00	0.01
DA-3: 0.50 ac	PR-1	0.44	0.00	0.00
DA-4: 0.09 ac	PR-1	0.57	0.00	0.57
DA-5: 0.39 ac	PR-2	0.10	0.33	0.35
DA-6: 0.35 ac	PR-3	0.03	0.29	0.30
DA-OFF1: 0.42 ac	PR-1	0.00	0.27	0.27
TOTALS:	-	1.35	1.00	1.62

Site Construction Plans (Indicate that the following applicable specifications are provided)		
YES	**NO**	
☒	☐	Existing and proposed plans (scale not greater than 1" = 40') with North arrow
☒	☐	Existing and proposed site topography (with 1 or 2-foot contours); 10-foot contours accepted for off-site areas
☒	☐	Boundaries of existing predominant vegetation and proposed limits of clearing
☒	☐	Site Location clarification
☒	☐	Location and field-verified boundaries of resource protection areas such as: ► freshwater and coastal wetlands, including lakes and ponds ► coastal shoreline features Perennial and intermittent streams, in addition to Areas Subject to Storm Flowage (ASSFs)
☒	☐	All required setbacks (e.g., buffers, water-supply wells, septic systems)
☒	☐	Representative cross-section and profile drawings, and notes and details of structural stormwater management practices and conveyances (i.e., storm drains, open channels, swales, etc.), which include: ► Location and size of the stormwater treatment practices (type of practice, depth, area). Stormwater treatment practices (BMPs) must have labels that correspond to RISDISM Table 5-2; ► Design water surface elevations (applicable storms); ► Structural details of outlet structures, embankments, spillways, stilling basins, grade-control structures, conveyance channels, etc.; ► Existing and proposed structural elevations (e.g., inverts of pipes, manholes, etc.); ► Location of floodplain and, if applicable, floodway limits and relationship of site to upstream and downstream properties or drainage that could be affected by work in the floodplain; ► Planting plans for structural stormwater BMPs, including species, size, planting methods, and maintenance requirements of proposed planting
☐	☒	Logs of borings and/or test pit investigations along with supporting soils/geotechnical report and corresponding water tables
☐	☒ N/A	Mapping of any OLRSMM-approved remedial actions/systems (including ELURs)
☒	☐	Location of existing and proposed roads, buildings, and other structures including limits of disturbance; ► Existing and proposed utilities (e.g., water, sewer, gas, electric) and easements; ► Location of existing and proposed conveyance systems, such as grass channels, swales, and storm drains, and location(s) of final discharge point(s) (wetland, waterbody, etc.); ► Cross sections of roadways, with edge details such as curbs and sidewalks; ► Location and dimensions of channel modifications, such as bridge or culvert crossings
☐	☒ N/A	Locations, cross sections, and profiles of all stream or wetland crossings and their method of stabilization

APPENDIX B – DRAINAGE CALCULATIONS

Kimley Horn
404 Wynman Street, Suite 385
Waltham, MA 02451

Overall Proposed Impervious Area Breakdown

Total Impervious Area under Proposed Conditions = 0.78 ac

Compute Groundwater Recharge Volume (Rev)

F 0.35 Recharge Factor (See Table 3-4)

Table 3-4 Recharge Factors Based on Hydrologic Soil Group (HSG)

HSG	Recharge Factor (F)
A	0.60
B	0.35
C	0.25
D	0.10

Rev **0.023** = Req'd Min. Runoff Reduction Volume (in ac-ft)

$$= \frac{(1")(F)(I)}{12}$$

Required Rev =	**0.023**	**ac-ft**

Pollutant Reduction (Water Quality Volume WQv)

WQv **0.065** = Req'd Water Quality WQv (in ac-ft)

$$= \frac{(1")(I)}{12}$$

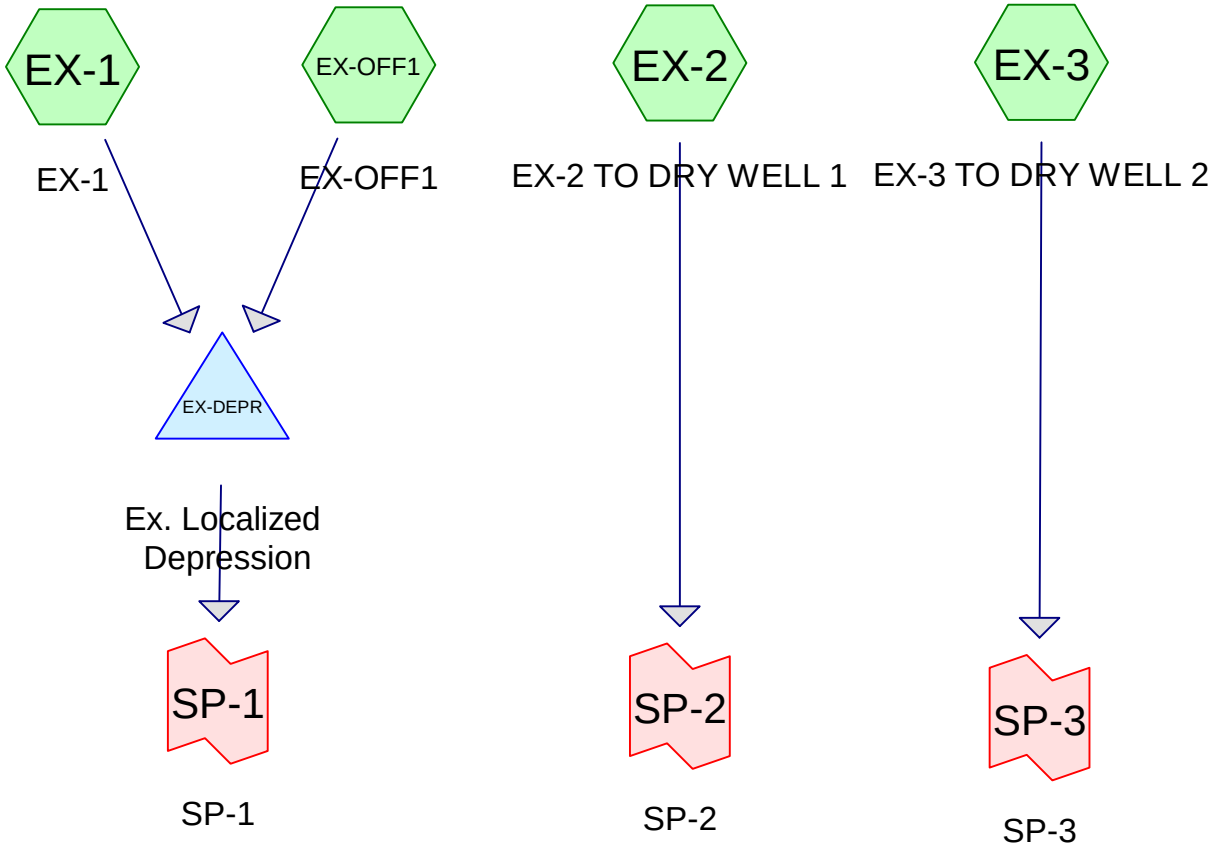
Area of Disturbance = 1.3 Acres (AoD)

Min WQv **0.022** = Req'd Water Quality WQv (in ac-ft)

$$= \frac{(0.2")(AoD)}{12}$$

Required WQv =	**2831**	**ft^3**
Provided WQv =	**34493**	**ft^3**

*See stage storage in Appendix B



Subcat Reach Pond Link

Routing Diagram for RMO - COVENTRY - EXISTING CONDITIONS-GH
Prepared by Kimley-Horn & Associates, Printed 9/20/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.001	68	<50% Grass cover, Poor, HSG A (EX-1)
0.030	39	>75% Grass cover, Good, HSG A (EX-3)
0.129	61	>75% Grass cover, Good, HSG B (EX-3, EX-OFF1)
1.004	98	Impervious (EX-1, EX-2, EX-3, EX-OFF1)
0.324	43	Woods/grass comb., Fair, HSG A (EX-1, EX-2, EX-OFF1)
0.977	65	Woods/grass comb., Fair, HSG B (EX-1, EX-OFF1)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.355	HSG A	EX-1, EX-2, EX-3, EX-OFF1
1.106	HSG B	EX-1, EX-3, EX-OFF1
0.000	HSG C	
0.000	HSG D	
1.004	Other	EX-1, EX-2, EX-3, EX-OFF1

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.001	0.000	0.000	0.000	0.000	0.001	<50% Grass cover, Poor	EX-1
0.030	0.129	0.000	0.000	0.000	0.159	>75% Grass cover, Good	EX-3, EX-OFF1
0.000	0.000	0.000	0.000	1.004	1.004	Impervious	EX-1, EX-2, EX-3, EX-OFF1
0.324	0.977	0.000	0.000	0.000	1.301	Woods/grass comb., Fair	EX-1, EX-2, EX-OFF1

Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 EX-1: EX-1 Runoff Area=1.288 ac 8.54% Impervious Runoff Depth=0.34"
Tc=5.0 min CN=64 Runoff=0.31 cfs 0.037 af

Subcatchment EX-2: EX-2 TO DRY WELL 1 Runoff Area=0.414 ac 80.19% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=87 Runoff=0.72 cfs 0.051 af

Subcatchment EX-3: EX-3 TO DRY WELL 2 Runoff Area=0.341 ac 86.22% Impervious Runoff Depth=1.79"
Tc=5.0 min CN=91 Runoff=0.71 cfs 0.051 af

Subcatchment EX-OFF1: EX-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=84 Runoff=0.63 cfs 0.045 af

Pond EX-DEPR: Ex. Localized Depression Peak Elev=251.88' Storage=0.082 af Inflow=0.92 cfs 0.082 af
Outflow=0.00 cfs 0.000 af

Link SP-1: SP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP-2: SP-2 Inflow=0.72 cfs 0.051 af
Primary=0.72 cfs 0.051 af

Link SP-3: SP-3 Inflow=0.71 cfs 0.051 af
Primary=0.71 cfs 0.051 af

Summary for Subcatchment EX-1: EX-1

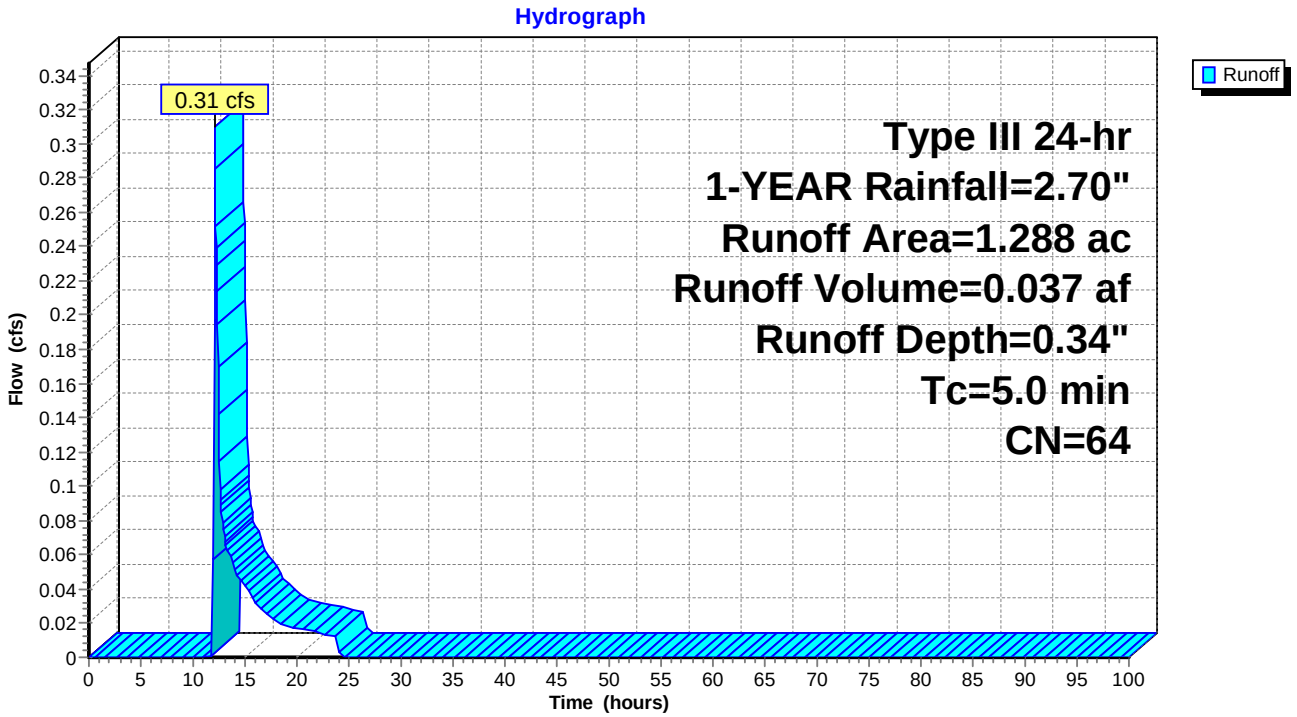
Runoff = 0.31 cfs @ 12.12 hrs, Volume= 0.037 af, Depth= 0.34"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.085	98	Impervious
*	0.025	98	Impervious
	0.001	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.233	43	Woods/grass comb., Fair, HSG A
	0.944	65	Woods/grass comb., Fair, HSG B
	1.288	64	Weighted Average
	1.178		91.46% Pervious Area
	0.110		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2 TO DRY WELL 1

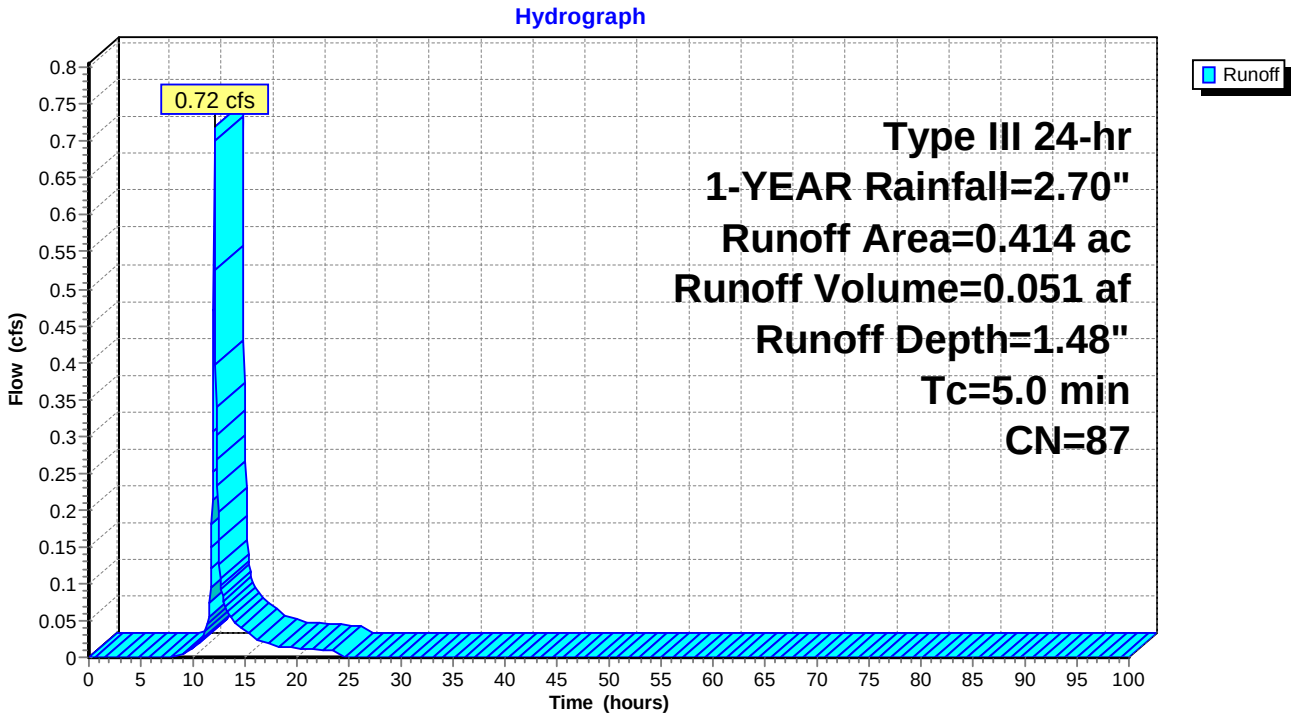
Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.051 af, Depth= 1.48"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.332	98	Impervious
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.082	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.414	87	Weighted Average
	0.082		19.81% Pervious Area
	0.332		80.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2 TO DRY WELL 1



Summary for Subcatchment EX-3: EX-3 TO DRY WELL 2

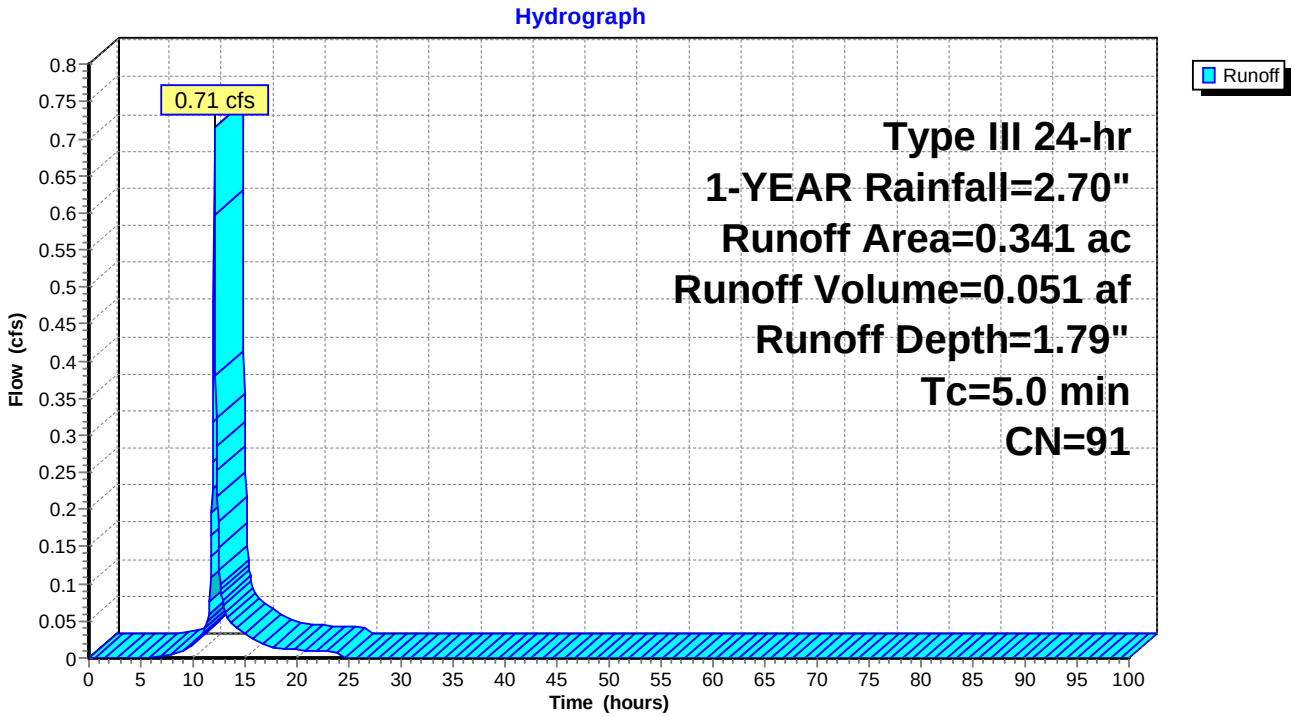
Runoff = 0.71 cfs @ 12.07 hrs, Volume= 0.051 af, Depth= 1.79"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.294	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.030	39	>75% Grass cover, Good, HSG A
	0.017	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.341	91	Weighted Average
	0.047		13.78% Pervious Area
	0.294		86.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3 TO DRY WELL 2



Summary for Subcatchment EX-OFF1: EX-OFF1

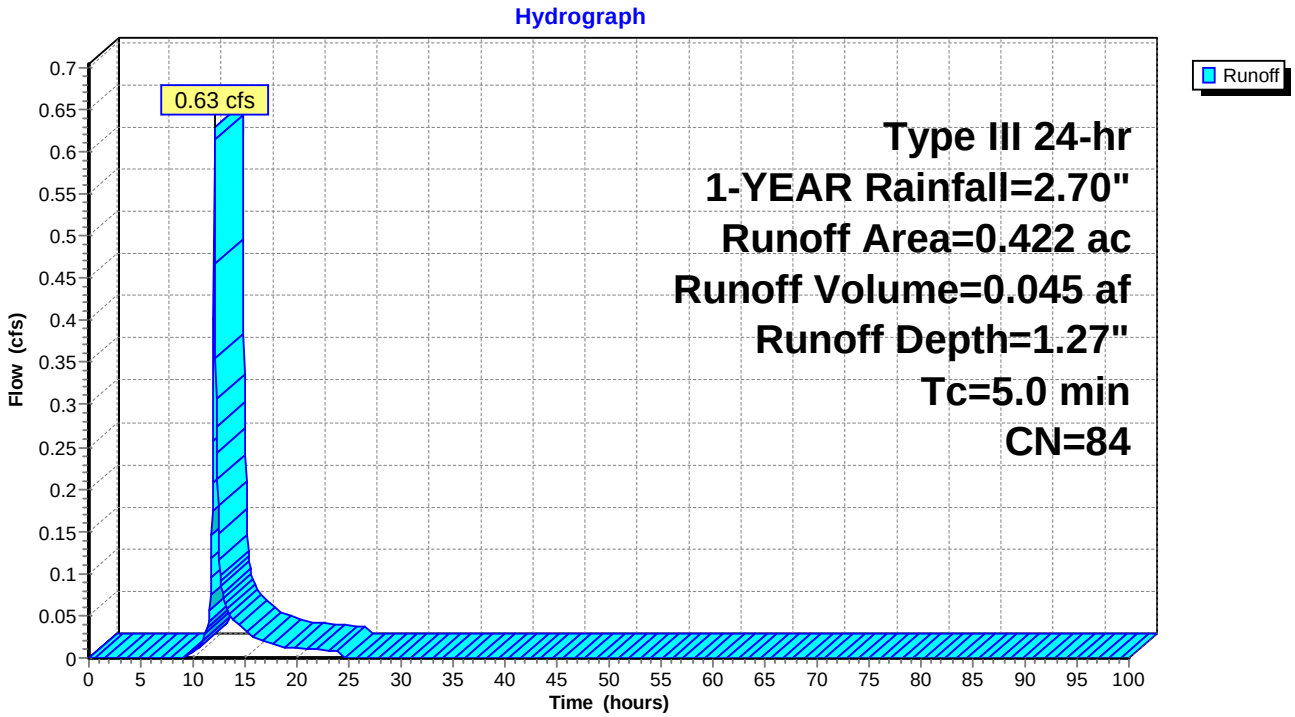
Runoff = 0.63 cfs @ 12.08 hrs, Volume= 0.045 af, Depth= 1.27"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-OFF1: EX-OFF1



Summary for Pond EX-DEPR: Ex. Localized Depression

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 0.57" for 1-YEAR event
Inflow = 0.92 cfs @ 12.10 hrs, Volume= 0.082 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 SP-1 : SP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 251.88' @ 24.35 hrs Surf.Area= 0.177 ac Storage= 0.082 af

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

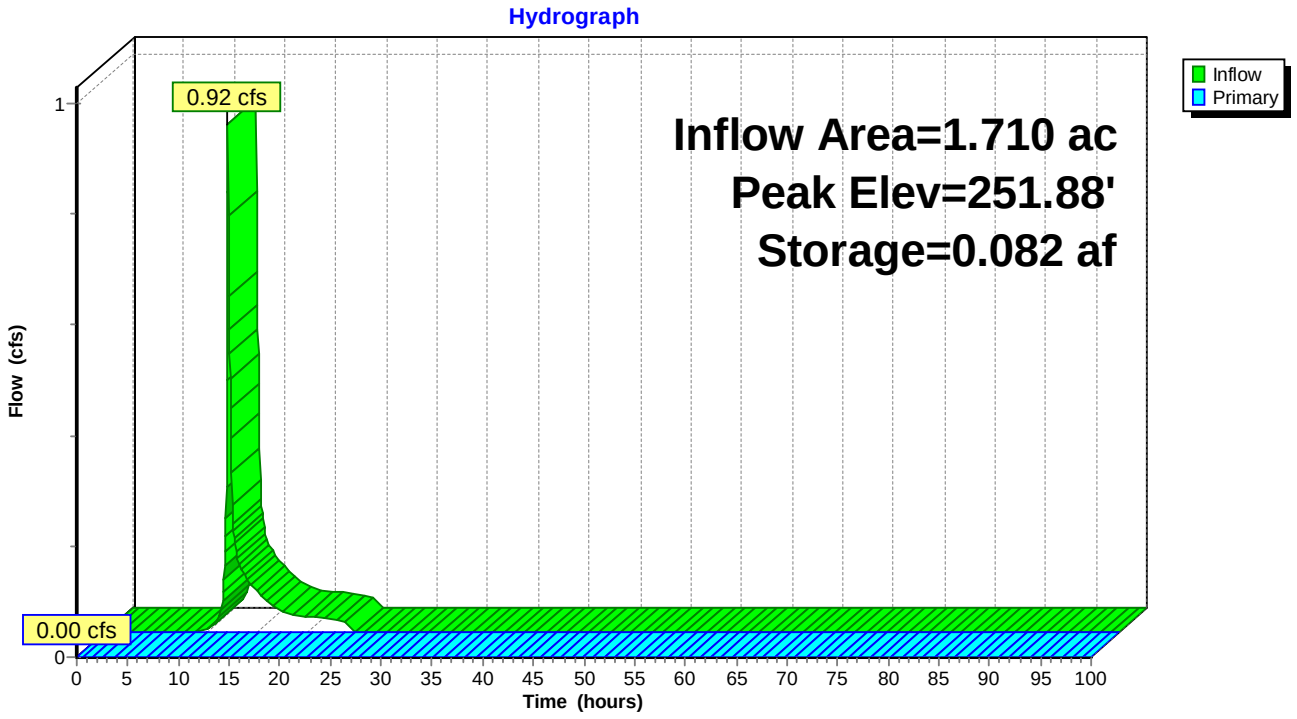
Volume	Invert	Avail.Storage	Storage Description
#1	251.00'	0.415 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
251.00	0.010	0.000	0.000
252.00	0.200	0.105	0.105
253.00	0.420	0.310	0.415

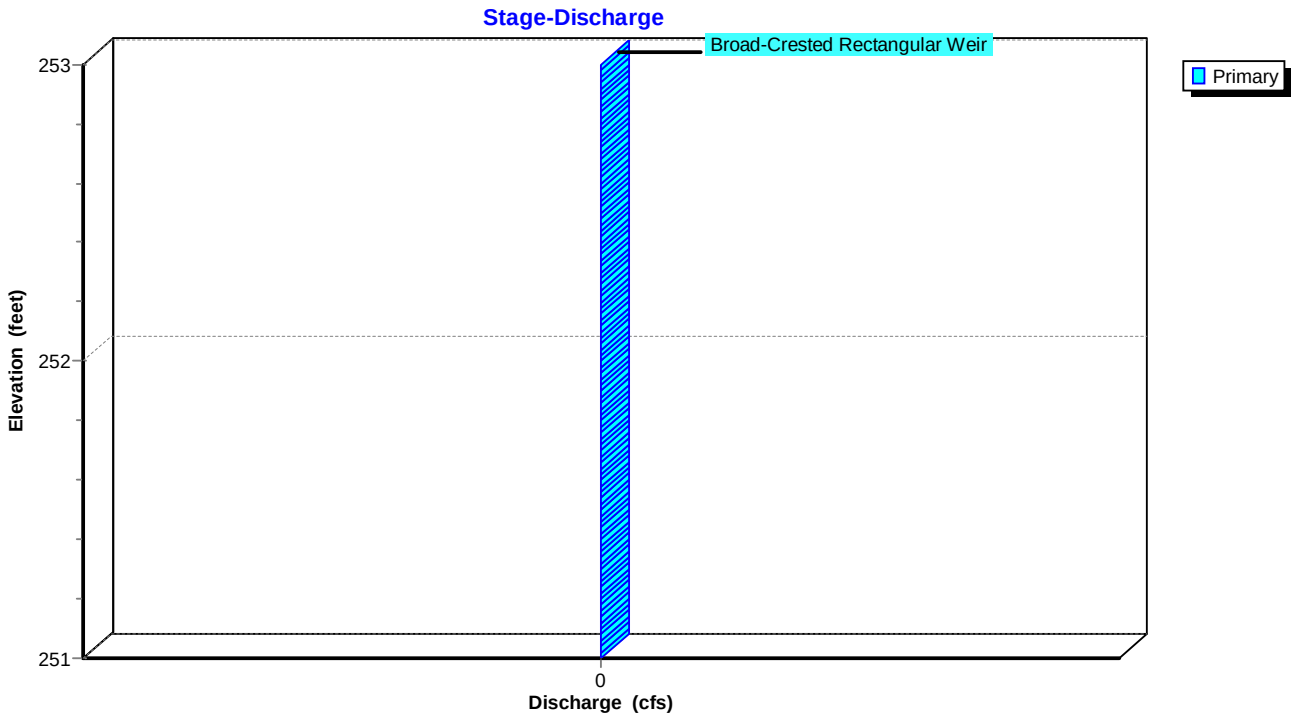
Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=251.00' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

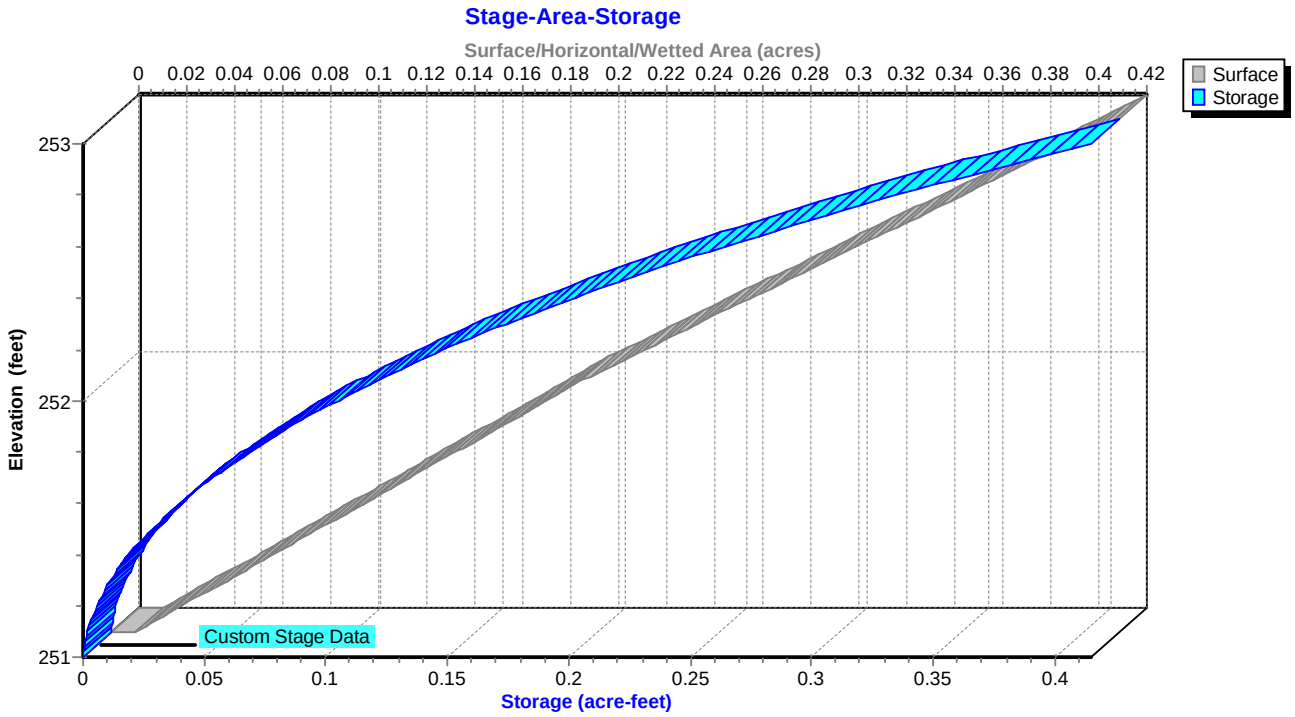
Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression

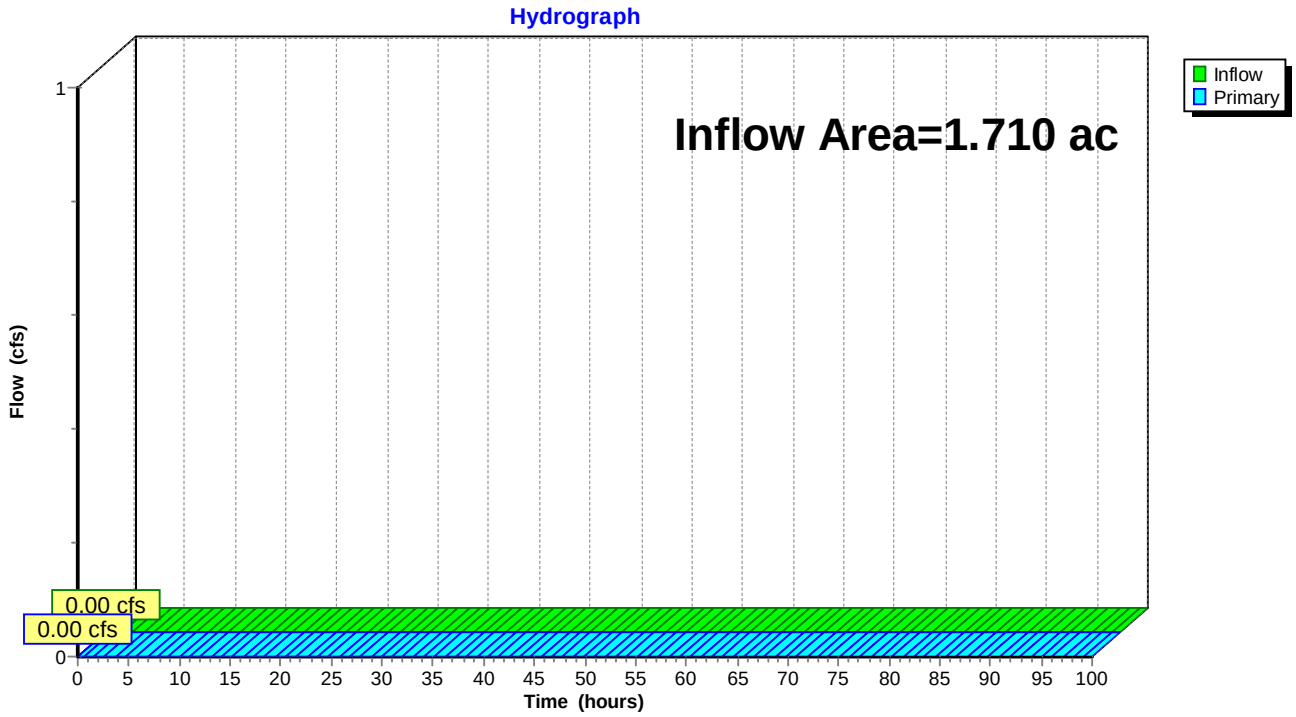


Summary for Link SP-1: SP-1

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 0.00" for 1-YEAR 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 SP-1: SP-1

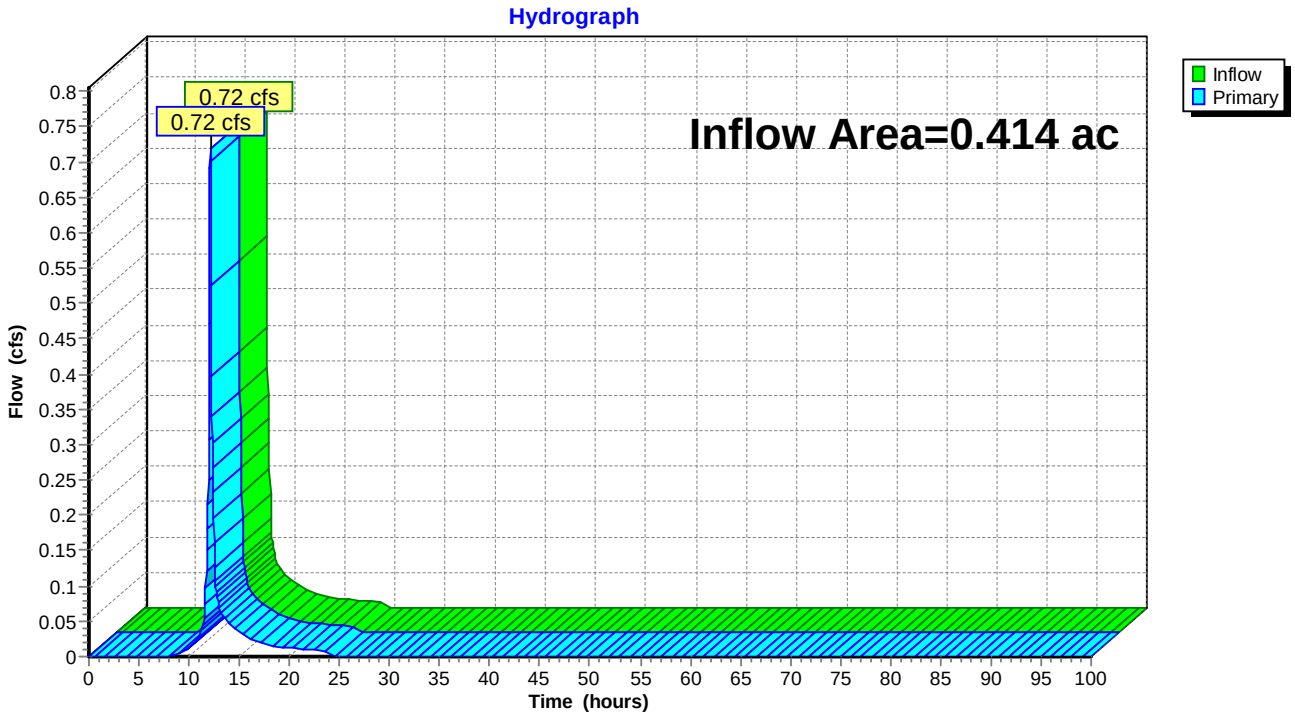


Summary for Link SP-2: SP-2

Inflow Area = 0.414 ac, 80.19% Impervious, Inflow Depth = 1.48" for 1-YEAR event
Inflow = 0.72 cfs @ 12.08 hrs, Volume= 0.051 af
Primary = 0.72 cfs @ 12.08 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

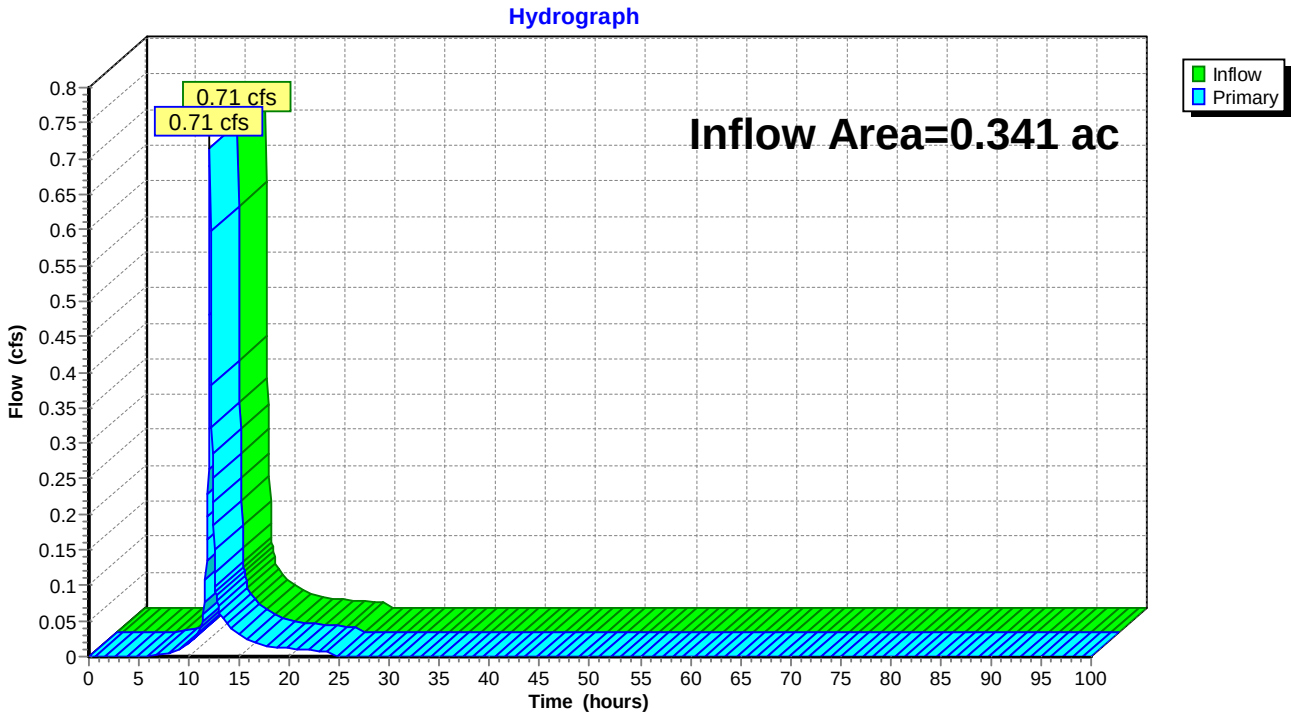


Summary for Link SP-3: SP-3

Inflow Area = 0.341 ac, 86.22% Impervious, Inflow Depth = 1.79" for 1-YEAR event
Inflow = 0.71 cfs @ 12.07 hrs, Volume= 0.051 af
Primary = 0.71 cfs @ 12.07 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

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

Link SP-3: SP-3



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 EX-1: EX-1 Runoff Area=1.288 ac 8.54% Impervious Runoff Depth=1.45"
Tc=5.0 min CN=64 Runoff=2.06 cfs 0.156 af

Subcatchment EX-2: EX-2 TO DRY WELL 1 Runoff Area=0.414 ac 80.19% Impervious Runoff Depth=3.38"
Tc=5.0 min CN=87 Runoff=1.62 cfs 0.117 af

Subcatchment EX-3: EX-3 TO DRY WELL 2 Runoff Area=0.341 ac 86.22% Impervious Runoff Depth=3.79"
Tc=5.0 min CN=91 Runoff=1.46 cfs 0.108 af

Subcatchment EX-OFF1: EX-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=3.09"
Tc=5.0 min CN=84 Runoff=1.53 cfs 0.109 af

Pond EX-DEPR: Ex. Localized Depression Peak Elev=252.60' Storage=0.264 af Inflow=3.57 cfs 0.264 af
Outflow=0.00 cfs 0.000 af

Link SP-1: SP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP-2: SP-2 Inflow=1.62 cfs 0.117 af
Primary=1.62 cfs 0.117 af

Link SP-3: SP-3 Inflow=1.46 cfs 0.108 af
Primary=1.46 cfs 0.108 af

Summary for Subcatchment EX-1: EX-1

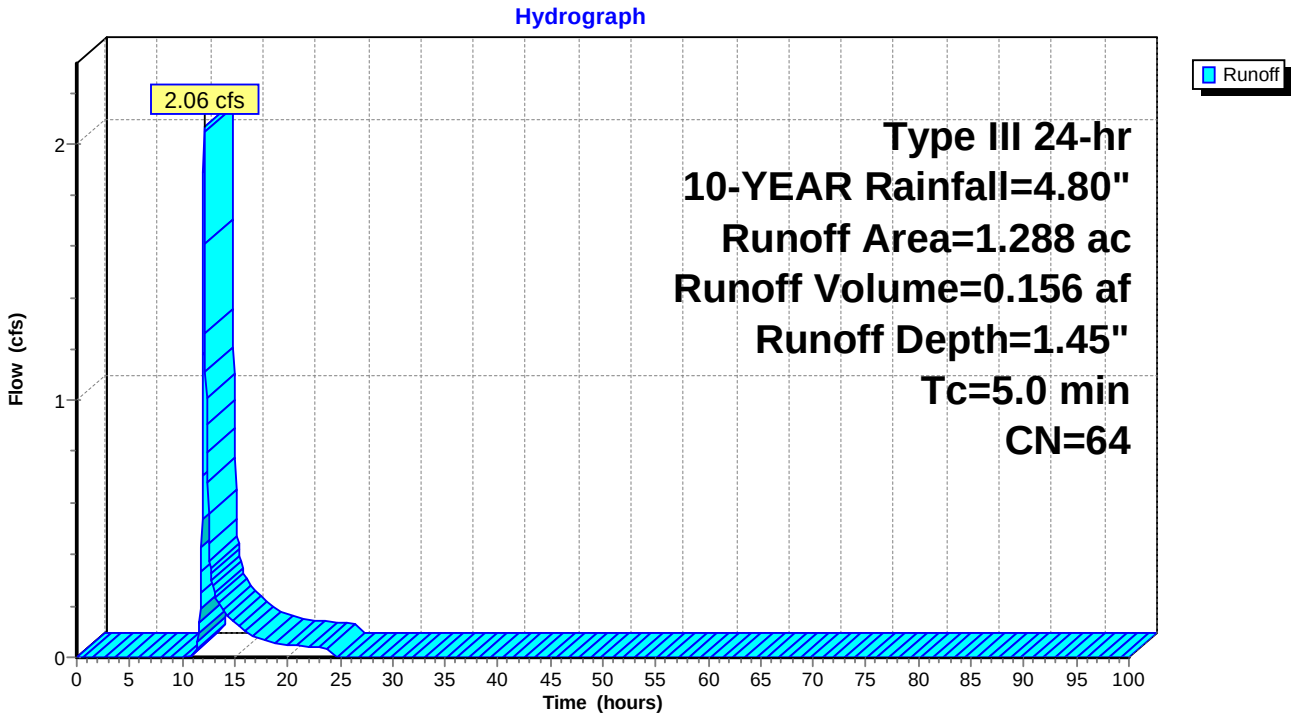
Runoff = 2.06 cfs @ 12.09 hrs, Volume= 0.156 af, Depth= 1.45"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.085	98	Impervious
*	0.025	98	Impervious
	0.001	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.233	43	Woods/grass comb., Fair, HSG A
	0.944	65	Woods/grass comb., Fair, HSG B
	1.288	64	Weighted Average
	1.178		91.46% Pervious Area
	0.110		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2 TO DRY WELL 1

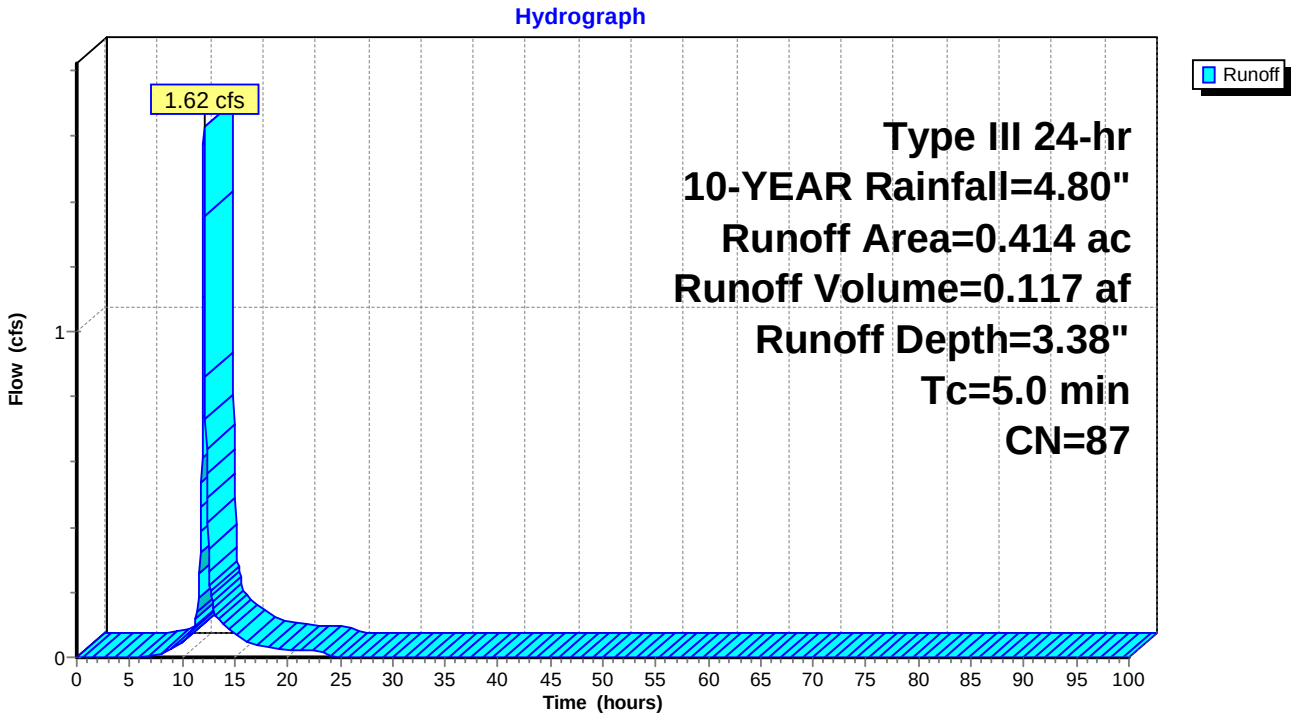
Runoff = 1.62 cfs @ 12.07 hrs, Volume= 0.117 af, Depth= 3.38"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.332	98	Impervious
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.082	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.414	87	Weighted Average
	0.082		19.81% Pervious Area
	0.332		80.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2 TO DRY WELL 1



Summary for Subcatchment EX-3: EX-3 TO DRY WELL 2

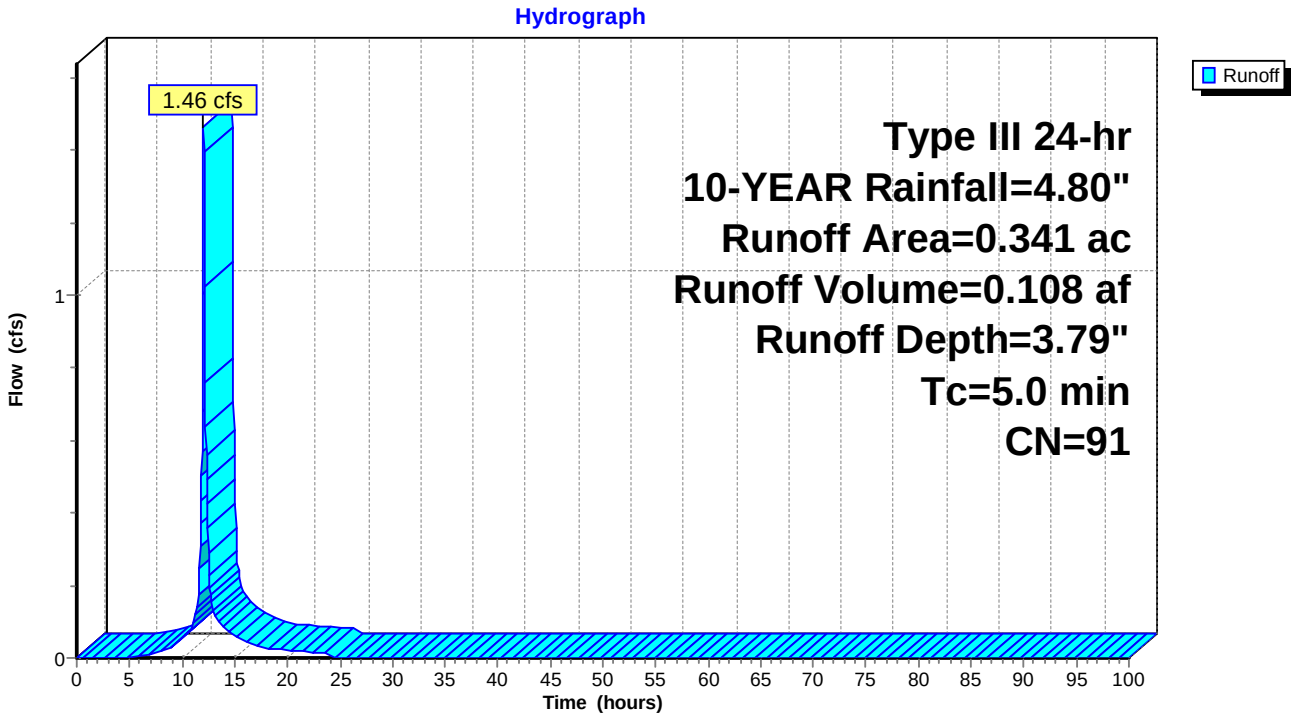
Runoff = 1.46 cfs @ 12.07 hrs, Volume= 0.108 af, Depth= 3.79"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.294	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.030	39	>75% Grass cover, Good, HSG A
	0.017	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.341	91	Weighted Average
	0.047		13.78% Pervious Area
	0.294		86.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3 TO DRY WELL 2



Summary for Subcatchment EX-OFF1: EX-OFF1

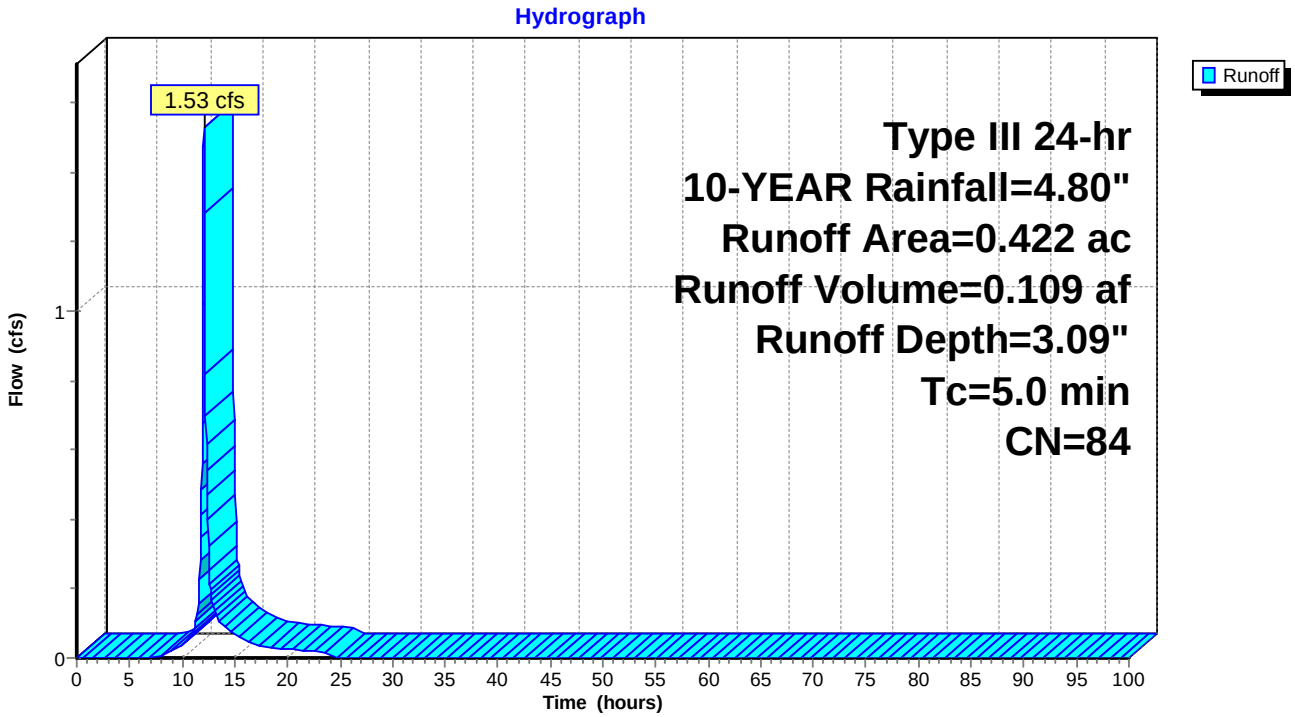
Runoff = 1.53 cfs @ 12.07 hrs, Volume= 0.109 af, Depth= 3.09"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-OFF1: EX-OFF1



Summary for Pond EX-DEPR: Ex. Localized Depression

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 1.86" for 10-YEAR event
Inflow = 3.57 cfs @ 12.08 hrs, Volume= 0.264 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 SP-1 : SP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 252.60' @ 24.35 hrs Surf.Area= 0.332 ac Storage= 0.264 af

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

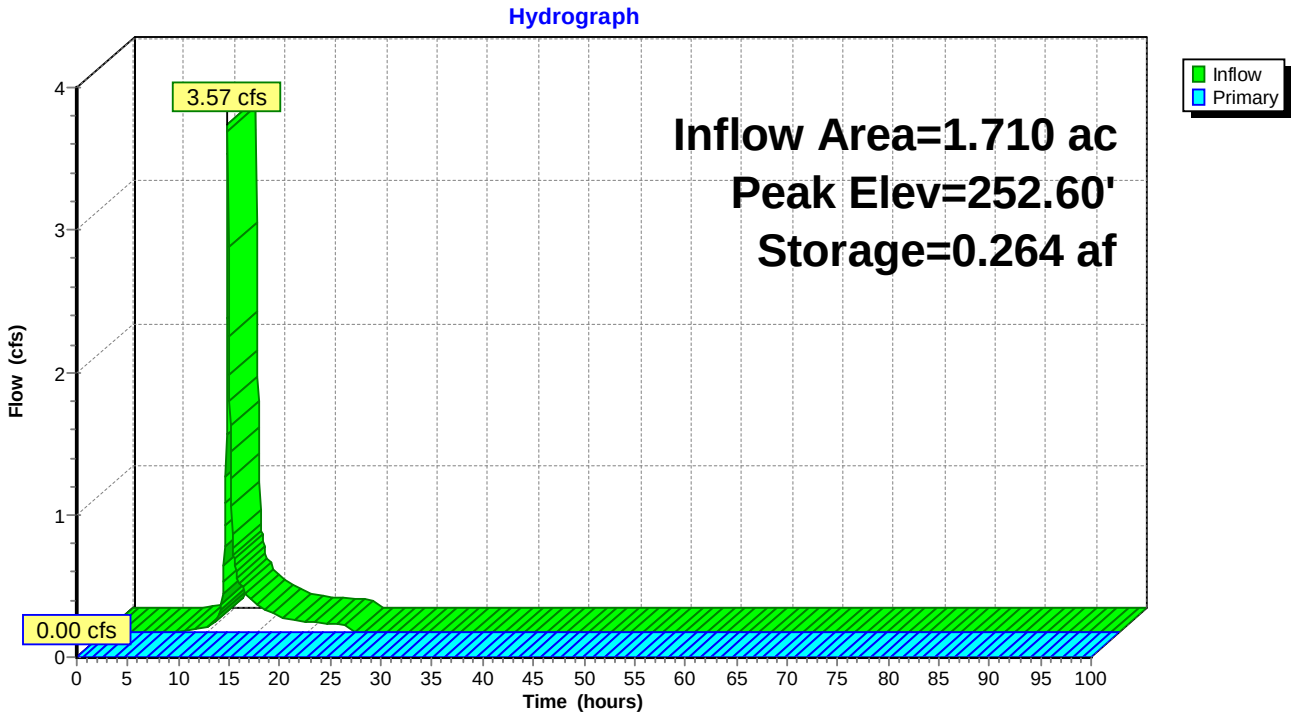
Volume	Invert	Avail.Storage	Storage Description
#1	251.00'	0.415 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
251.00	0.010	0.000	0.000
252.00	0.200	0.105	0.105
253.00	0.420	0.310	0.415

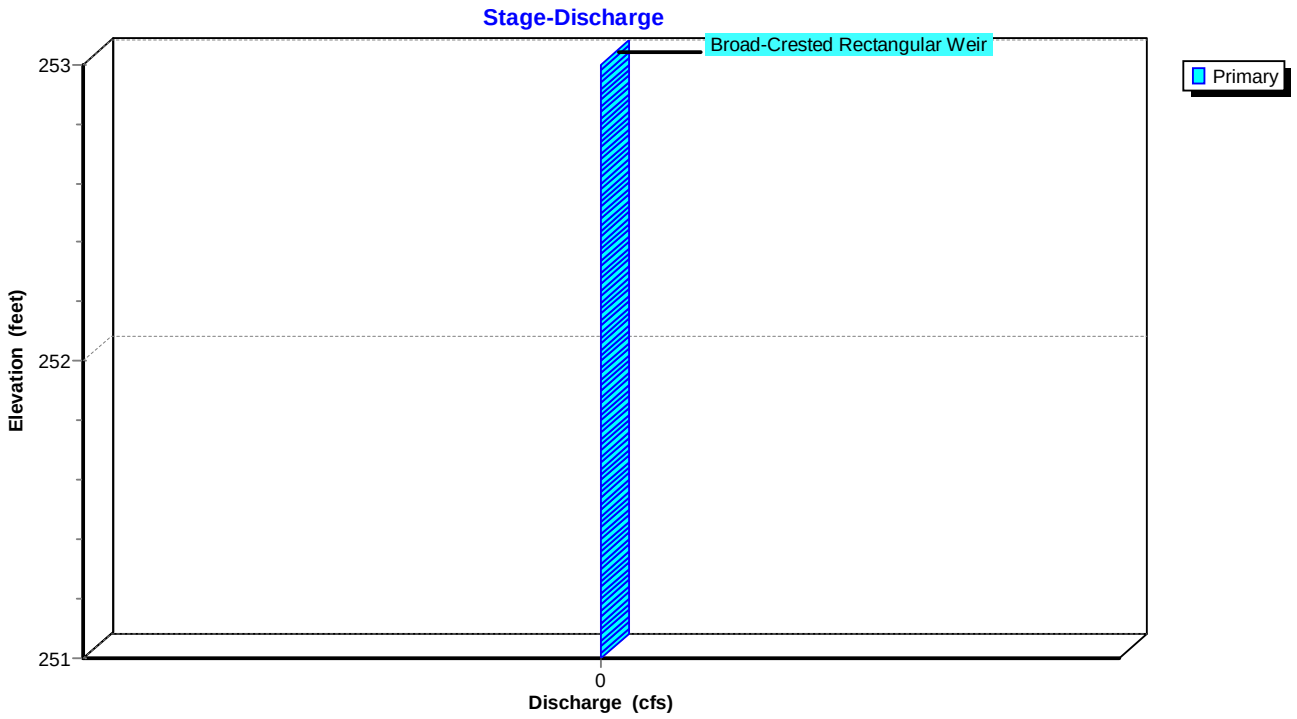
Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=251.00' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

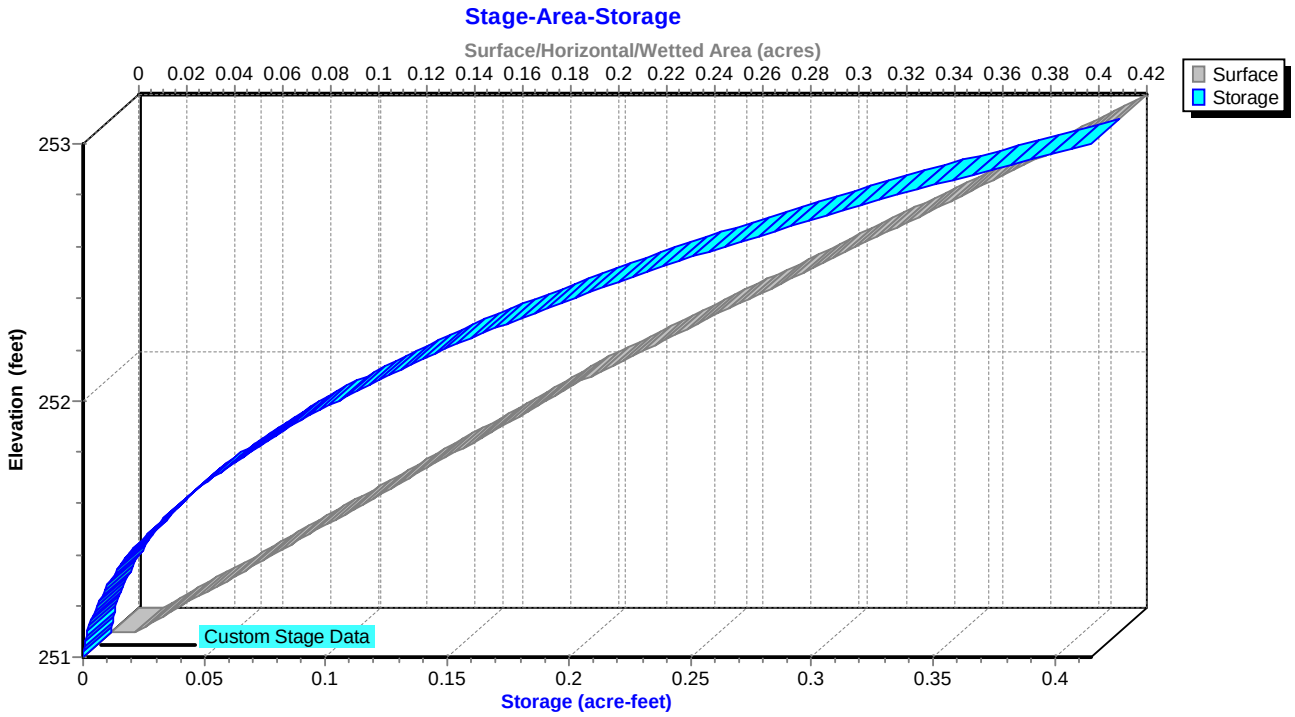
Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression

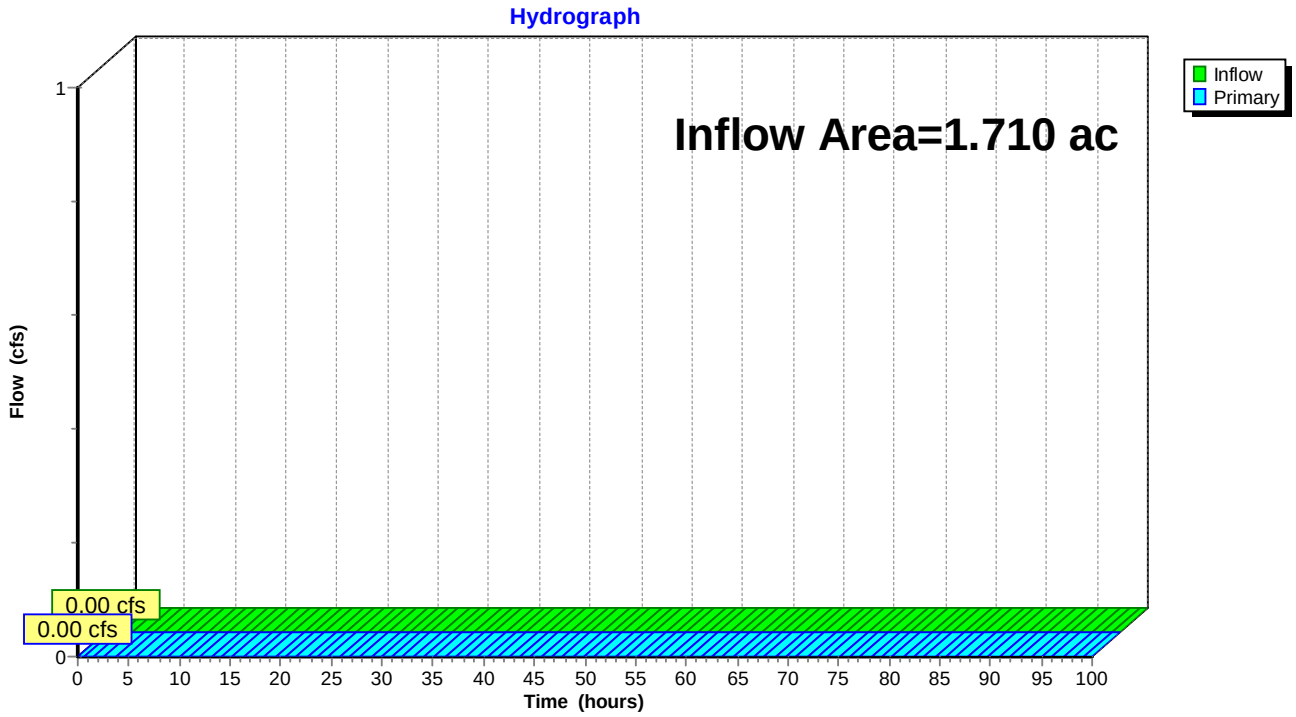


Summary for Link SP-1: SP-1

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 0.00" for 10-YEAR 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 SP-1: SP-1

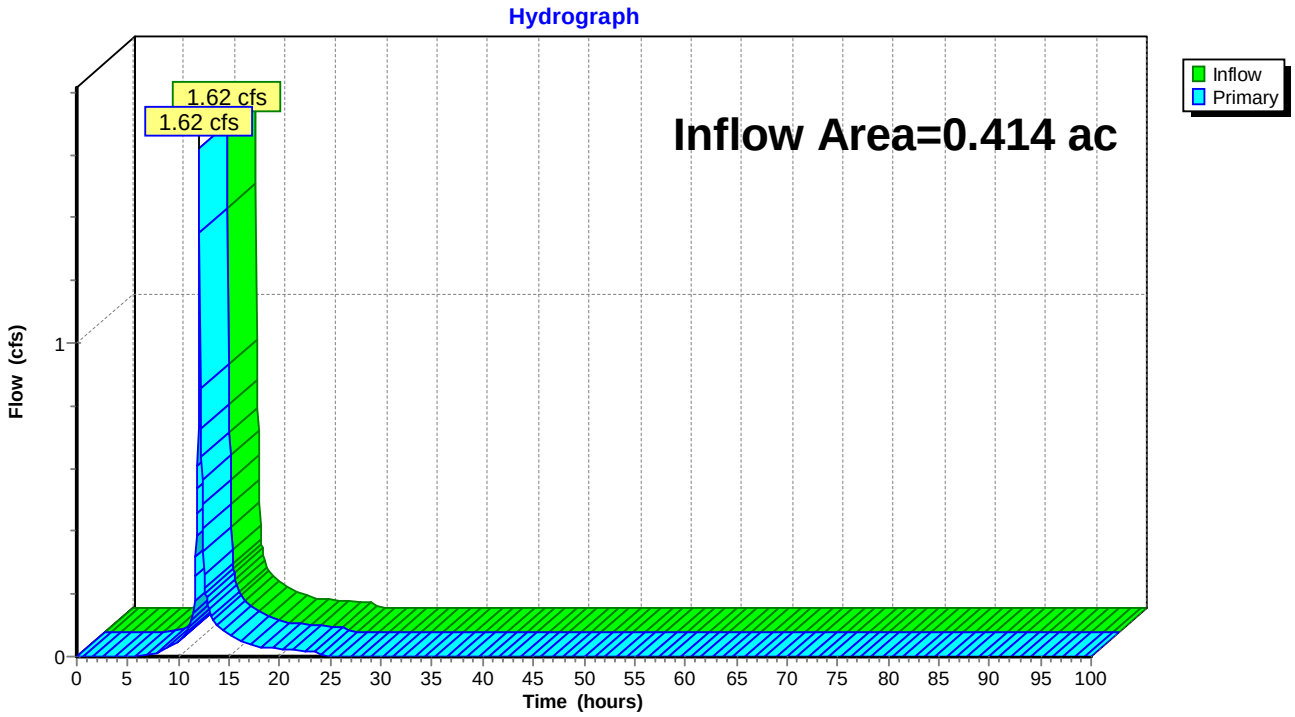


Summary for Link SP-2: SP-2

Inflow Area = 0.414 ac, 80.19% Impervious, Inflow Depth = 3.38" for 10-YEAR event
Inflow = 1.62 cfs @ 12.07 hrs, Volume= 0.117 af
Primary = 1.62 cfs @ 12.07 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

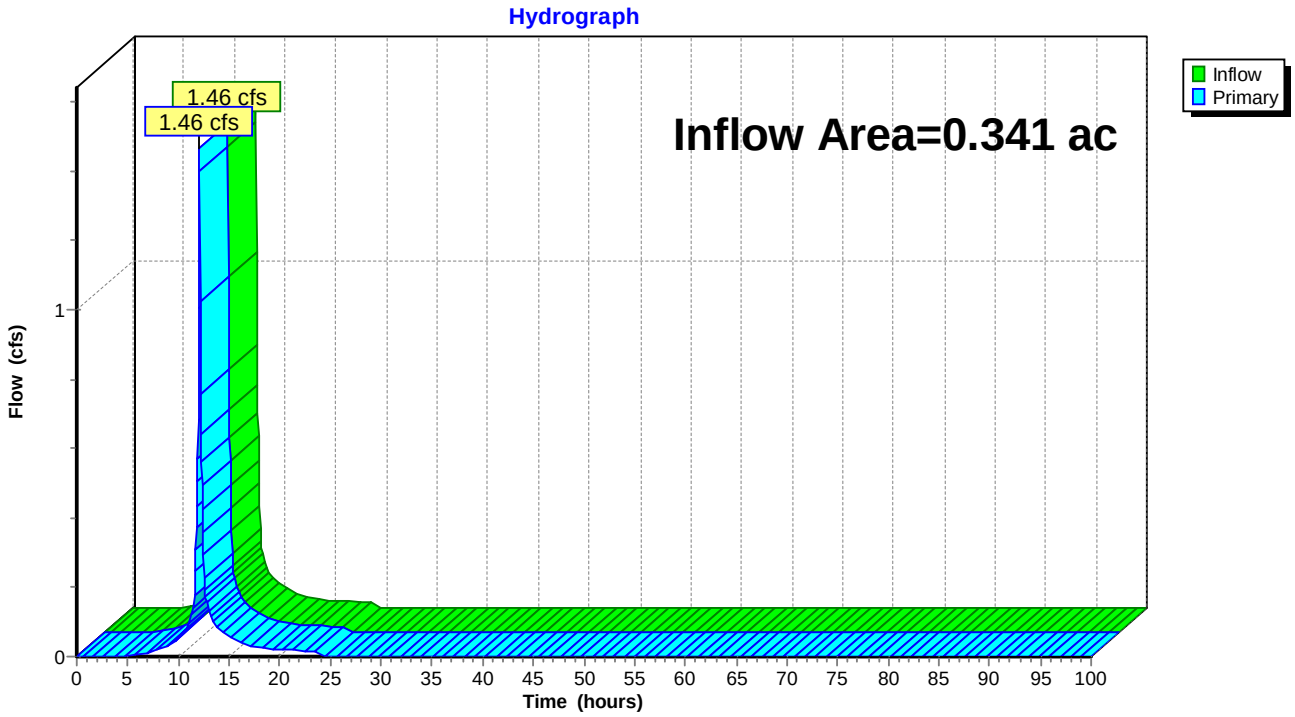


Summary for Link SP-3: SP-3

Inflow Area = 0.341 ac, 86.22% Impervious, Inflow Depth = 3.79" for 10-YEAR event
Inflow = 1.46 cfs @ 12.07 hrs, Volume= 0.108 af
Primary = 1.46 cfs @ 12.07 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

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

Link SP-3: SP-3



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 EX-1: EX-1 Runoff Area=1.288 ac 8.54% Impervious Runoff Depth=4.35"
Tc=5.0 min CN=64 Runoff=6.56 cfs 0.467 af

Subcatchment EX-2: EX-2 TO DRY WELL 1 Runoff Area=0.414 ac 80.19% Impervious Runoff Depth=7.13"
Tc=5.0 min CN=87 Runoff=3.30 cfs 0.246 af

Subcatchment EX-3: EX-3 TO DRY WELL 2 Runoff Area=0.341 ac 86.22% Impervious Runoff Depth=7.62"
Tc=5.0 min CN=91 Runoff=2.83 cfs 0.216 af

Subcatchment EX-OFF1: EX-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=6.77"
Tc=5.0 min CN=84 Runoff=3.25 cfs 0.238 af

Pond EX-DEPR: Ex. Localized Depression Peak Elev=253.16' Storage=0.415 af Inflow=9.78 cfs 0.705 af
Outflow=2.18 cfs 0.290 af

Link SP-1: SP-1 Inflow=2.18 cfs 0.290 af
Primary=2.18 cfs 0.290 af

Link SP-2: SP-2 Inflow=3.30 cfs 0.246 af
Primary=3.30 cfs 0.246 af

Link SP-3: SP-3 Inflow=2.83 cfs 0.216 af
Primary=2.83 cfs 0.216 af

Summary for Subcatchment EX-1: EX-1

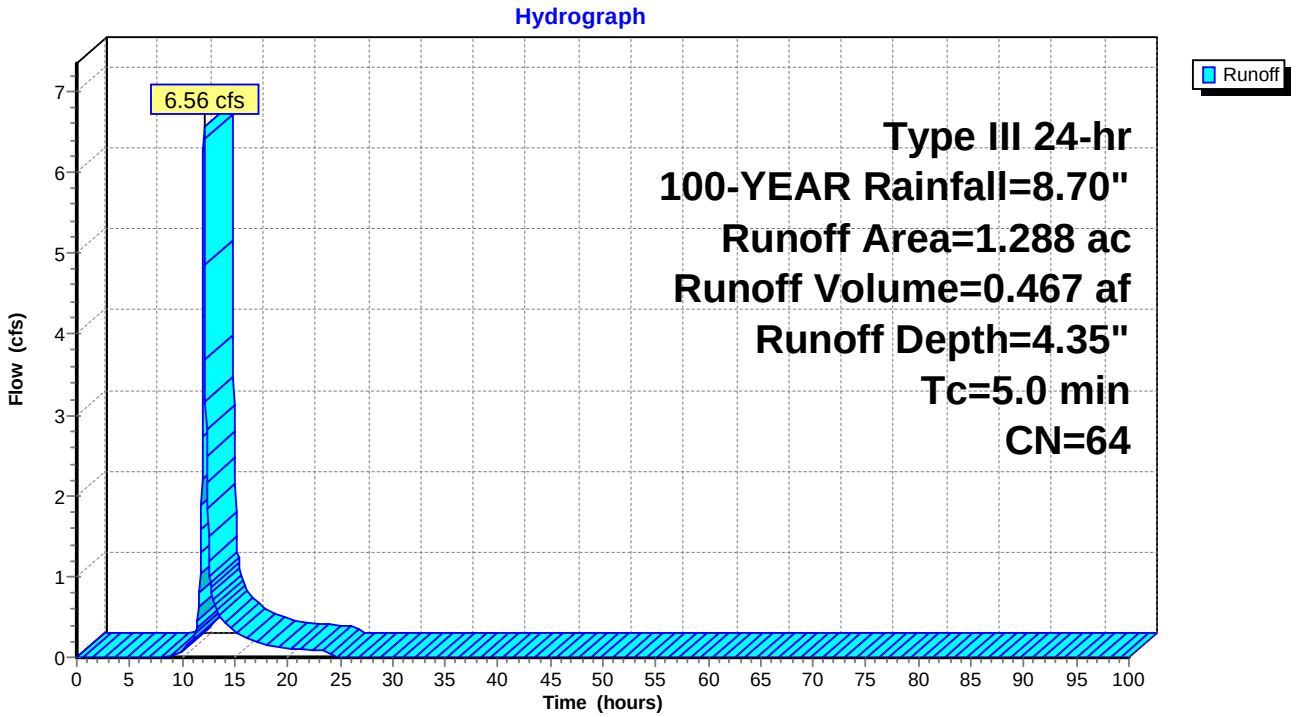
Runoff = 6.56 cfs @ 12.08 hrs, Volume= 0.467 af, Depth= 4.35"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.085	98	Impervious
*	0.025	98	Impervious
	0.001	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.233	43	Woods/grass comb., Fair, HSG A
	0.944	65	Woods/grass comb., Fair, HSG B
	1.288	64	Weighted Average
	1.178		91.46% Pervious Area
	0.110		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2 TO DRY WELL 1

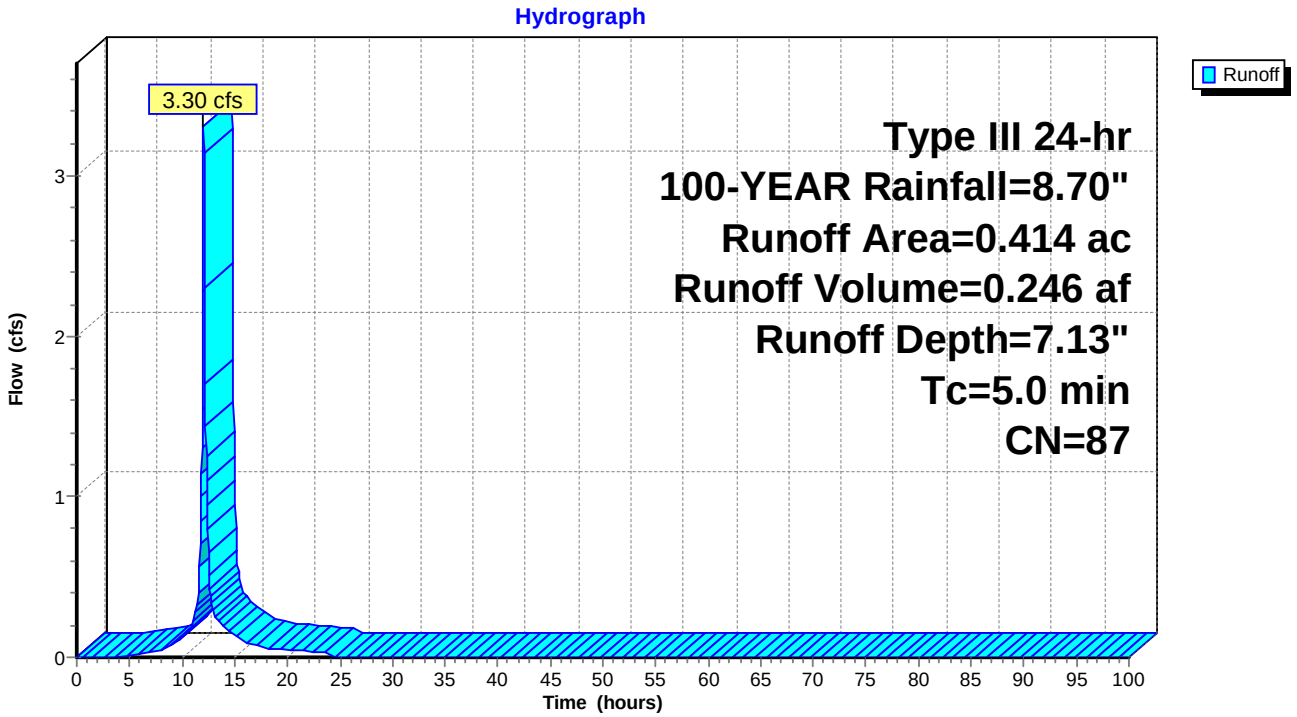
Runoff = 3.30 cfs @ 12.07 hrs, Volume= 0.246 af, Depth= 7.13"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.332	98	Impervious
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.082	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.414	87	Weighted Average
	0.082		19.81% Pervious Area
	0.332		80.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2 TO DRY WELL 1



Summary for Subcatchment EX-3: EX-3 TO DRY WELL 2

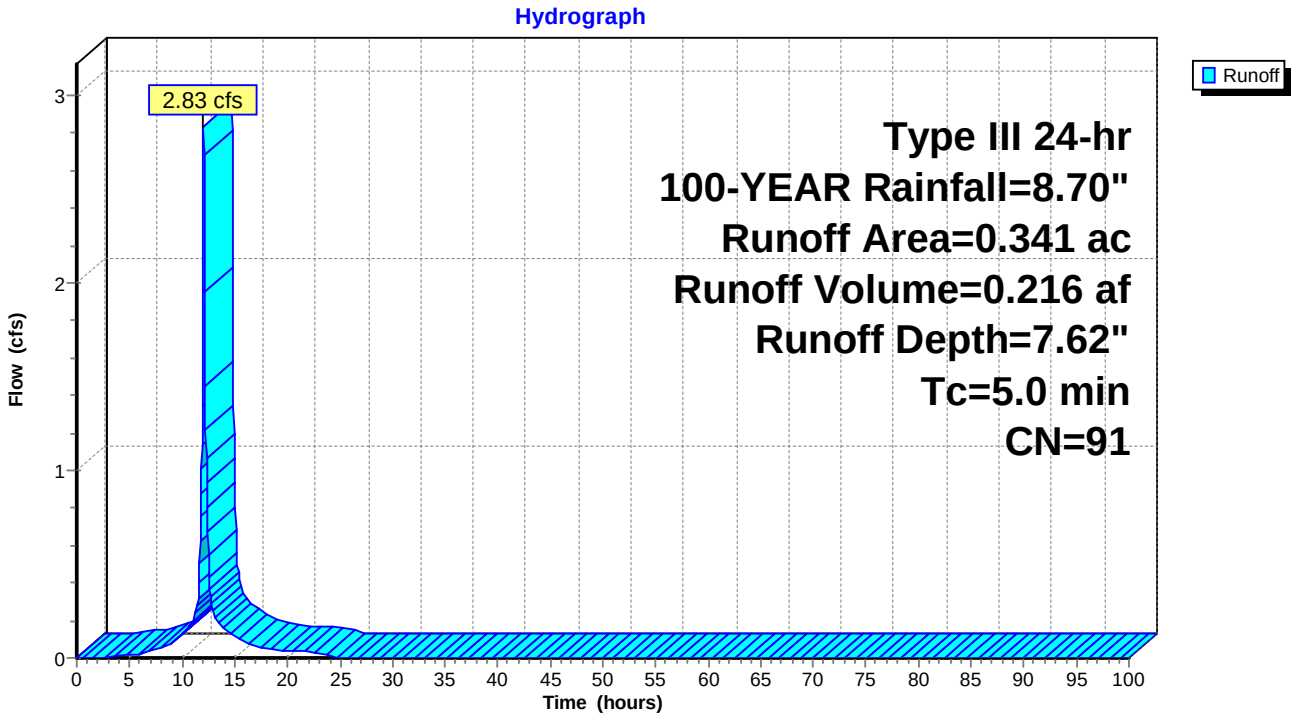
Runoff = 2.83 cfs @ 12.07 hrs, Volume= 0.216 af, Depth= 7.62"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.294	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.030	39	>75% Grass cover, Good, HSG A
	0.017	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.341	91	Weighted Average
	0.047		13.78% Pervious Area
	0.294		86.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3 TO DRY WELL 2



Summary for Subcatchment EX-OFF1: EX-OFF1

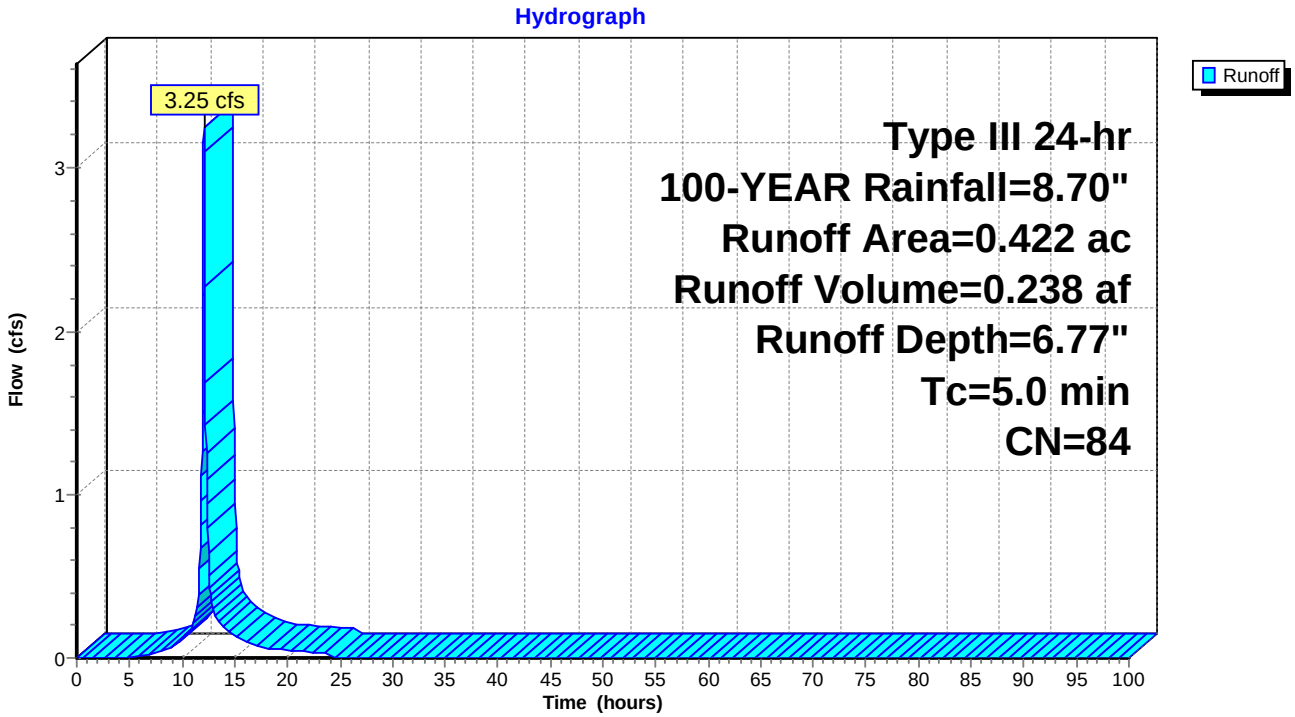
Runoff = 3.25 cfs @ 12.07 hrs, Volume= 0.238 af, Depth= 6.77"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-OFF1: EX-OFF1



Summary for Pond EX-DEPR: Ex. Localized Depression

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 4.94" for 100-YEAR event
Inflow = 9.78 cfs @ 12.08 hrs, Volume= 0.705 af
Outflow = 2.18 cfs @ 12.75 hrs, Volume= 0.290 af, Atten= 78%, Lag= 40.4 min
Primary = 2.18 cfs @ 12.75 hrs, Volume= 0.290 af
Routed to Link SP-1 : SP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 253.16' @ 12.75 hrs Surf.Area= 0.420 ac Storage= 0.415 af

Plug-Flow detention time= 281.7 min calculated for 0.290 af (41% of inflow)
Center-of-Mass det. time= 157.4 min (975.3 - 817.9)

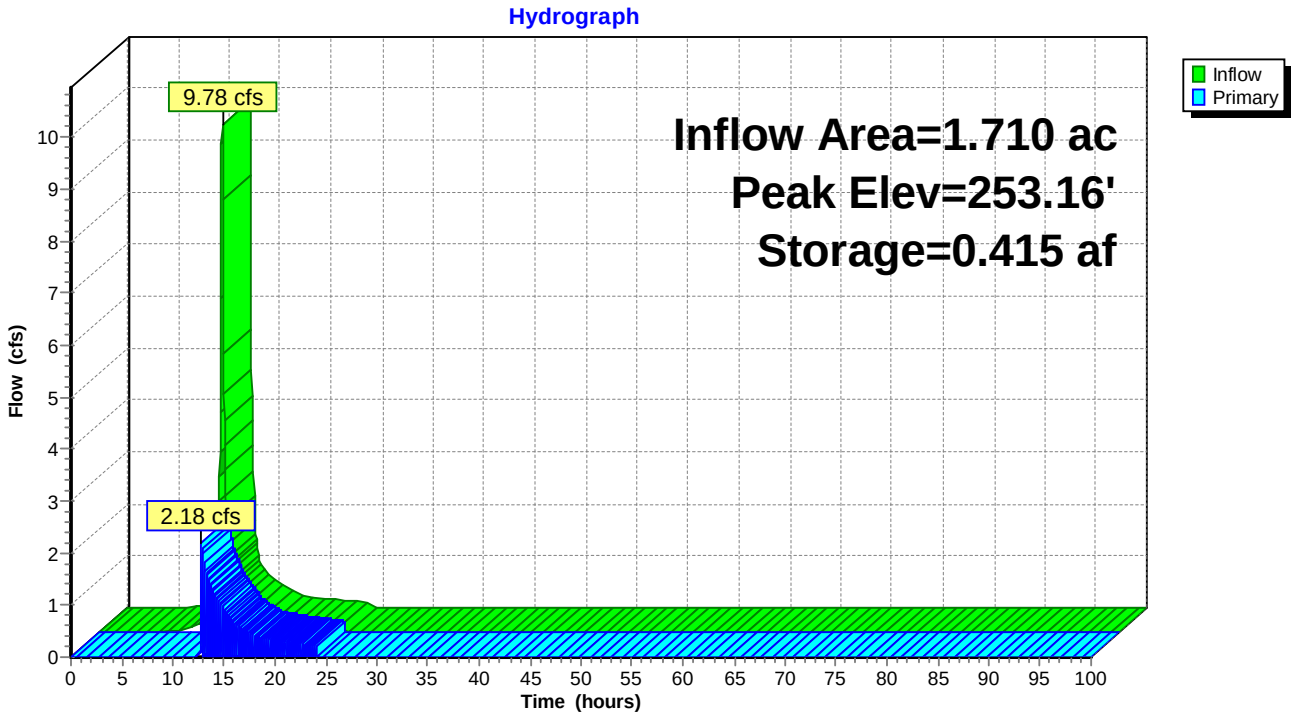
Volume	Invert	Avail.Storage	Storage Description
#1	251.00'	0.415 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
251.00	0.010	0.000	0.000
252.00	0.200	0.105	0.105
253.00	0.420	0.310	0.415

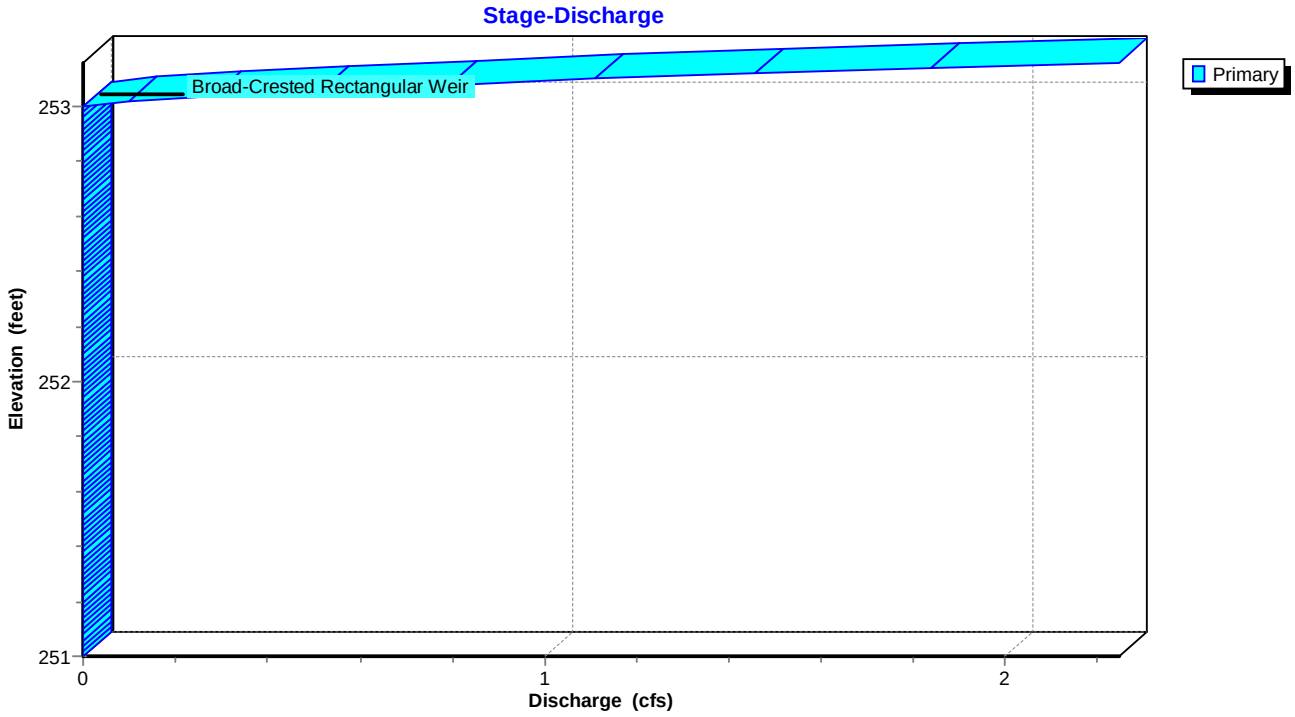
Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.18 cfs @ 12.75 hrs HW=253.16' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 2.18 cfs @ 0.93 fps)

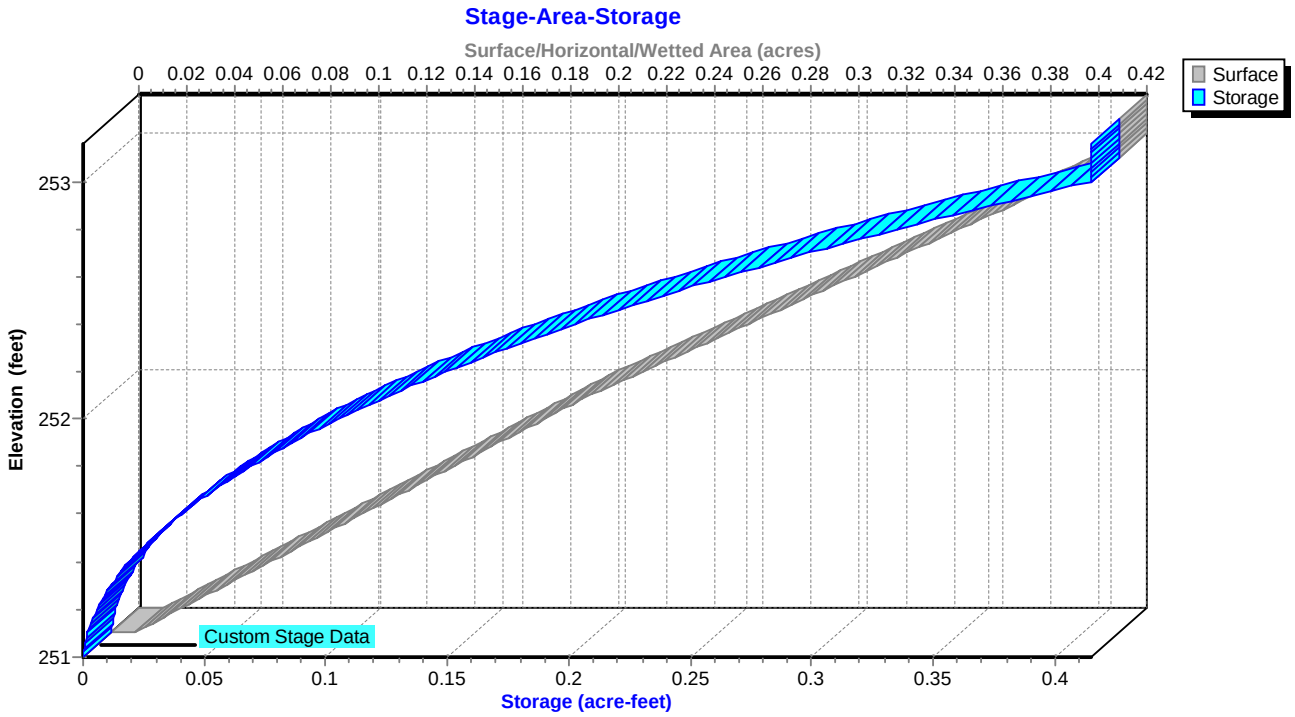
Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression

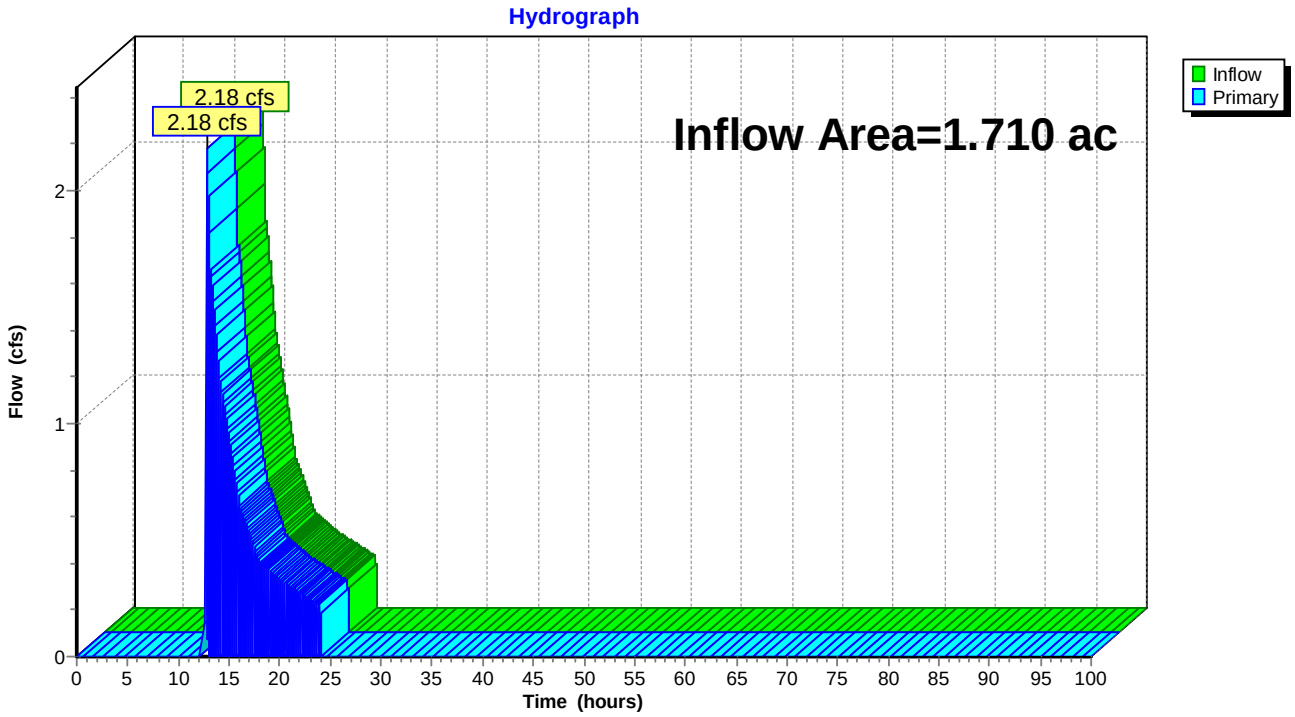


Summary for Link SP-1: SP-1

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 2.03" for 100-YEAR event
Inflow = 2.18 cfs @ 12.75 hrs, Volume= 0.290 af
Primary = 2.18 cfs @ 12.75 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min

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

Link SP-1: SP-1

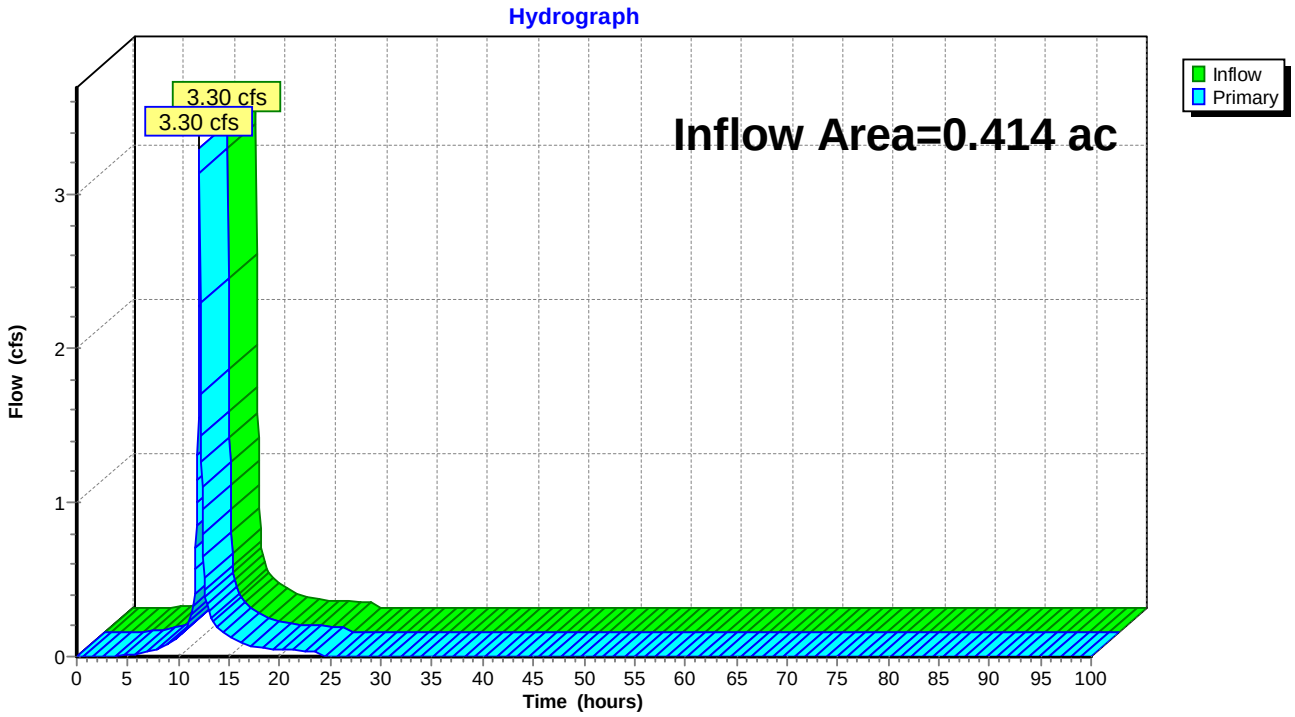


Summary for Link SP-2: SP-2

Inflow Area = 0.414 ac, 80.19% Impervious, Inflow Depth = 7.13" for 100-YEAR event
Inflow = 3.30 cfs @ 12.07 hrs, Volume= 0.246 af
Primary = 3.30 cfs @ 12.07 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

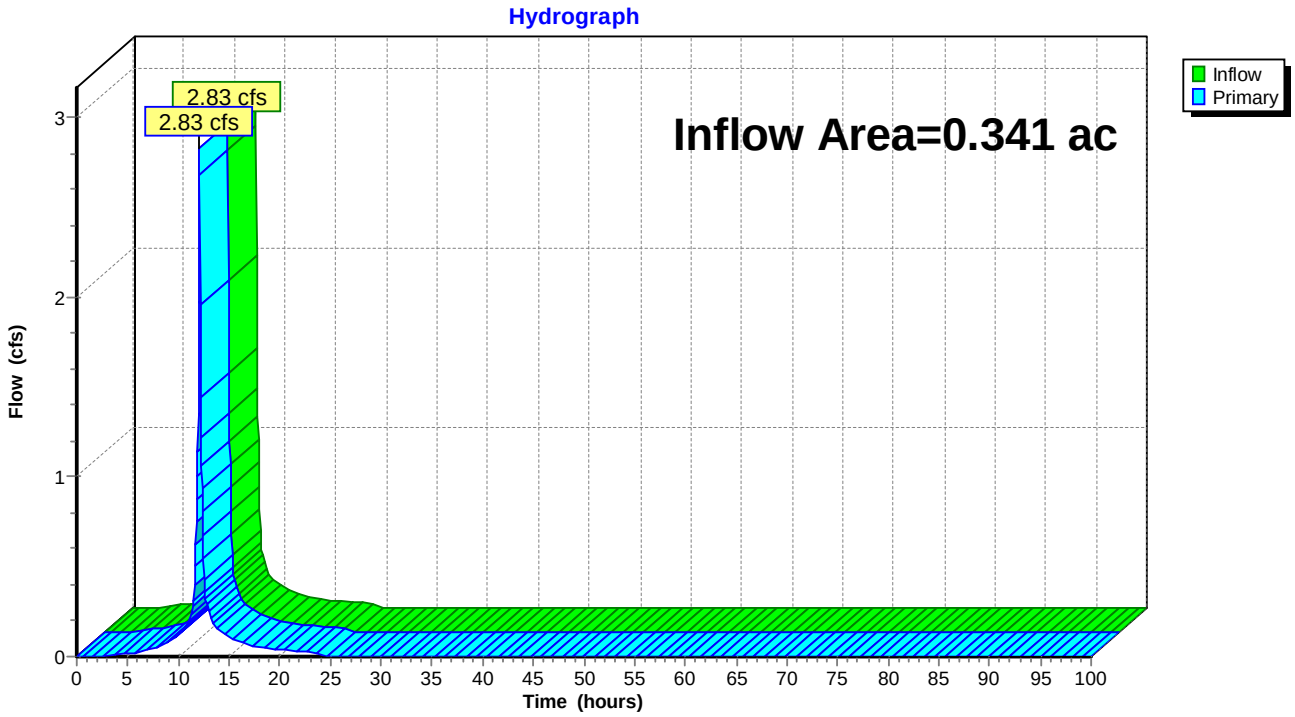


Summary for Link SP-3: SP-3

Inflow Area = 0.341 ac, 86.22% Impervious, Inflow Depth = 7.62" for 100-YEAR event
Inflow = 2.83 cfs @ 12.07 hrs, Volume= 0.216 af
Primary = 2.83 cfs @ 12.07 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min

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

Link SP-3: SP-3



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 EX-1: EX-1 Runoff Area=1.288 ac 8.54% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=64 Runoff=0.00 cfs 0.000 af

Subcatchment EX-2: EX-2 TO DRY WELL 1 Runoff Area=0.414 ac 80.19% Impervious Runoff Depth=0.34"
Tc=5.0 min CN=87 Runoff=0.15 cfs 0.012 af

Subcatchment EX-3: EX-3 TO DRY WELL 2 Runoff Area=0.341 ac 86.22% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=91 Runoff=0.20 cfs 0.014 af

Subcatchment EX-OFF1: EX-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=0.25"
Tc=5.0 min CN=84 Runoff=0.10 cfs 0.009 af

Pond EX-DEPR: Ex. Localized Depression Peak Elev=251.26' Storage=0.009 af Inflow=0.10 cfs 0.009 af
Outflow=0.00 cfs 0.000 af

Link SP-1: SP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP-2: SP-2 Inflow=0.15 cfs 0.012 af
Primary=0.15 cfs 0.012 af

Link SP-3: SP-3 Inflow=0.20 cfs 0.014 af
Primary=0.20 cfs 0.014 af

Summary for Subcatchment EX-1: EX-1

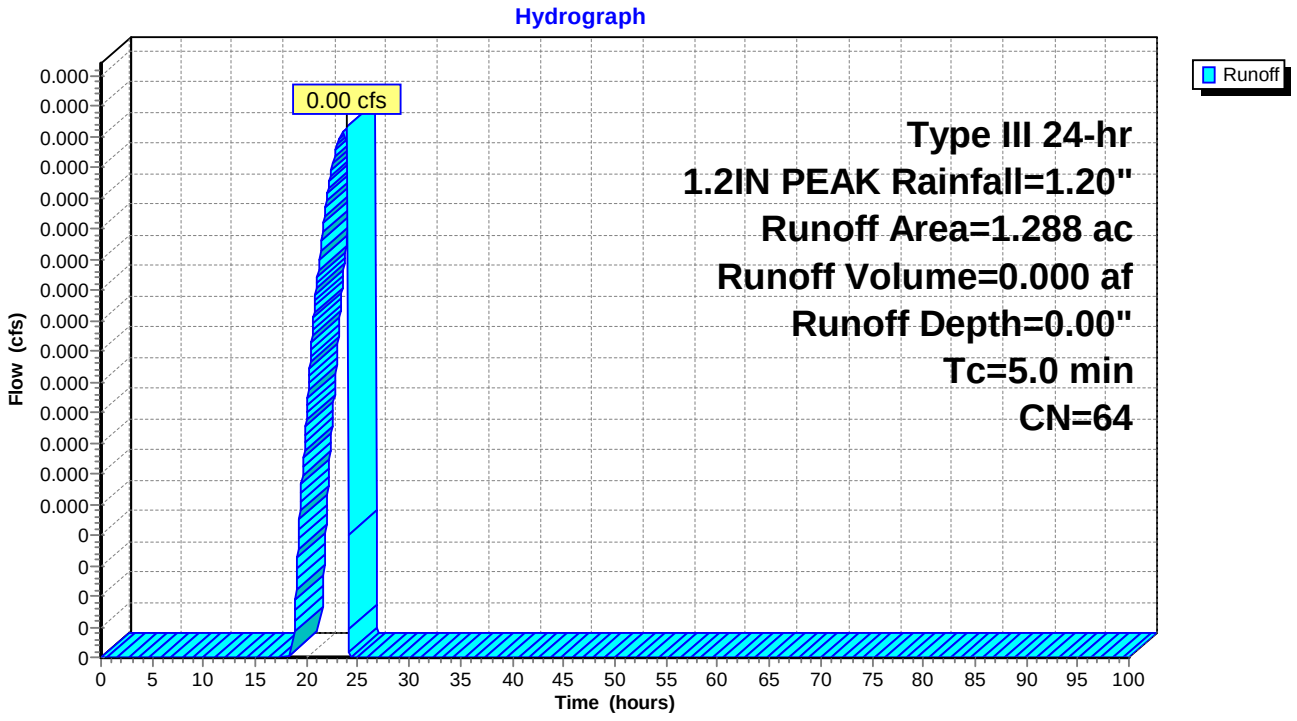
Runoff = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.085	98	Impervious
*	0.025	98	Impervious
	0.001	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.233	43	Woods/grass comb., Fair, HSG A
	0.944	65	Woods/grass comb., Fair, HSG B
	1.288	64	Weighted Average
	1.178		91.46% Pervious Area
	0.110		8.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-1: EX-1



Summary for Subcatchment EX-2: EX-2 TO DRY WELL 1

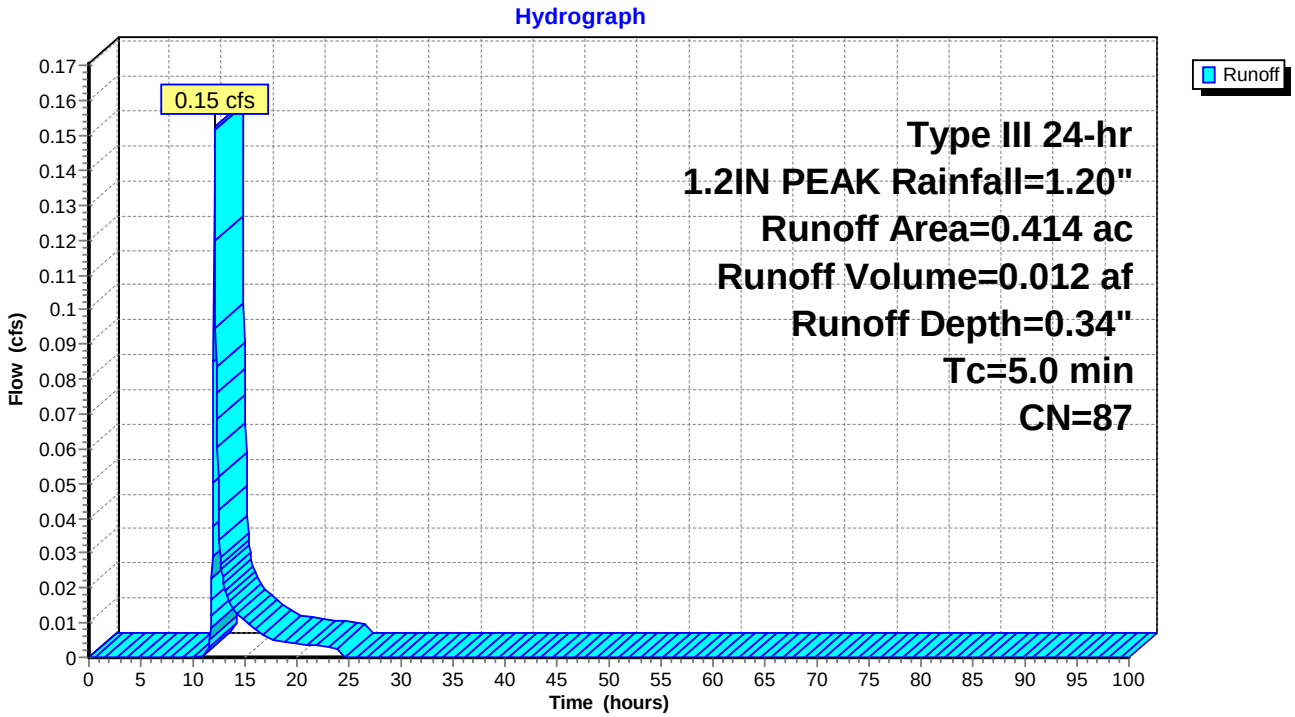
Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 0.34"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.332	98	Impervious
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.082	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.414	87	Weighted Average
	0.082		19.81% Pervious Area
	0.332		80.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-2: EX-2 TO DRY WELL 1



Summary for Subcatchment EX-3: EX-3 TO DRY WELL 2

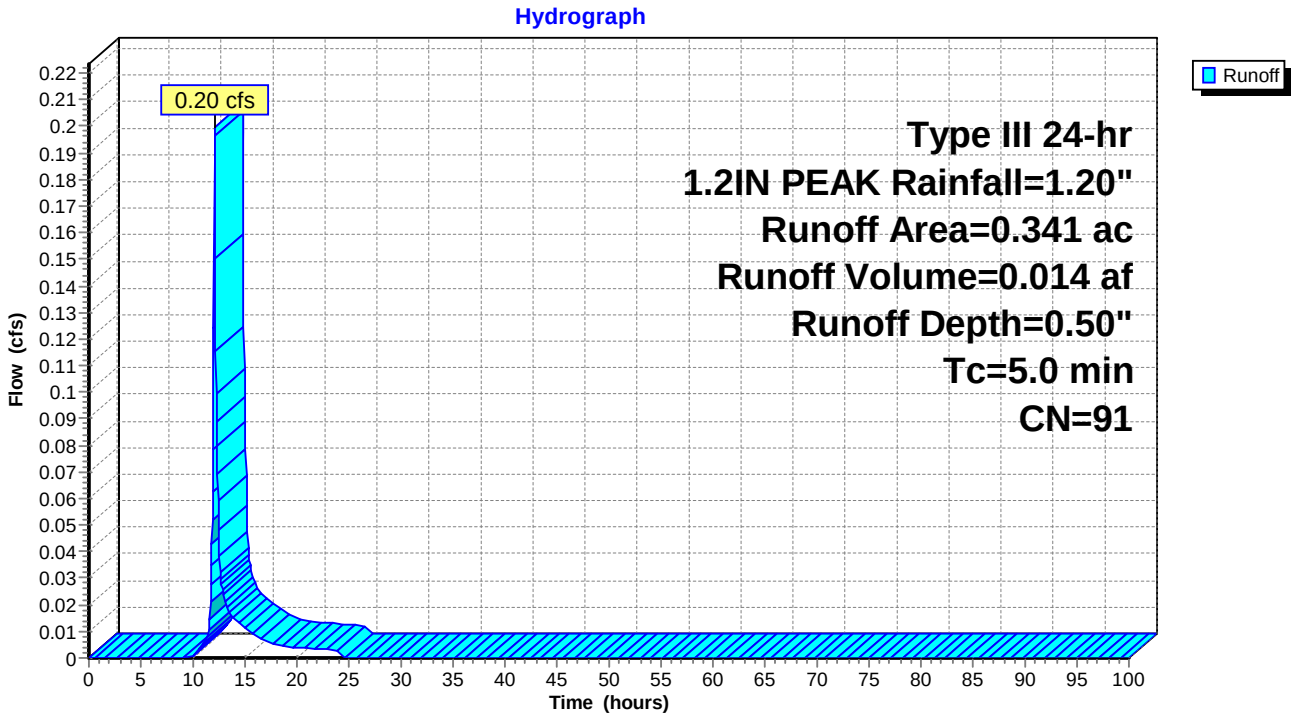
Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 0.50"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.294	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.030	39	>75% Grass cover, Good, HSG A
	0.017	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.341	91	Weighted Average
	0.047		13.78% Pervious Area
	0.294		86.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-3: EX-3 TO DRY WELL 2



Summary for Subcatchment EX-OFF1: EX-OFF1

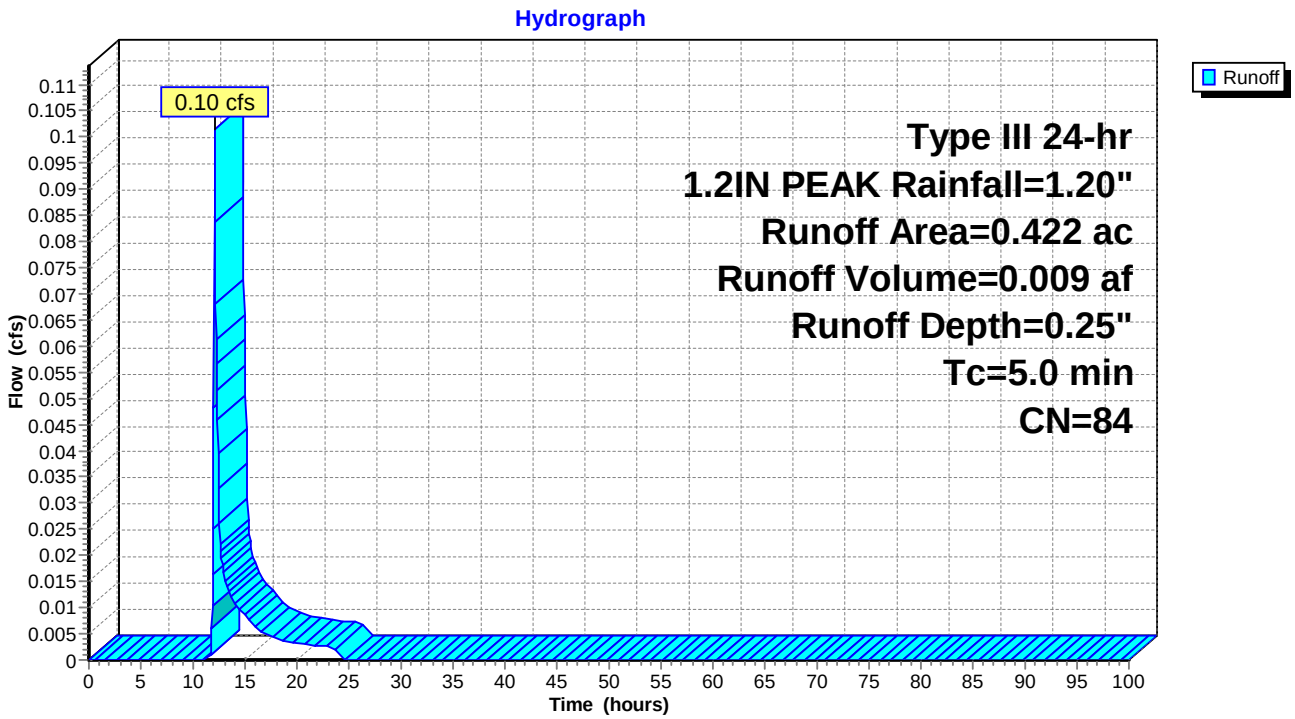
Runoff = 0.10 cfs @ 12.10 hrs, Volume= 0.009 af, Depth= 0.25"
Routed to Pond EX-DEPR : Ex. Localized Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment EX-OFF1: EX-OFF1



Summary for Pond EX-DEPR: Ex. Localized Depression

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 0.06" for 1.2IN PEAK event
Inflow = 0.10 cfs @ 12.10 hrs, Volume= 0.009 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 SP-1 : SP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 251.26' @ 24.35 hrs Surf.Area= 0.059 ac Storage= 0.009 af

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

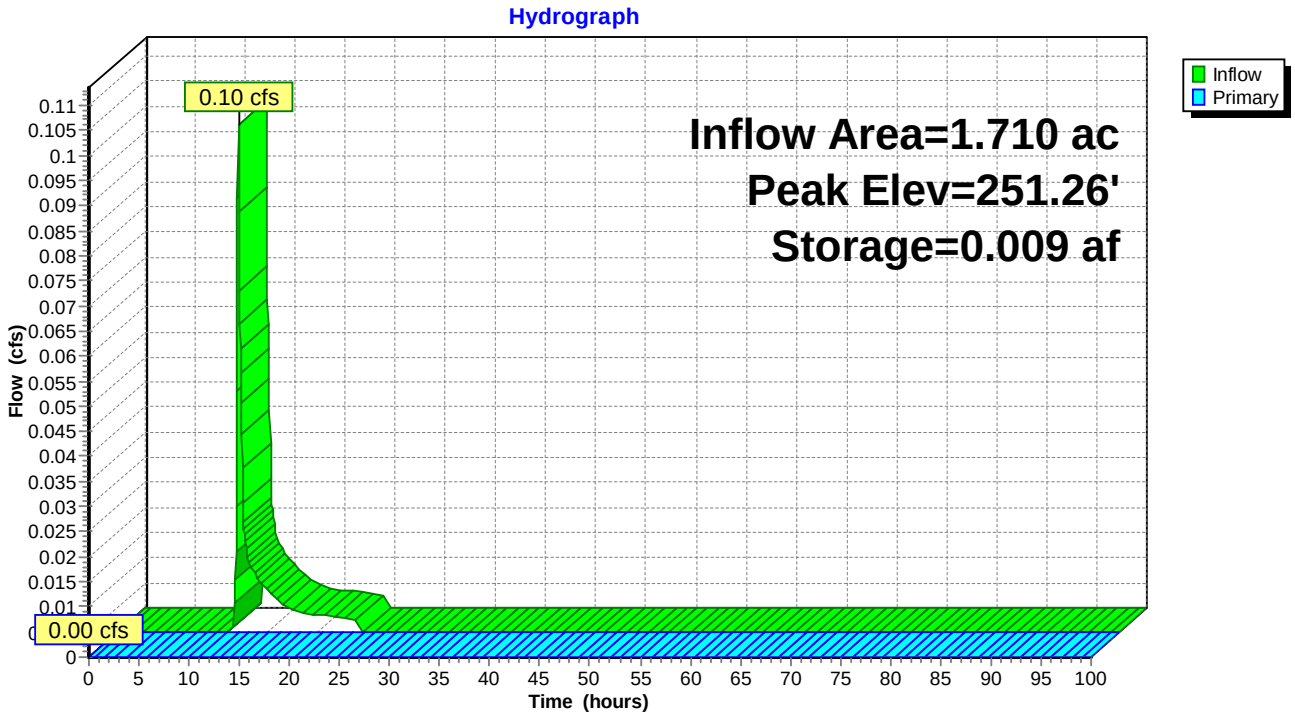
Volume	Invert	Avail.Storage	Storage Description
#1	251.00'	0.415 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
251.00	0.010	0.000	0.000
252.00	0.200	0.105	0.105
253.00	0.420	0.310	0.415

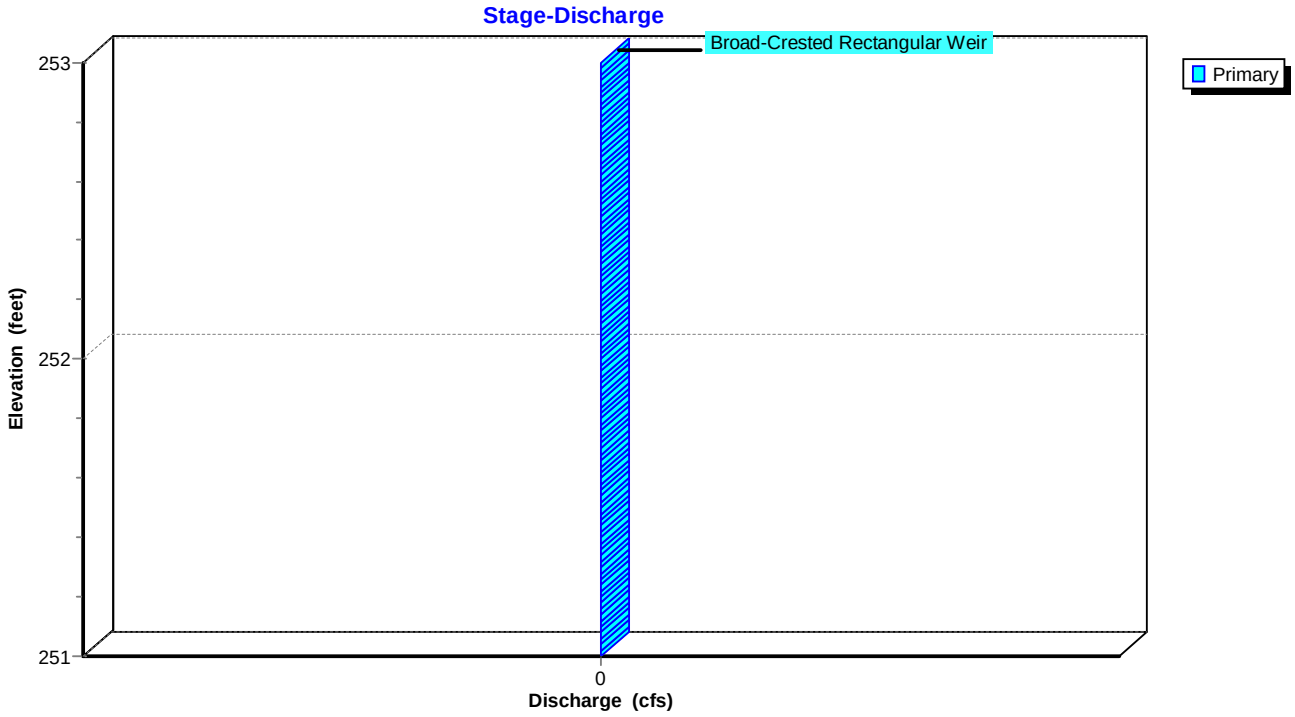
Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=251.00' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

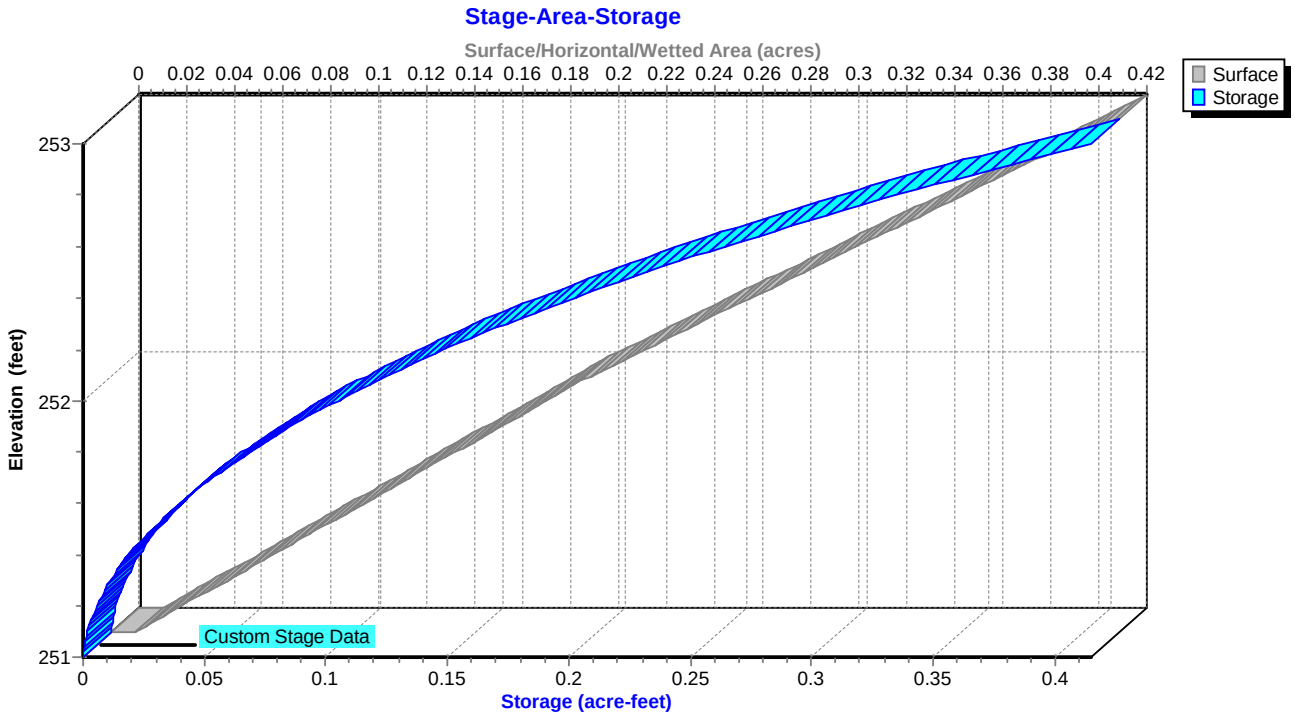
Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression



Pond EX-DEPR: Ex. Localized Depression

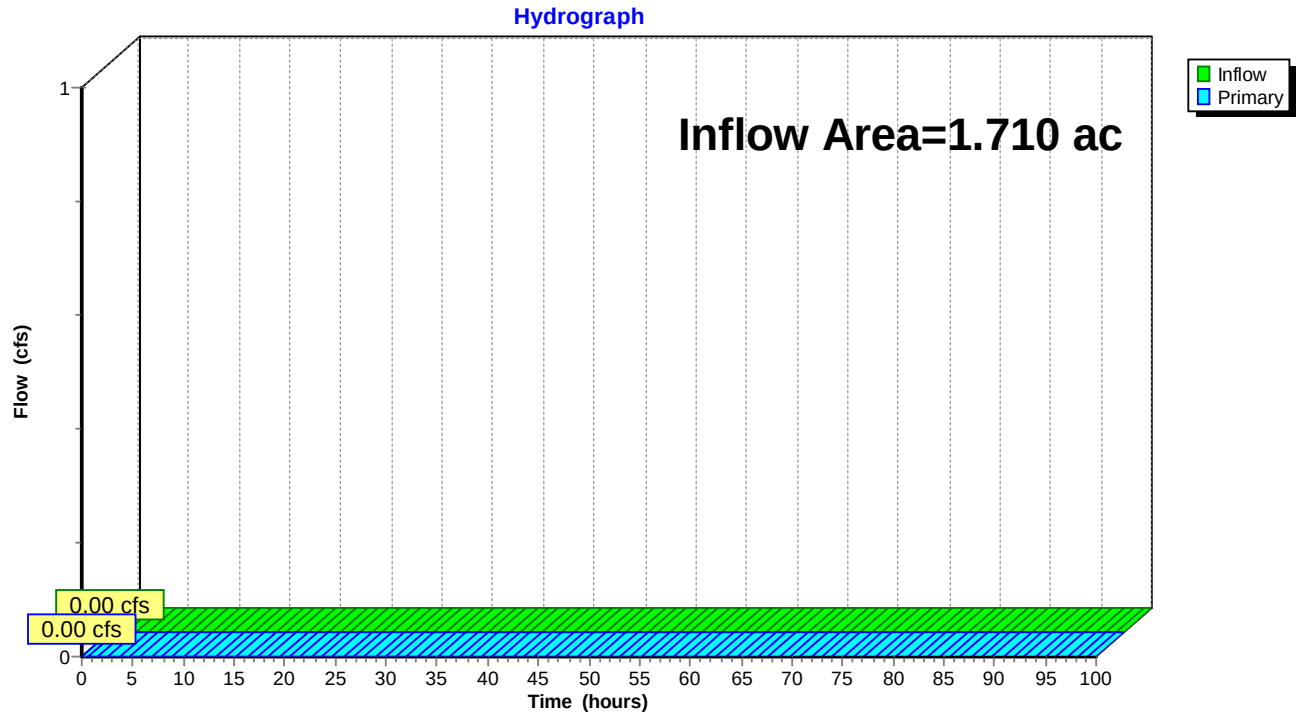


Summary for Link SP-1: SP-1

Inflow Area = 1.710 ac, 22.11% Impervious, Inflow Depth = 0.00" for 1.2IN PEAK 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 SP-1: SP-1

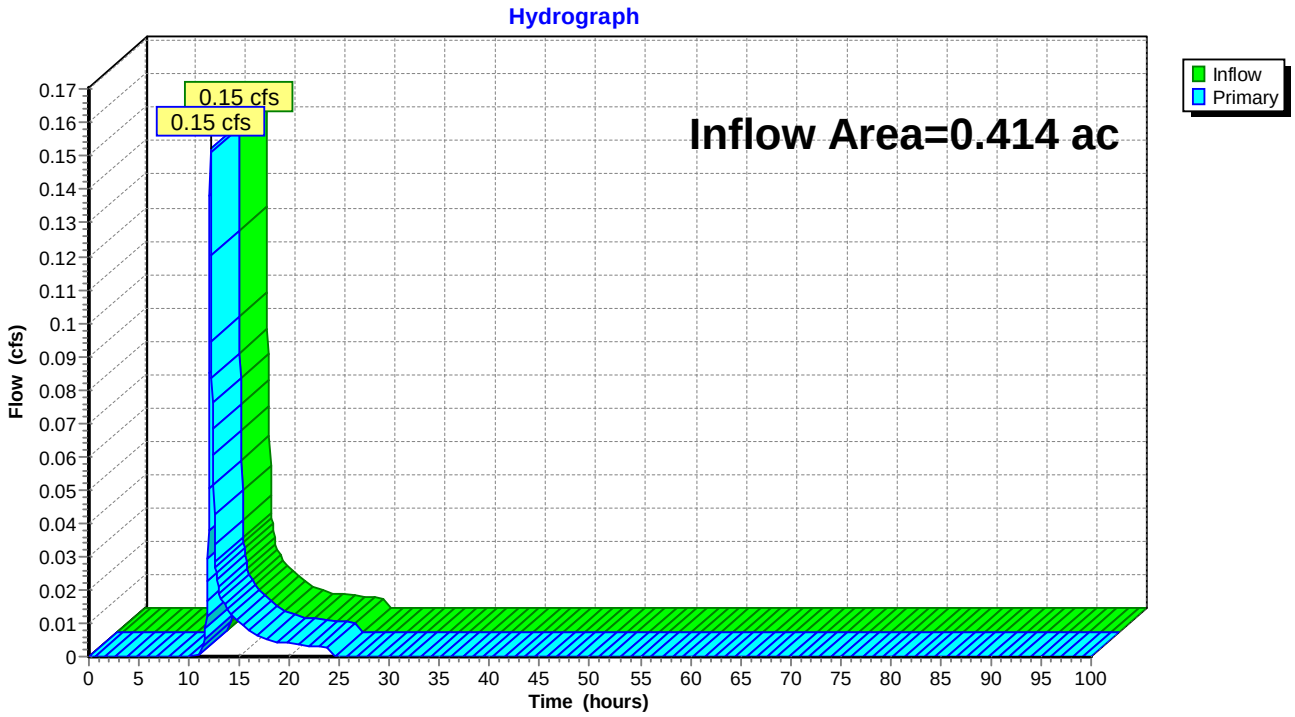


Summary for Link SP-2: SP-2

Inflow Area = 0.414 ac, 80.19% Impervious, Inflow Depth = 0.34" for 1.2IN PEAK event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

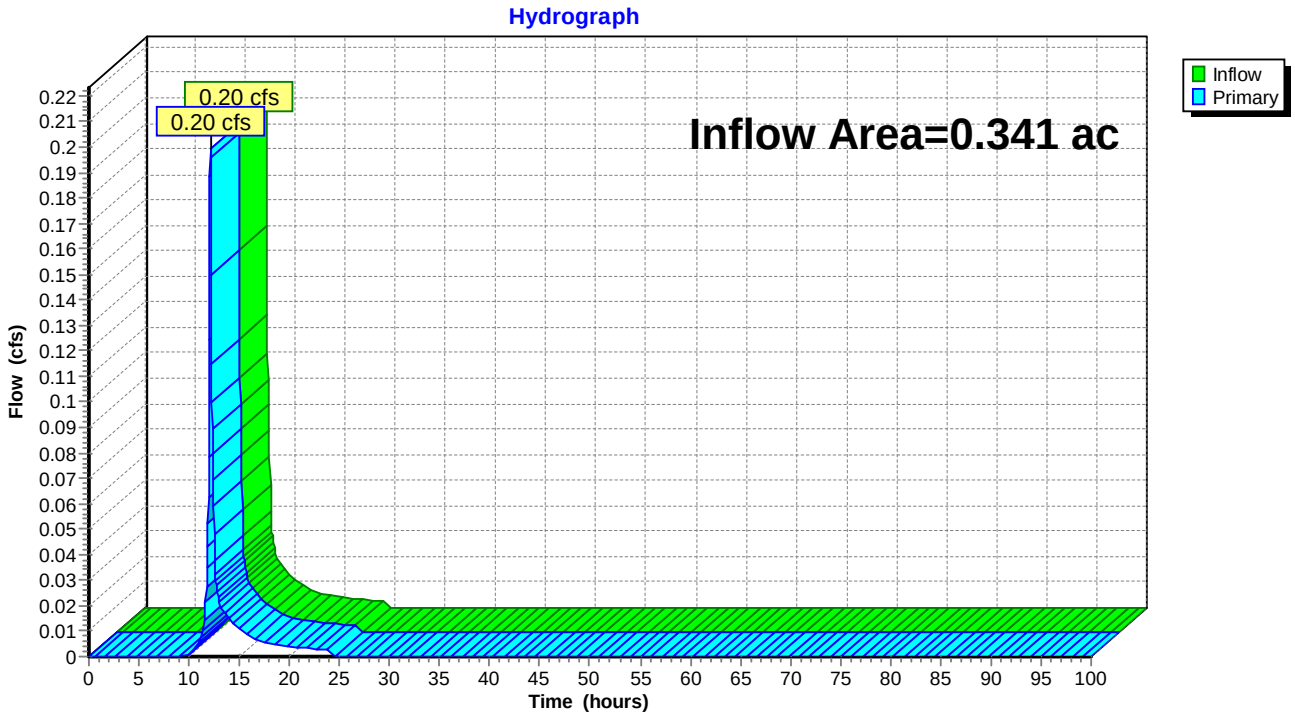


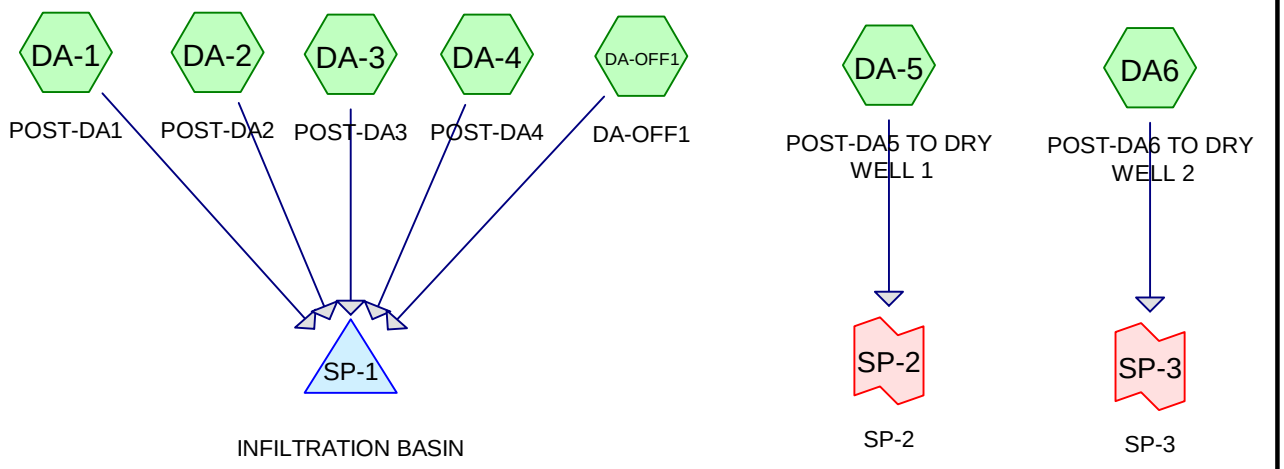
Summary for Link SP-3: SP-3

Inflow Area = 0.341 ac, 86.22% Impervious, Inflow Depth = 0.50" for 1.2IN PEAK event
Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.014 af
Primary = 0.20 cfs @ 12.08 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 SP-3: SP-3





Subcat Reach Pond Link

Routing Diagram for RMO - COVENTRY - PROPOSED CONDITIONS - SURFACE BASIN-GH

Prepared by Kimley-Horn & Associates, Printed 9/20/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.107	39	>75% Grass cover, Good, HSG A (DA-2, DA-5, DA6)
0.283	61	>75% Grass cover, Good, HSG B (DA-2, DA-3, DA-OFF1, DA6)
1.621	98	Impervious (DA-1, DA-2, DA-4, DA-5, DA-OFF1, DA6)
0.043	43	Woods/grass comb., Fair, HSG A (DA-3, DA-5, DA-OFF1)
0.405	65	Woods/grass comb., Fair, HSG B (DA-3, DA-OFF1)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.150	HSG A	DA-2, DA-3, DA-5, DA-OFF1, DA6
0.688	HSG B	DA-2, DA-3, DA-OFF1, DA6
0.000	HSG C	
0.000	HSG D	
1.621	Other	DA-1, DA-2, DA-4, DA-5, DA-OFF1, DA6

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.107	0.283	0.000	0.000	0.000	0.390	>75% Grass cover, Good	DA-2, DA-3, DA-5, DA-OFF1, DA6
0.000	0.000	0.000	0.000	1.621	1.621	Impervious	DA-1, DA-2, DA-4, DA-5, DA-OFF1, DA6
0.043	0.405	0.000	0.000	0.000	0.448	Woods/grass comb., Fair	DA-3, DA-5, DA-OFF1

Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 DA-1: POST-DA1 Runoff Area=0.129 ac 100.00% Impervious Runoff Depth=0.99"
Tc=5.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment DA-2: POST-DA2 Runoff Area=0.087 ac 5.75% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=49 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: POST-DA3 Runoff Area=0.499 ac 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=64 Runoff=0.00 cfs 0.000 af

Subcatchment DA-4: POST-DA4 Runoff Area=0.575 ac 100.00% Impervious Runoff Depth=0.99"
Tc=5.0 min CN=98 Runoff=0.63 cfs 0.047 af

Subcatchment DA-5: POST-DA5 TO DRY WELL Runoff Area=0.394 ac 88.07% Impervious Runoff Depth=0.50"
Tc=5.0 min CN=91 Runoff=0.23 cfs 0.017 af

Subcatchment DA-OFF1: DA-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=0.25"
Tc=5.0 min CN=84 Runoff=0.10 cfs 0.009 af

Subcatchment DA6: POST-DA6 TO DRY WELL 2 Runoff Area=0.353 ac 84.14% Impervious Runoff Depth=0.46"
Tc=5.0 min CN=90 Runoff=0.19 cfs 0.013 af

Pond SP-1: INFILTRATION BASIN Peak Elev=247.90' Storage=1,247 cf Inflow=0.87 cfs 0.067 af
Outflow=0.08 cfs 0.067 af

Link SP-2: SP-2 Inflow=0.23 cfs 0.017 af
Primary=0.23 cfs 0.017 af

Link SP-3: SP-3 Inflow=0.19 cfs 0.013 af
Primary=0.19 cfs 0.013 af

Summary for Subcatchment DA-1: POST-DA1

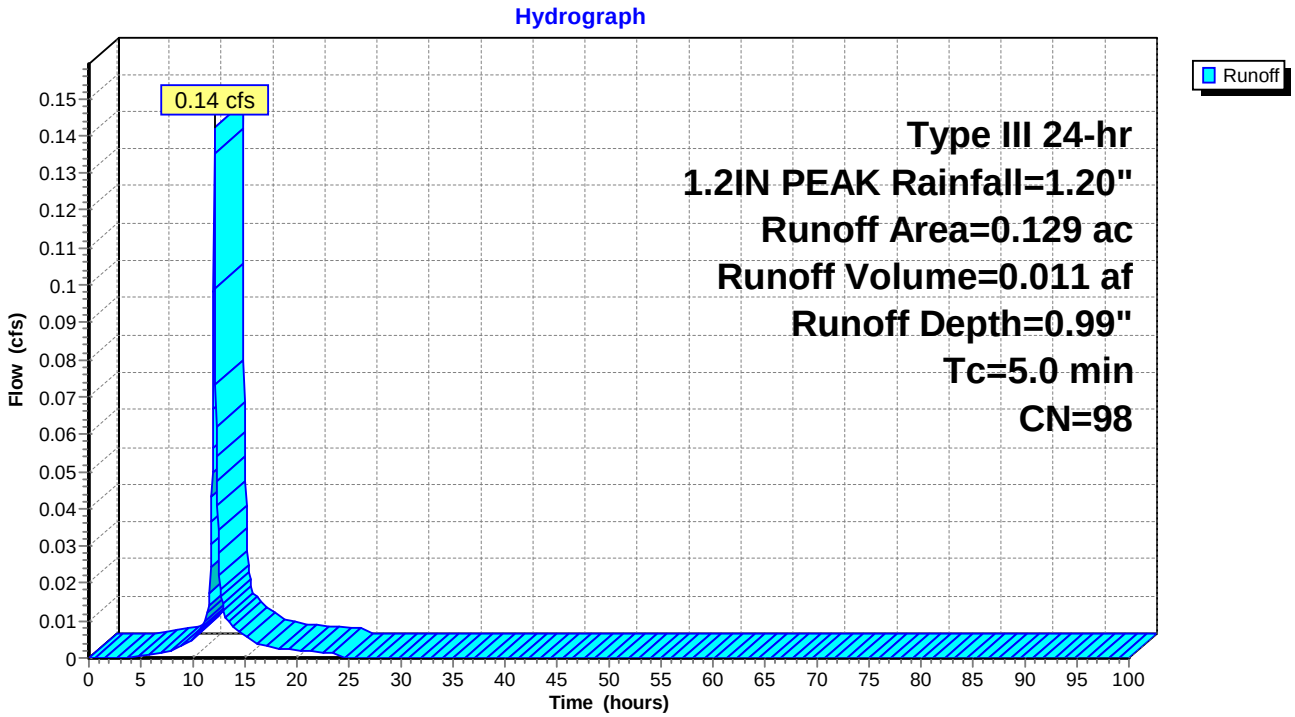
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 0.99"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.105	98	Impervious
*	0.024	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.129	98	Weighted Average
	0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-1: POST-DA1



Summary for Subcatchment DA-2: POST-DA2

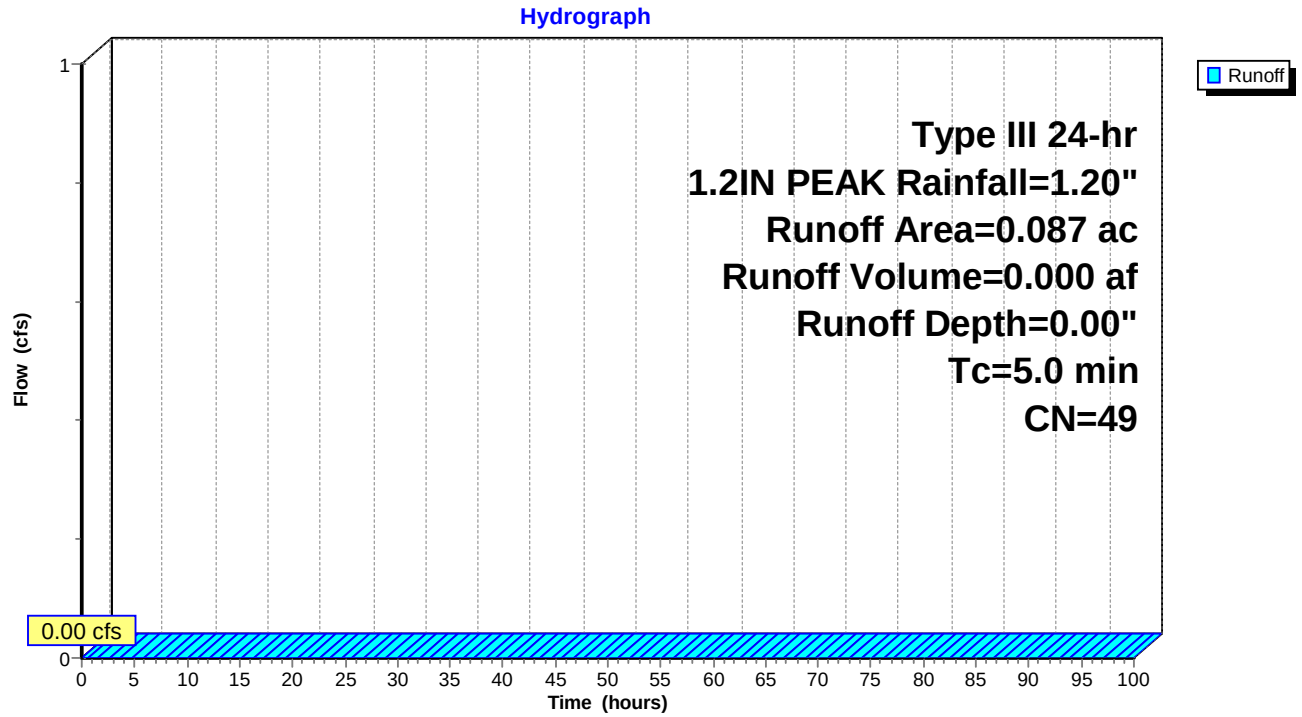
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.005	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.056	39	>75% Grass cover, Good, HSG A
	0.026	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.087	49	Weighted Average
	0.082		94.25% Pervious Area
	0.005		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-2: POST-DA2



Summary for Subcatchment DA-3: POST-DA3

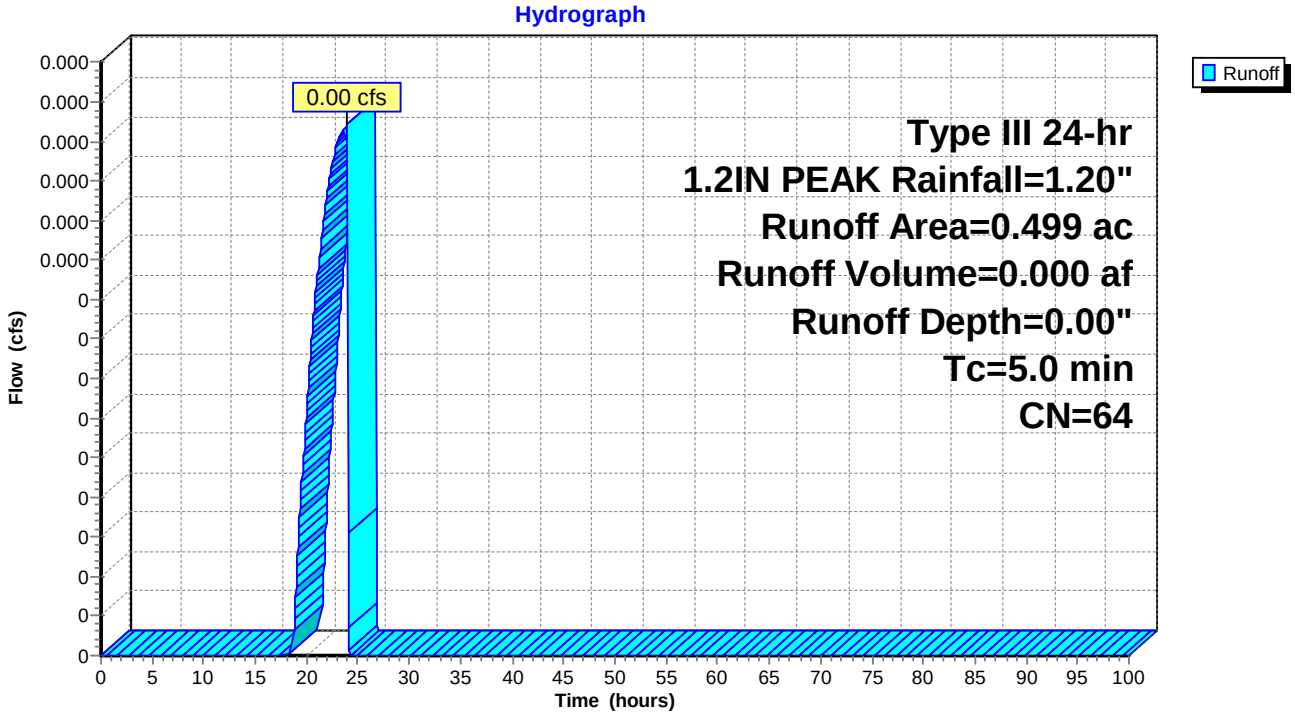
Runoff = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.123	61	>75% Grass cover, Good, HSG B
	0.004	43	Woods/grass comb., Fair, HSG A
	0.372	65	Woods/grass comb., Fair, HSG B
	0.499	64	Weighted Average
	0.499		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-3: POST-DA3



Summary for Subcatchment DA-4: POST-DA4

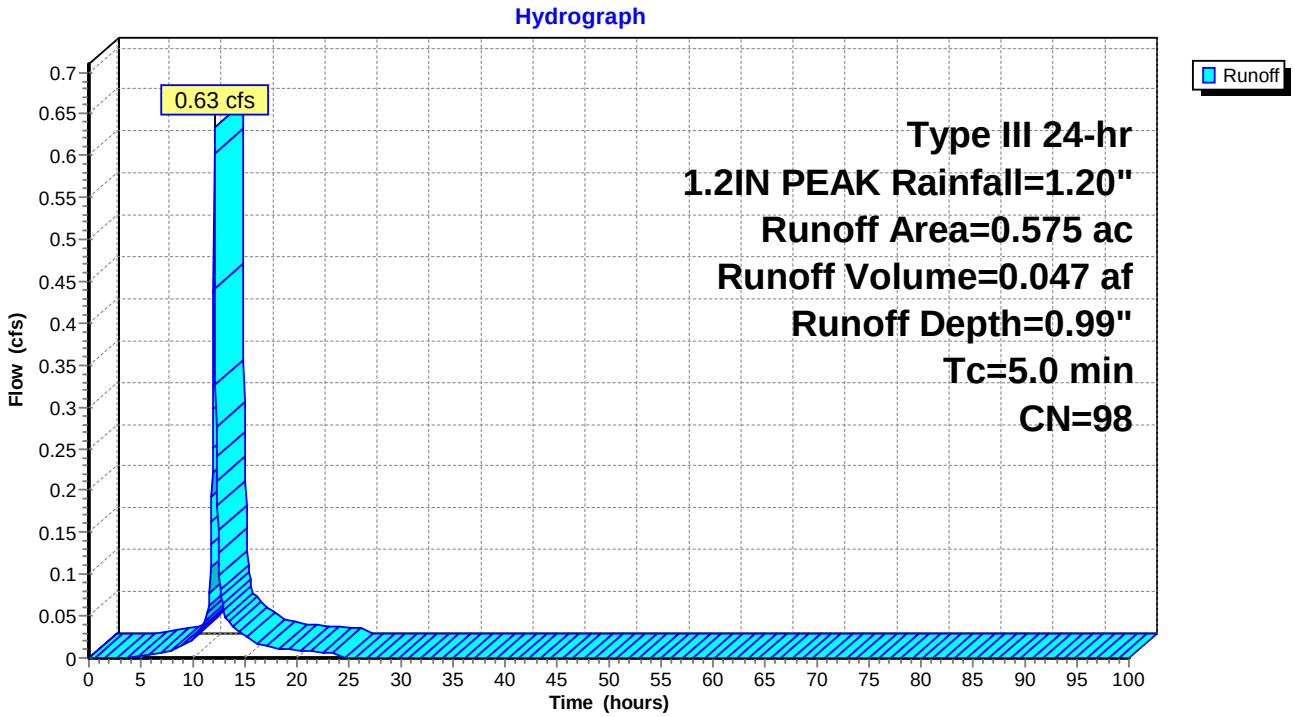
Runoff = 0.63 cfs @ 12.07 hrs, Volume= 0.047 af, Depth= 0.99"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.161	98	Impervious
*	0.414	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.575	98	Weighted Average
	0.575		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-4: POST-DA4



Summary for Subcatchment DA-5: POST-DA5 TO DRY WELL 1

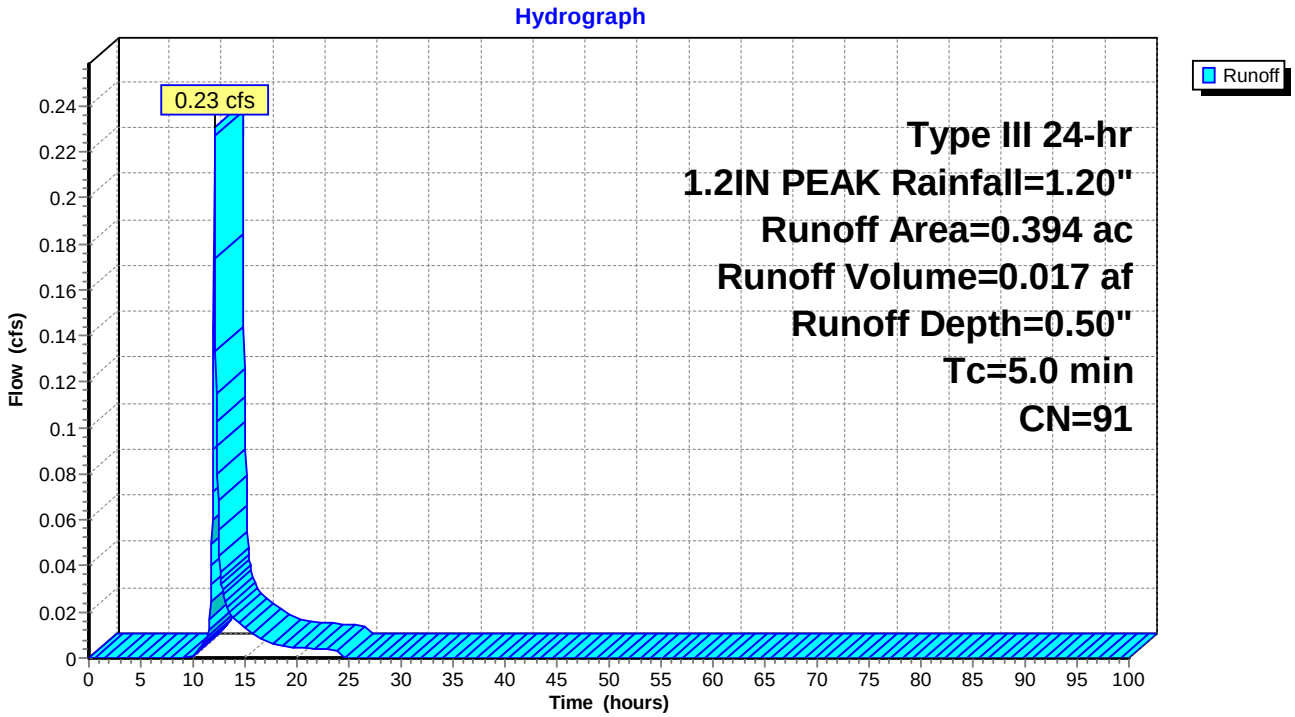
Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 0.50"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.347	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.017	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.030	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.394	91	Weighted Average
	0.047		11.93% Pervious Area
	0.347		88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-5: POST-DA5 TO DRY WELL 1



Summary for Subcatchment DA-OFF1: DA-OFF1

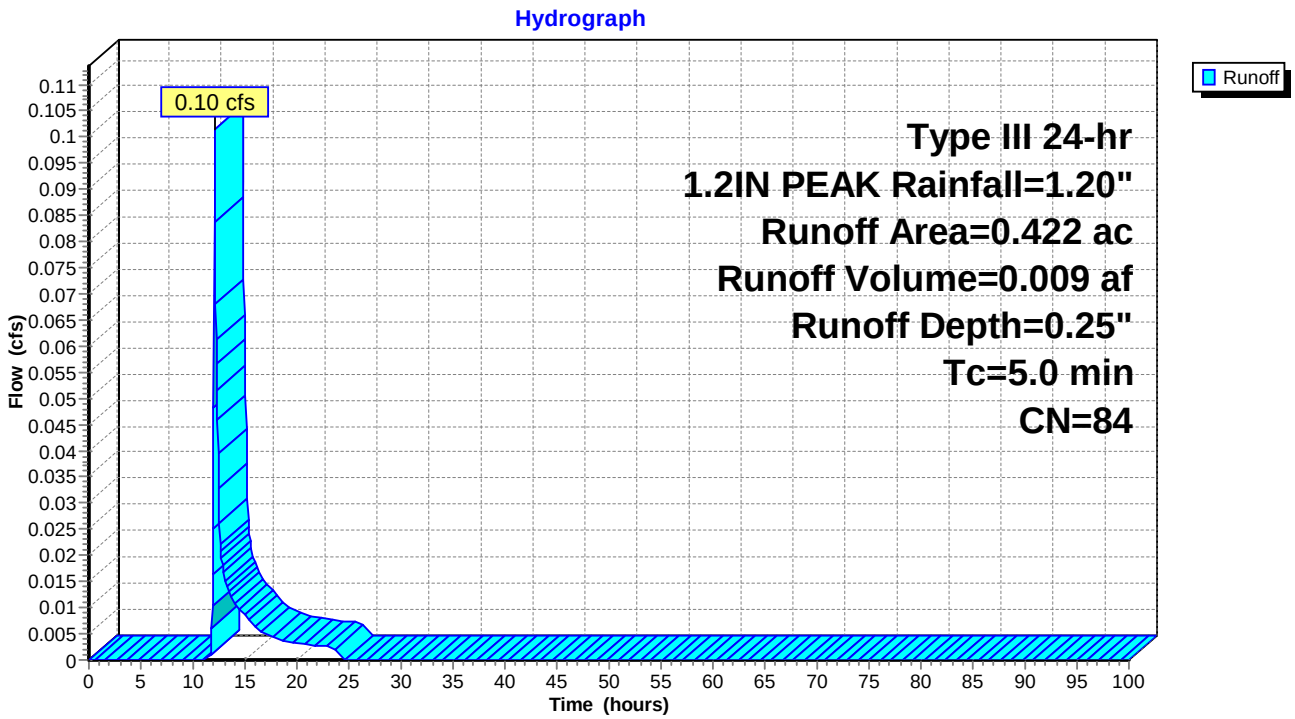
Runoff = 0.10 cfs @ 12.10 hrs, Volume= 0.009 af, Depth= 0.25"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-OFF1: DA-OFF1



Summary for Subcatchment DA6: POST-DA6 TO DRY WELL 2

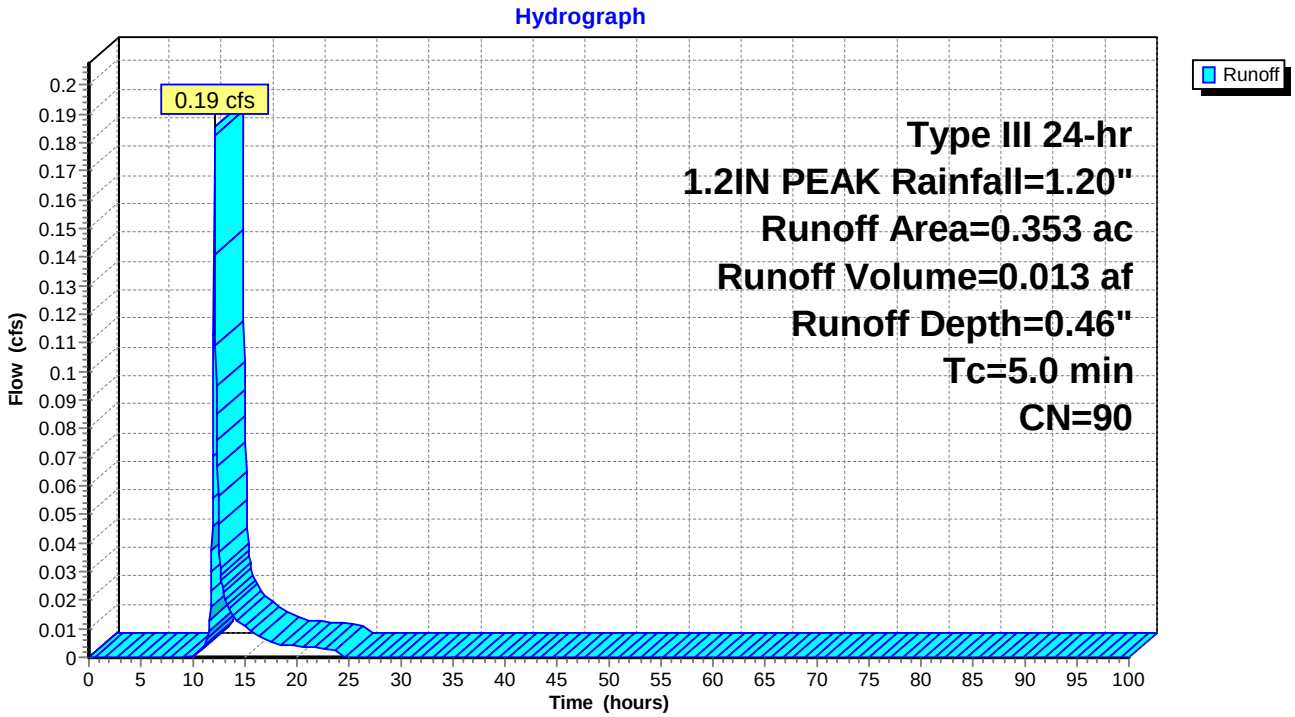
Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 0.46"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1.2IN PEAK Rainfall=1.20"

	Area (ac)	CN	Description
*	0.281	98	Impervious
*	0.016	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.034	39	>75% Grass cover, Good, HSG A
	0.022	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.353	90	Weighted Average
	0.056		15.86% Pervious Area
	0.297		84.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA6: POST-DA6 TO DRY WELL 2



Summary for Pond SP-1: INFILTRATION BASIN

Inflow Area = 1.712 ac, 57.07% Impervious, Inflow Depth = 0.47" for 1.2IN PEAK event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af
Outflow = 0.08 cfs @ 13.03 hrs, Volume= 0.067 af, Atten= 91%, Lag= 57.3 min
Discarded = 0.08 cfs @ 13.03 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 247.90' @ 13.03 hrs Surf.Area= 3,311 sf Storage= 1,247 cf

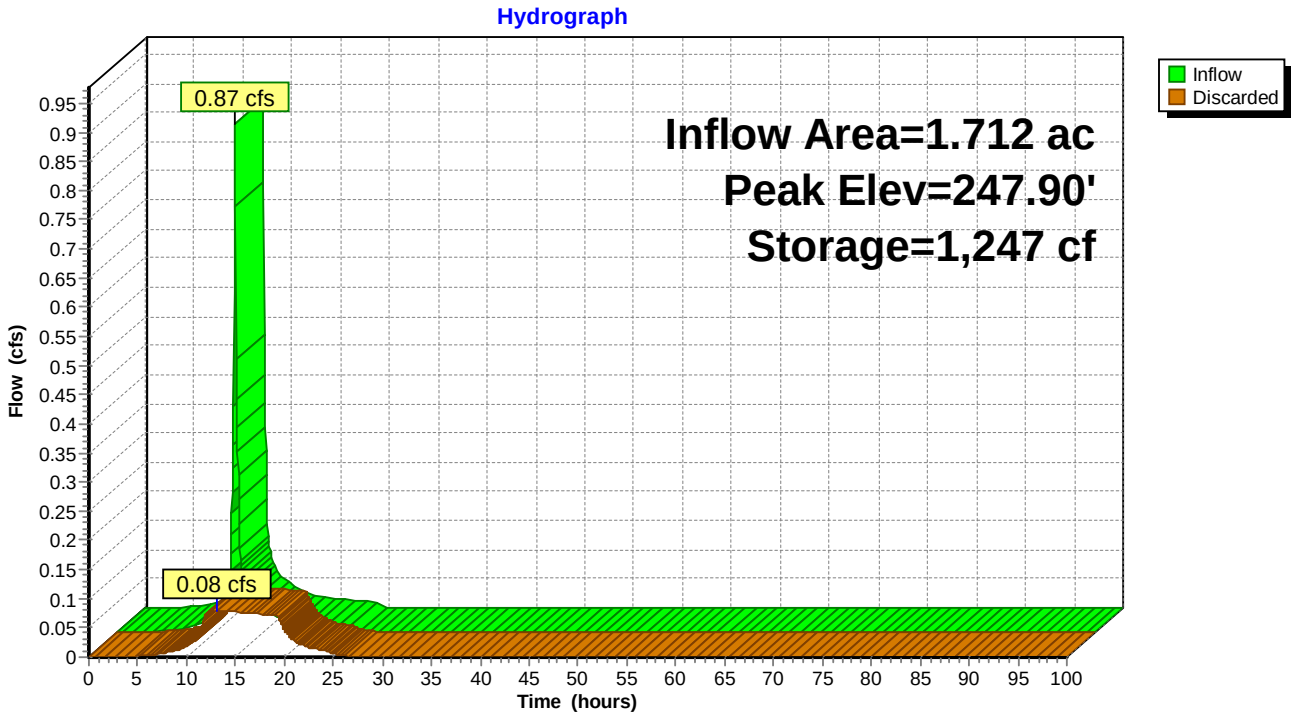
Plug-Flow detention time= 157.7 min calculated for 0.067 af (100% of inflow)
Center-of-Mass det. time= 157.4 min (952.8 - 795.5)

Volume	Invert	Avail.Storage	Storage Description
#1	247.50'	34,493 cf	**17.00'W x 168.00'L x 5.50'H Prismatoid Z=3.0**

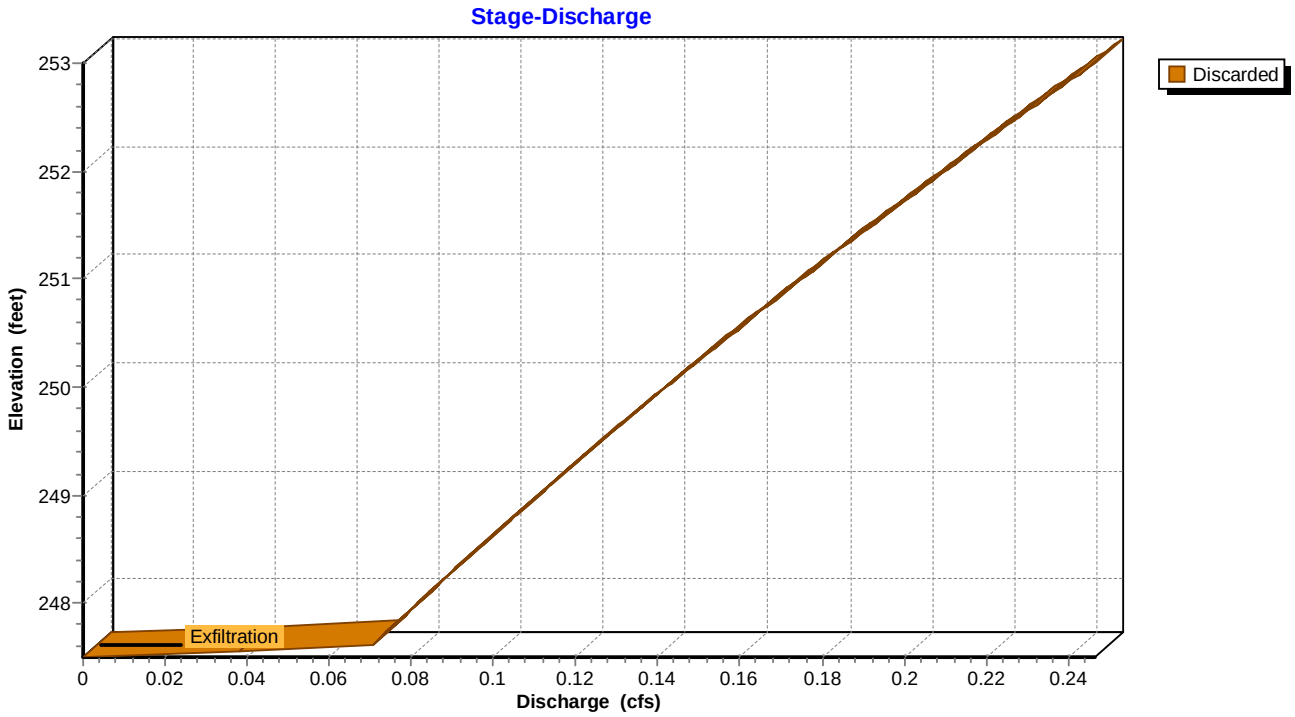
Device	Routing	Invert	Outlet Devices
#1	Discarded	247.50'	**1.020 in/hr Exfiltration over Wetted area** Phase-In= 0.10'

Discarded OutFlow Max=0.08 cfs @ 13.03 hrs HW=247.90' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.08 cfs)

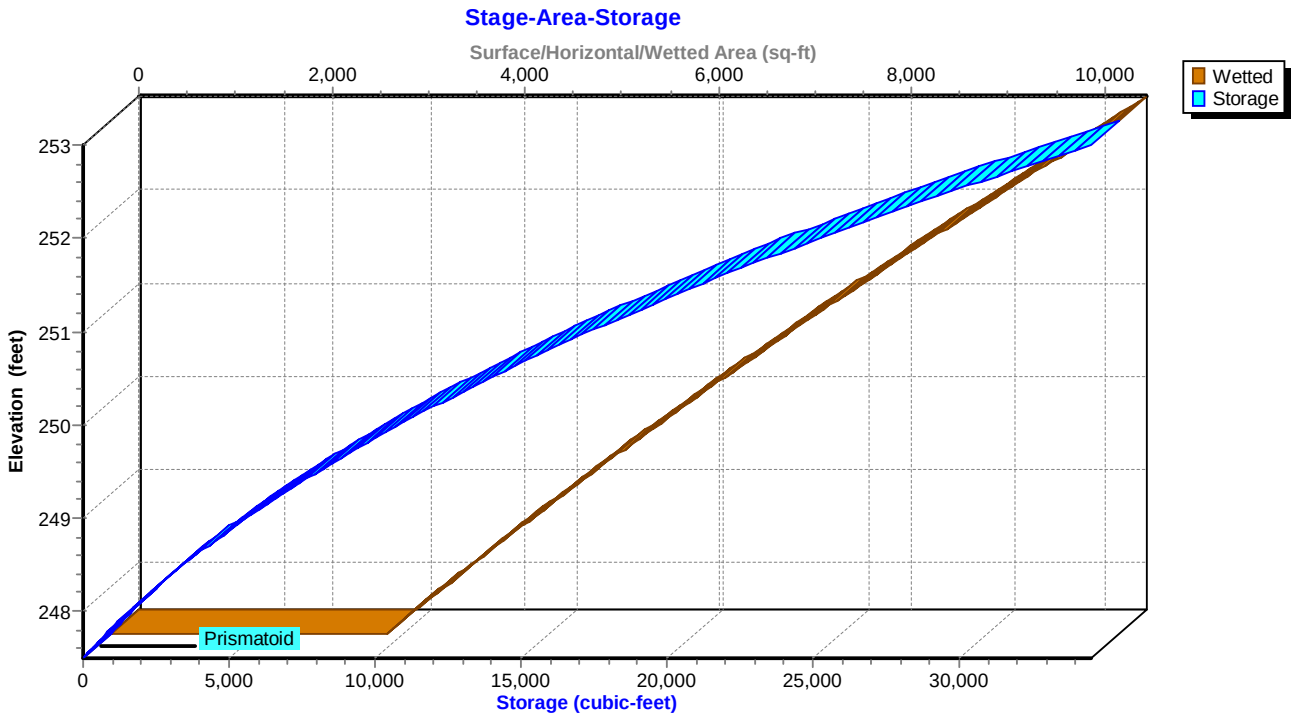
Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN

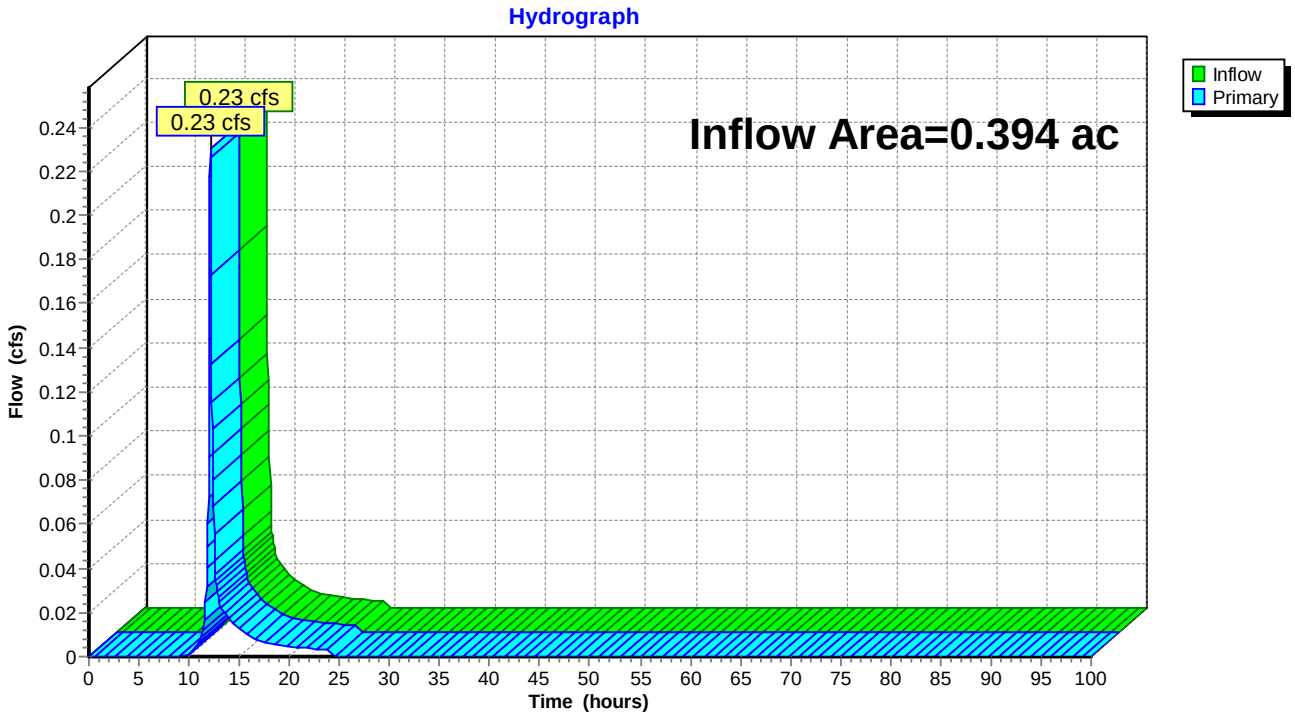


Summary for Link SP-2: SP-2

Inflow Area = 0.394 ac, 88.07% Impervious, Inflow Depth = 0.50" for 1.2IN PEAK event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af
Primary = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

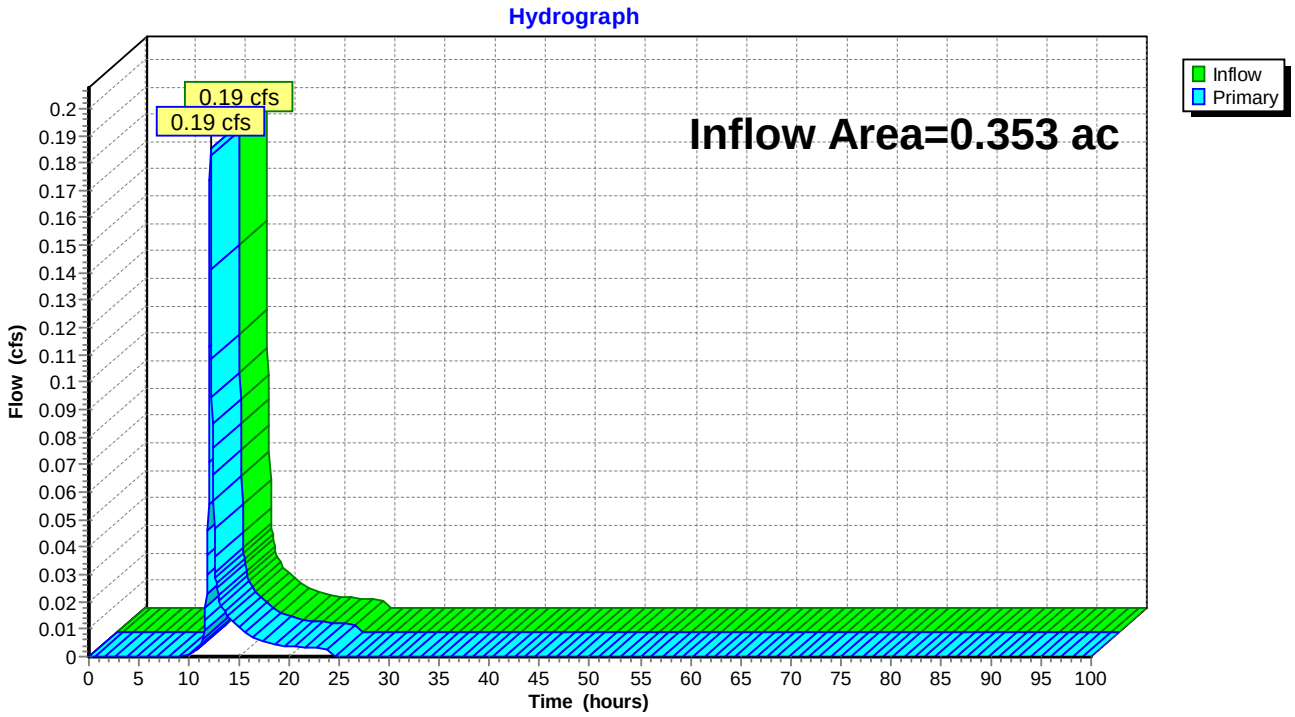


Summary for Link SP-3: SP-3

Inflow Area = 0.353 ac, 84.14% Impervious, Inflow Depth = 0.46" for 1.2IN PEAK event
Inflow = 0.19 cfs @ 12.08 hrs, Volume= 0.013 af
Primary = 0.19 cfs @ 12.08 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 SP-3: SP-3



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 DA-1: POST-DA1 Runoff Area=0.129 ac 100.00% Impervious Runoff Depth=2.47"
Tc=5.0 min CN=98 Runoff=0.34 cfs 0.027 af

Subcatchment DA-2: POST-DA2 Runoff Area=0.087 ac 5.75% Impervious Runoff Depth=0.03"
Tc=5.0 min CN=49 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: POST-DA3 Runoff Area=0.499 ac 0.00% Impervious Runoff Depth=0.34"
Tc=5.0 min CN=64 Runoff=0.12 cfs 0.014 af

Subcatchment DA-4: POST-DA4 Runoff Area=0.575 ac 100.00% Impervious Runoff Depth=2.47"
Tc=5.0 min CN=98 Runoff=1.51 cfs 0.118 af

Subcatchment DA-5: POST-DA5 TO DRY WELL Runoff Area=0.394 ac 88.07% Impervious Runoff Depth=1.79"
Tc=5.0 min CN=91 Runoff=0.83 cfs 0.059 af

Subcatchment DA-OFF1: DA-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=1.27"
Tc=5.0 min CN=84 Runoff=0.63 cfs 0.045 af

Subcatchment DA6: POST-DA6 TO DRY WELL 2 Runoff Area=0.353 ac 84.14% Impervious Runoff Depth=1.71"
Tc=5.0 min CN=90 Runoff=0.70 cfs 0.050 af

Pond SP-1: INFILTRATION BASIN Peak Elev=248.86' Storage=4,951 cf Inflow=2.56 cfs 0.204 af
Outflow=0.11 cfs 0.204 af

Link SP-2: SP-2 Inflow=0.83 cfs 0.059 af
Primary=0.83 cfs 0.059 af

Link SP-3: SP-3 Inflow=0.70 cfs 0.050 af
Primary=0.70 cfs 0.050 af

Summary for Subcatchment DA-1: POST-DA1

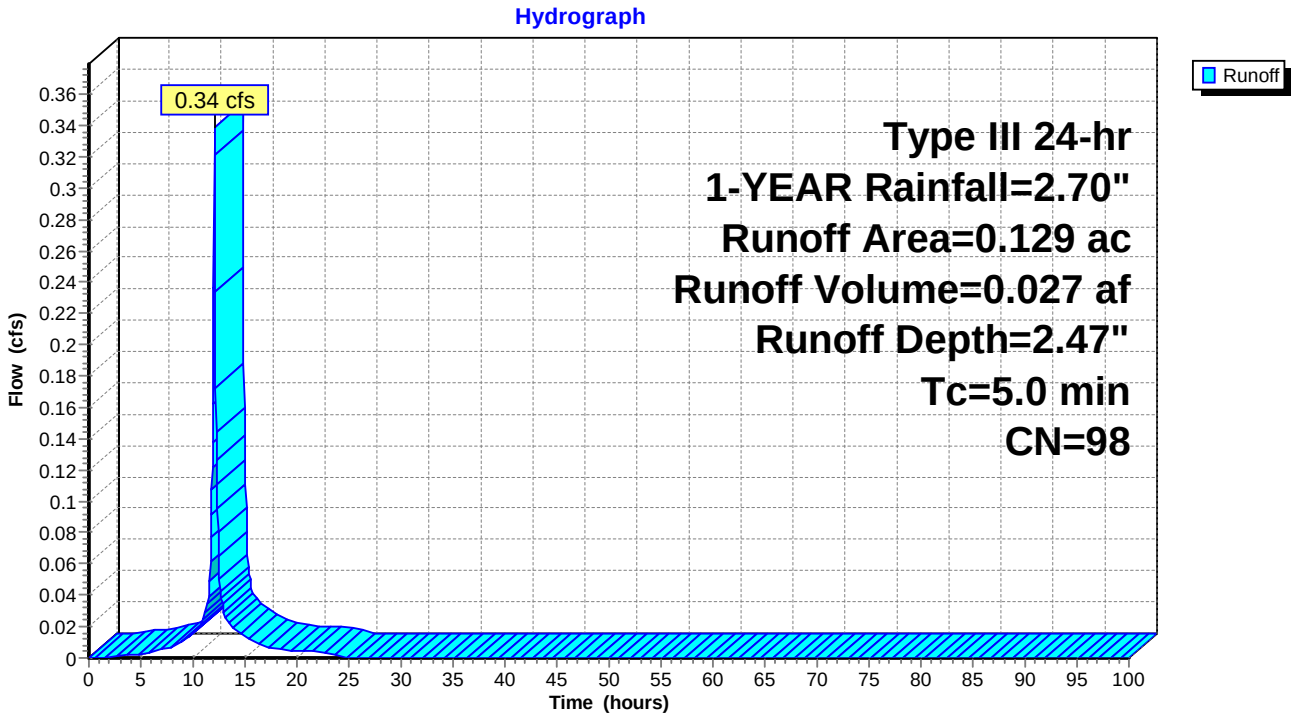
Runoff = 0.34 cfs @ 12.07 hrs, Volume= 0.027 af, Depth= 2.47"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.105	98	Impervious
*	0.024	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.129	98	Weighted Average
	0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-1: POST-DA1



Summary for Subcatchment DA-2: POST-DA2

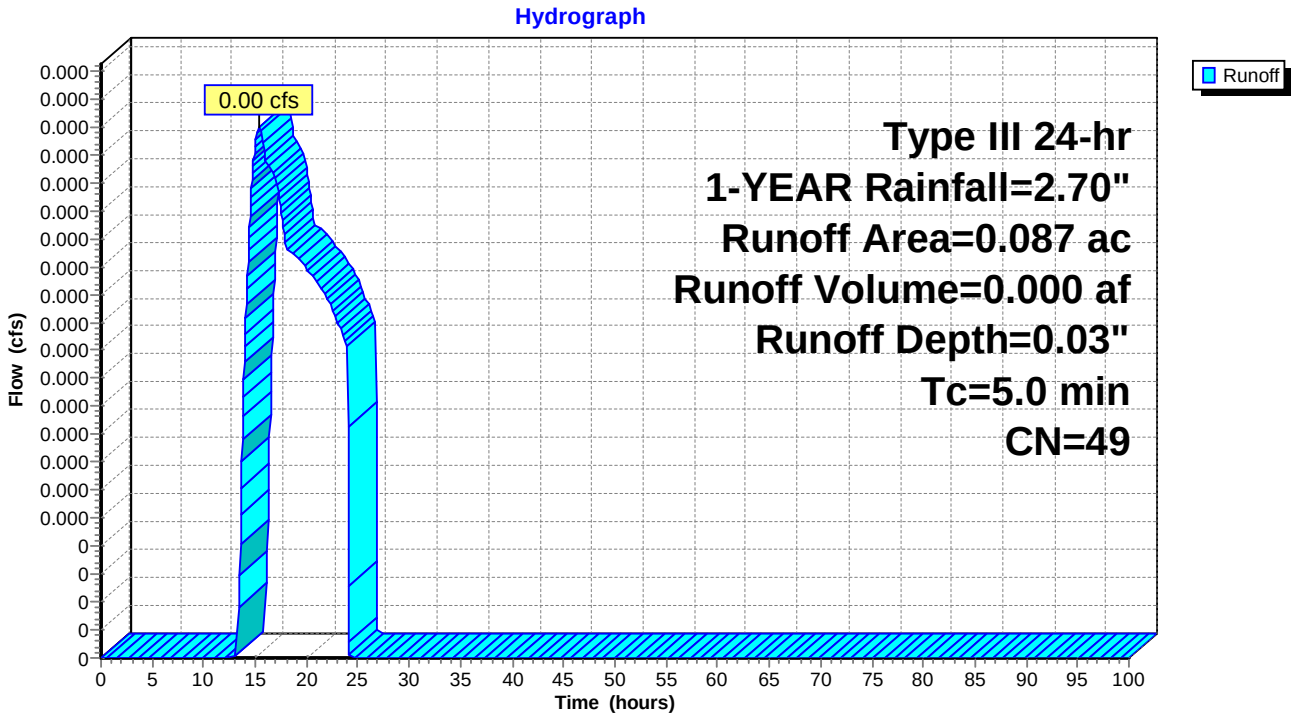
Runoff = 0.00 cfs @ 15.41 hrs, Volume= 0.000 af, Depth= 0.03"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.005	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.056	39	>75% Grass cover, Good, HSG A
	0.026	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.087	49	Weighted Average
	0.082		94.25% Pervious Area
	0.005		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-2: POST-DA2



Summary for Subcatchment DA-3: POST-DA3

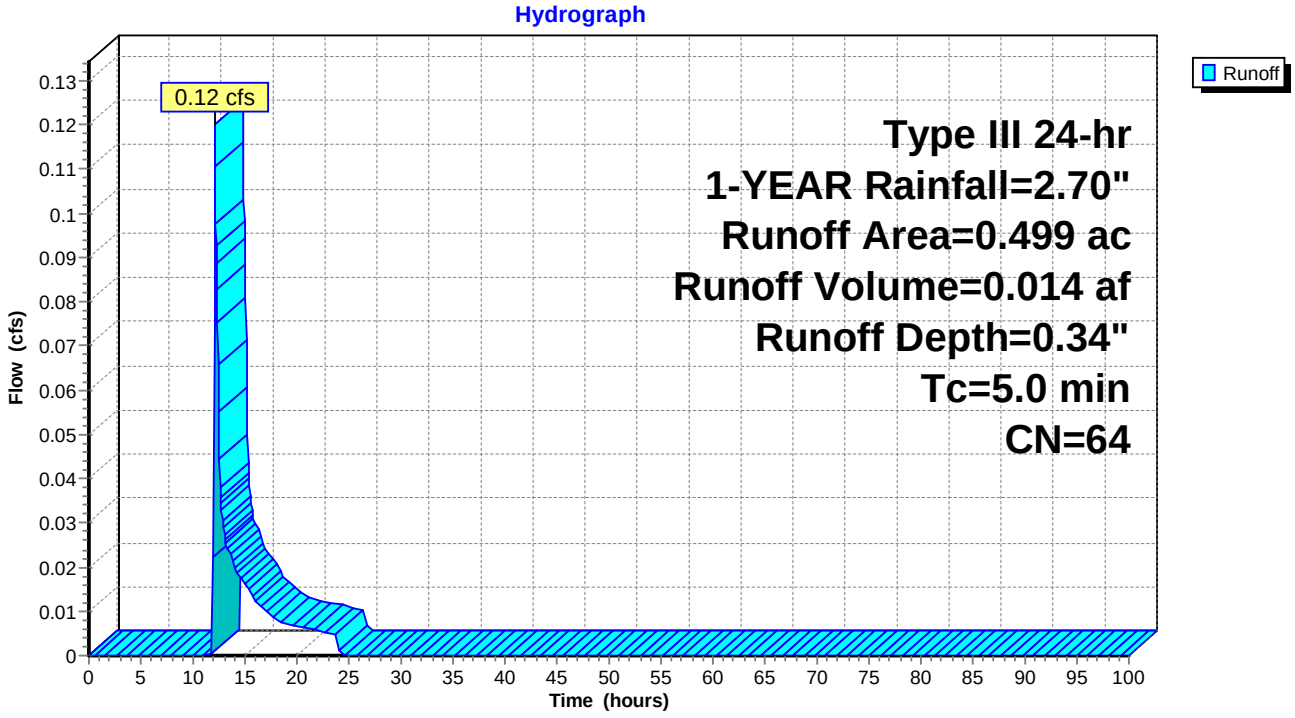
Runoff = 0.12 cfs @ 12.12 hrs, Volume= 0.014 af, Depth= 0.34"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.123	61	>75% Grass cover, Good, HSG B
	0.004	43	Woods/grass comb., Fair, HSG A
	0.372	65	Woods/grass comb., Fair, HSG B
	0.499	64	Weighted Average
	0.499		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-3: POST-DA3



Summary for Subcatchment DA-4: POST-DA4

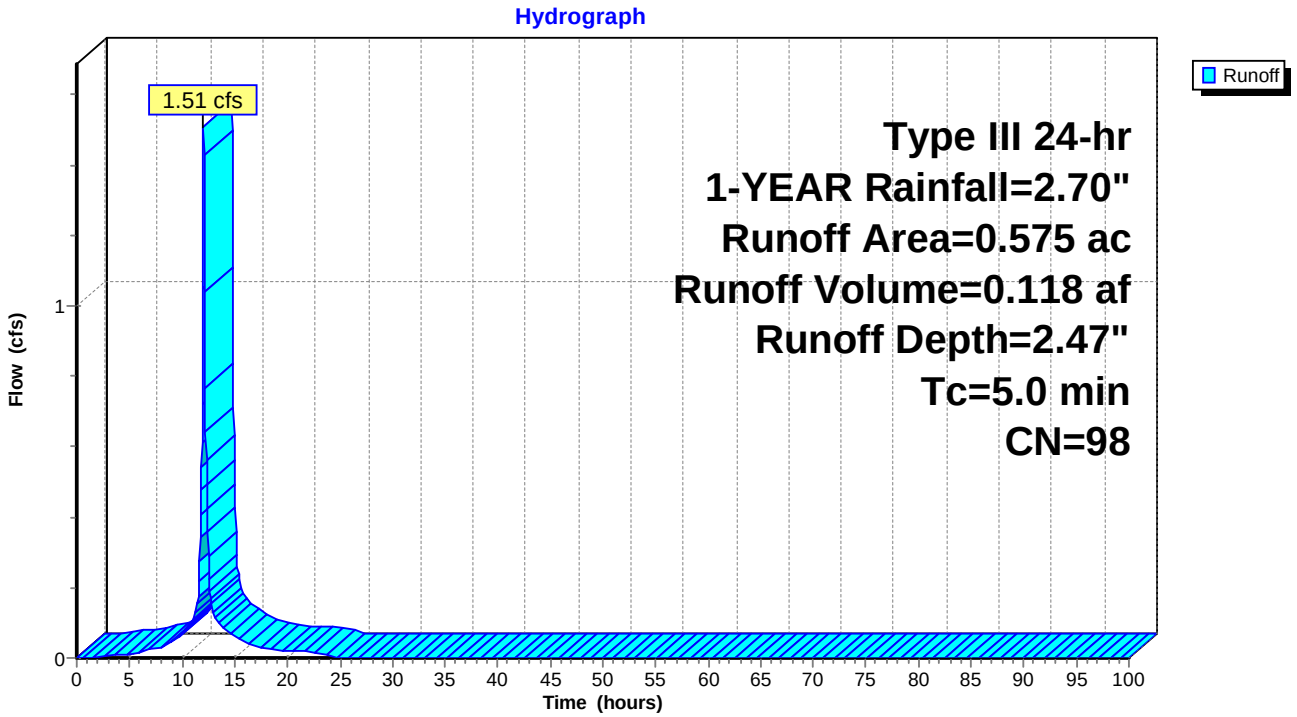
Runoff = 1.51 cfs @ 12.07 hrs, Volume= 0.118 af, Depth= 2.47"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.161	98	Impervious
*	0.414	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.575	98	Weighted Average
	0.575		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-4: POST-DA4



Summary for Subcatchment DA-5: POST-DA5 TO DRY WELL 1

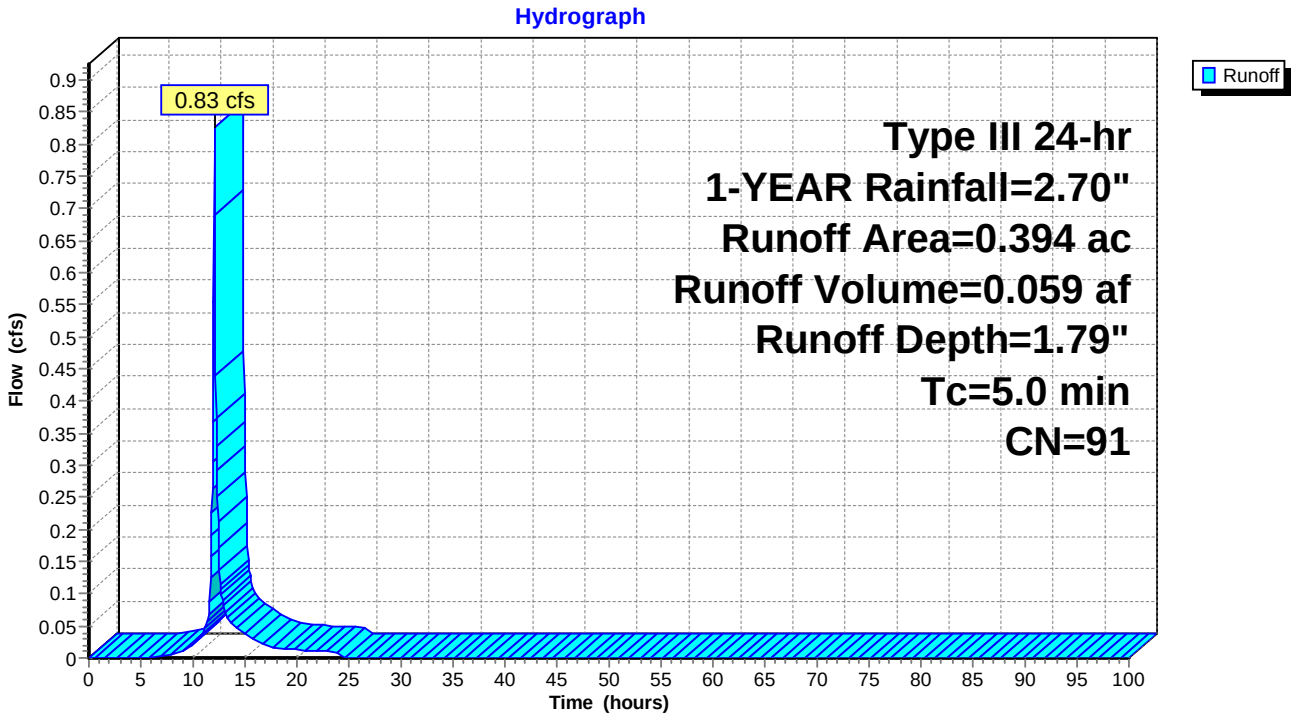
Runoff = 0.83 cfs @ 12.07 hrs, Volume= 0.059 af, Depth= 1.79"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.347	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.017	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.030	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.394	91	Weighted Average
	0.047		11.93% Pervious Area
	0.347		88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-5: POST-DA5 TO DRY WELL 1



Summary for Subcatchment DA-OFF1: DA-OFF1

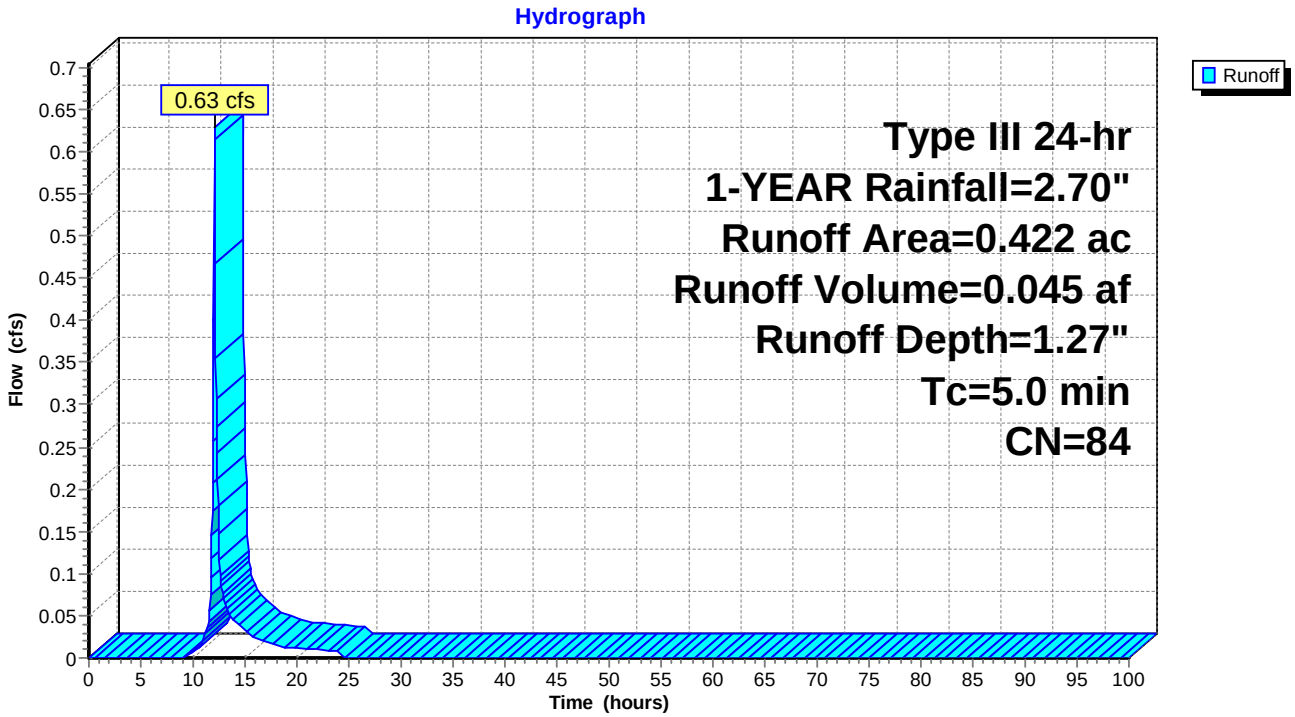
Runoff = 0.63 cfs @ 12.08 hrs, Volume= 0.045 af, Depth= 1.27"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-OFF1: DA-OFF1



Summary for Subcatchment DA6: POST-DA6 TO DRY WELL 2

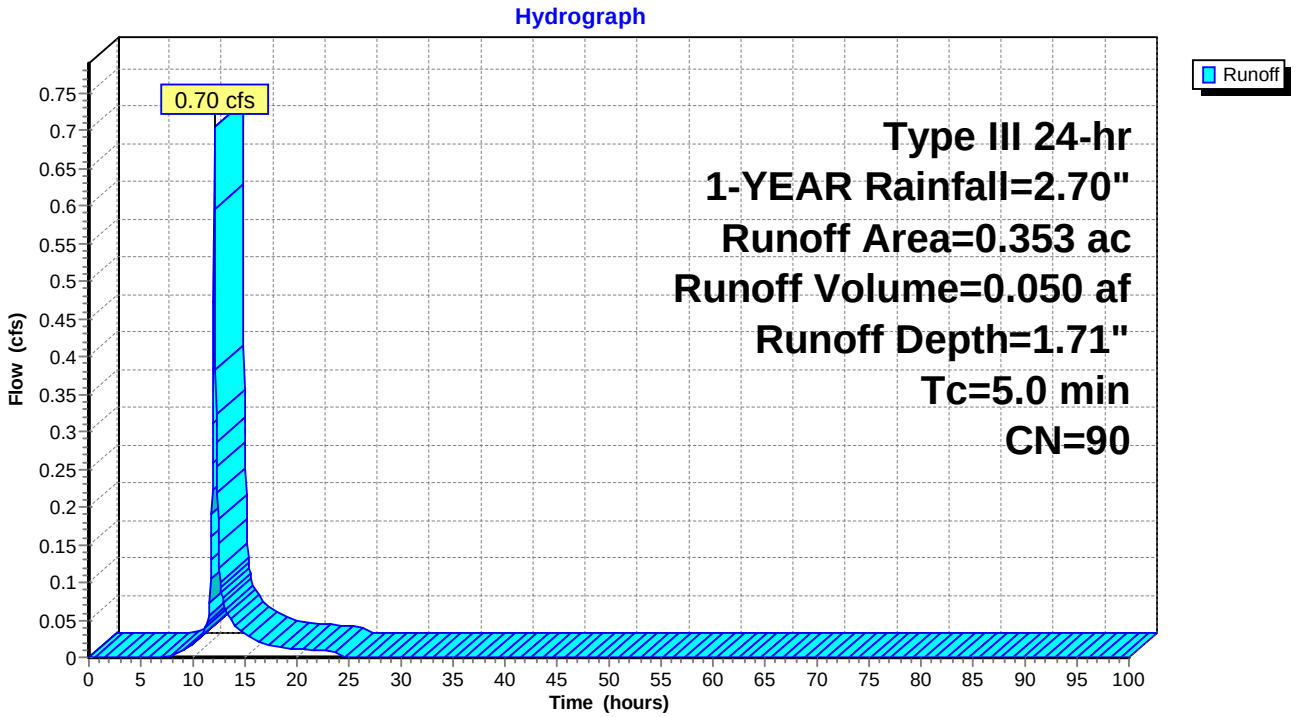
Runoff = 0.70 cfs @ 12.08 hrs, Volume= 0.050 af, Depth= 1.71"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-YEAR Rainfall=2.70"

	Area (ac)	CN	Description
*	0.281	98	Impervious
*	0.016	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.034	39	>75% Grass cover, Good, HSG A
	0.022	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.353	90	Weighted Average
	0.056		15.86% Pervious Area
	0.297		84.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA6: POST-DA6 TO DRY WELL 2



Summary for Pond SP-1: INFILTRATION BASIN

Inflow Area = 1.712 ac, 57.07% Impervious, Inflow Depth = 1.43" for 1-YEAR event
Inflow = 2.56 cfs @ 12.08 hrs, Volume= 0.204 af
Outflow = 0.11 cfs @ 15.46 hrs, Volume= 0.204 af, Atten= 96%, Lag= 203.1 min
Discarded = 0.11 cfs @ 15.46 hrs, Volume= 0.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 248.86' @ 15.46 hrs Surf.Area= 4,435 sf Storage= 4,951 cf

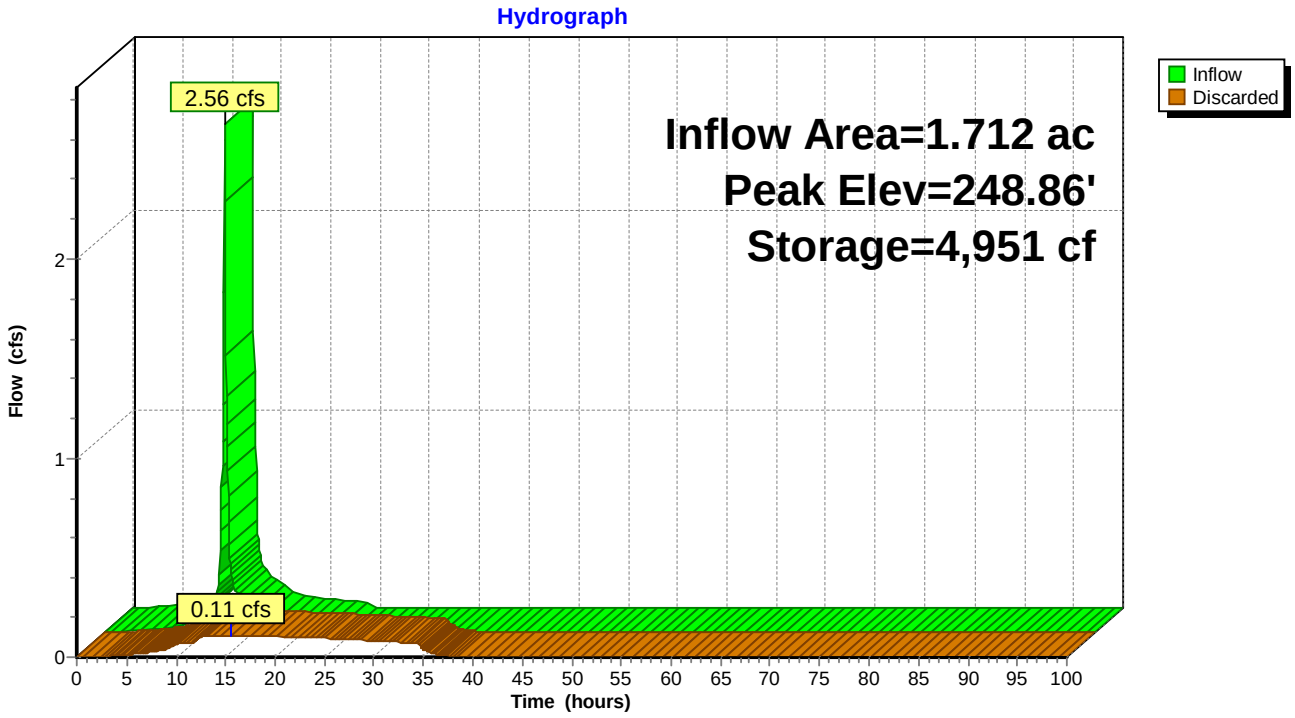
Plug-Flow detention time= 489.1 min calculated for 0.204 af (100% of inflow)
Center-of-Mass det. time= 489.3 min (1,277.2 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1	247.50'	34,493 cf	**17.00'W x 168.00'L x 5.50'H Prismatoid Z=3.0**

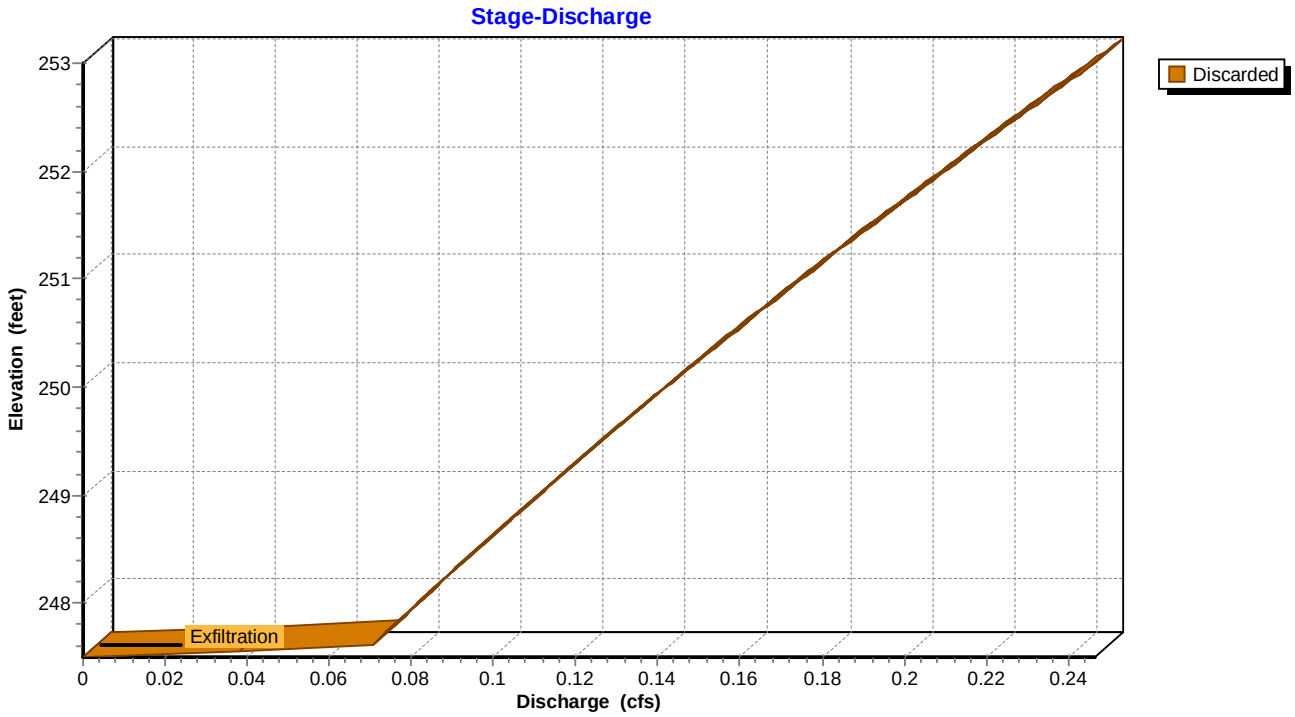
Device	Routing	Invert	Outlet Devices
#1	Discarded	247.50'	**1.020 in/hr Exfiltration over Wetted area** Phase-In= 0.10'

Discarded OutFlow Max=0.11 cfs @ 15.46 hrs HW=248.86' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.11 cfs)

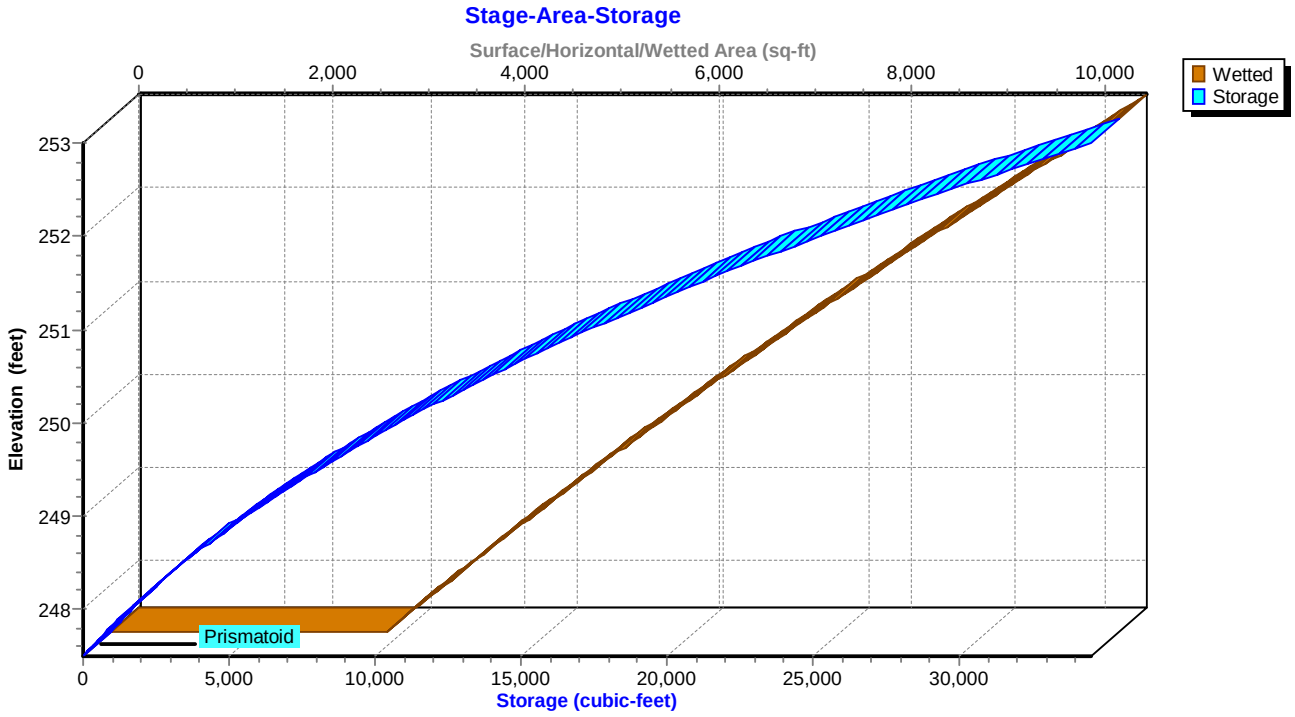
Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN

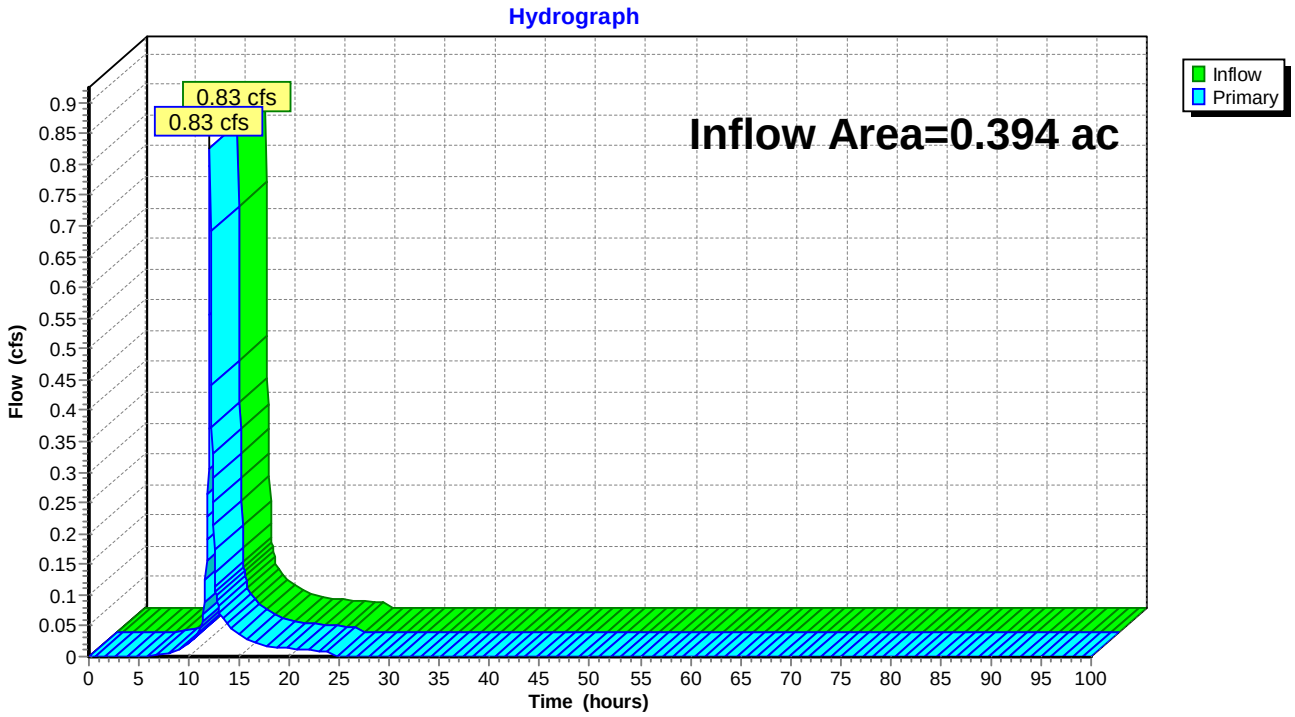


Summary for Link SP-2: SP-2

Inflow Area = 0.394 ac, 88.07% Impervious, Inflow Depth = 1.79" for 1-YEAR event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 0.059 af
Primary = 0.83 cfs @ 12.07 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

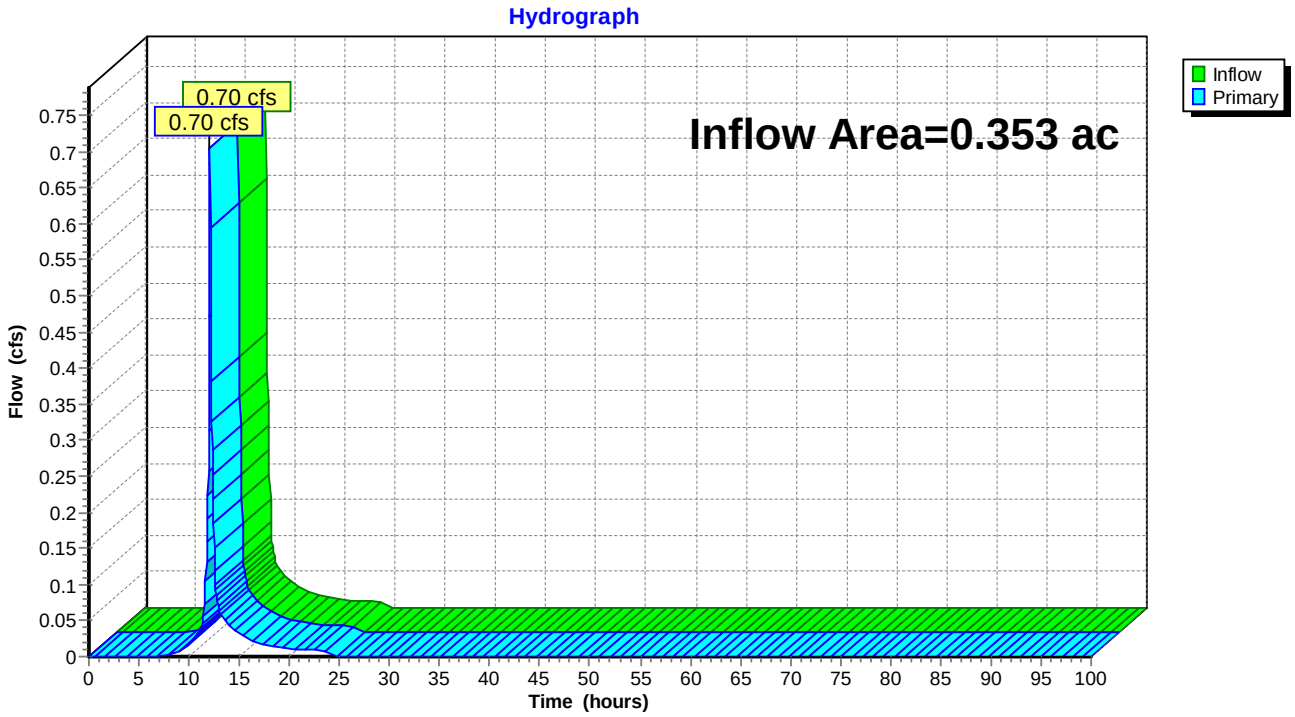


Summary for Link SP-3: SP-3

Inflow Area = 0.353 ac, 84.14% Impervious, Inflow Depth = 1.71" for 1-YEAR event
Inflow = 0.70 cfs @ 12.08 hrs, Volume= 0.050 af
Primary = 0.70 cfs @ 12.08 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

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

Link SP-3: SP-3



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 DA-1: POST-DA1 Runoff Area=0.129 ac 100.00% Impervious Runoff Depth=4.56"
Tc=5.0 min CN=98 Runoff=0.61 cfs 0.049 af

Subcatchment DA-2: POST-DA2 Runoff Area=0.087 ac 5.75% Impervious Runoff Depth=0.56"
Tc=5.0 min CN=49 Runoff=0.03 cfs 0.004 af

Subcatchment DA-3: POST-DA3 Runoff Area=0.499 ac 0.00% Impervious Runoff Depth=1.45"
Tc=5.0 min CN=64 Runoff=0.80 cfs 0.060 af

Subcatchment DA-4: POST-DA4 Runoff Area=0.575 ac 100.00% Impervious Runoff Depth=4.56"
Tc=5.0 min CN=98 Runoff=2.72 cfs 0.219 af

Subcatchment DA-5: POST-DA5 TO DRY WELL Runoff Area=0.394 ac 88.07% Impervious Runoff Depth=3.79"
Tc=5.0 min CN=91 Runoff=1.69 cfs 0.124 af

Subcatchment DA-OFF1: DA-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=3.09"
Tc=5.0 min CN=84 Runoff=1.53 cfs 0.109 af

Subcatchment DA6: POST-DA6 TO DRY WELL 2 Runoff Area=0.353 ac 84.14% Impervious Runoff Depth=3.68"
Tc=5.0 min CN=90 Runoff=1.48 cfs 0.108 af

Pond SP-1: INFILTRATION BASIN Peak Elev=250.29' Storage=12,549 cf Inflow=5.66 cfs 0.441 af
Outflow=0.15 cfs 0.441 af

Link SP-2: SP-2 Inflow=1.69 cfs 0.124 af
Primary=1.69 cfs 0.124 af

Link SP-3: SP-3 Inflow=1.48 cfs 0.108 af
Primary=1.48 cfs 0.108 af

Summary for Subcatchment DA-1: POST-DA1

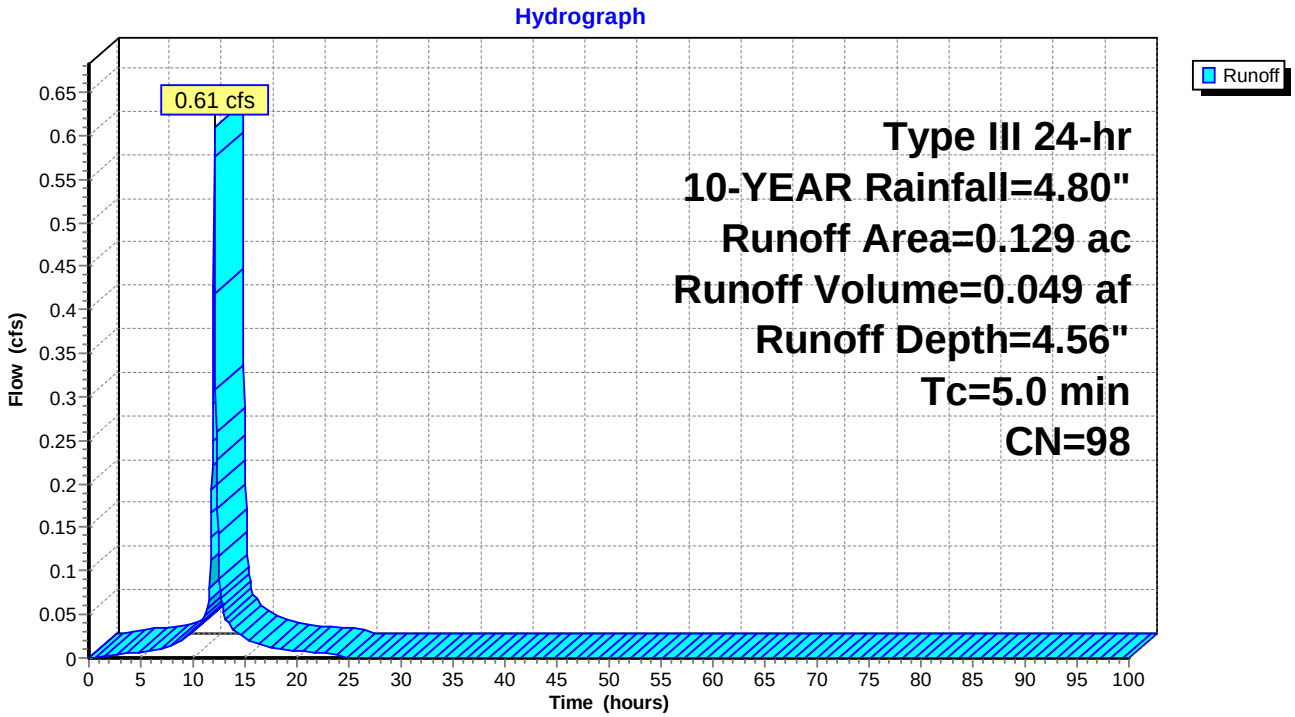
Runoff = 0.61 cfs @ 12.07 hrs, Volume= 0.049 af, Depth= 4.56"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.105	98	Impervious
*	0.024	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.129	98	Weighted Average
	0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-1: POST-DA1



Summary for Subcatchment DA-2: POST-DA2

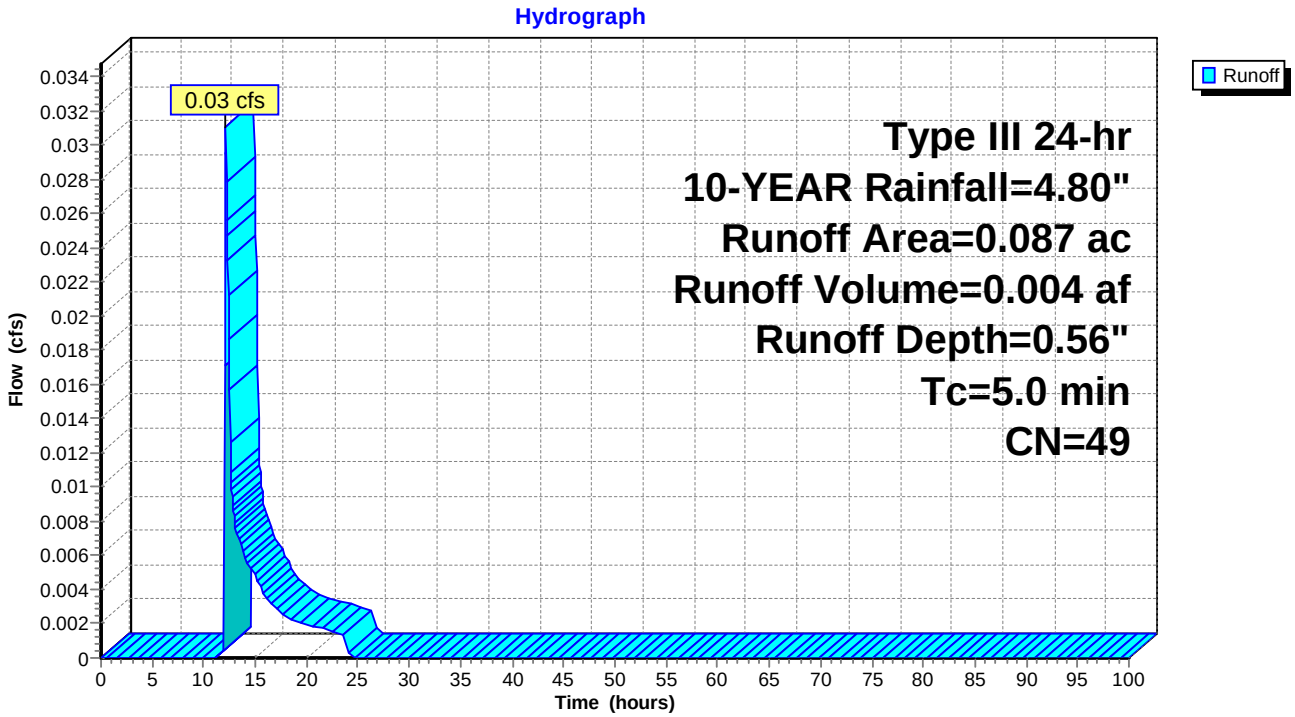
Runoff = 0.03 cfs @ 12.12 hrs, Volume= 0.004 af, Depth= 0.56"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.005	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.056	39	>75% Grass cover, Good, HSG A
	0.026	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.087	49	Weighted Average
	0.082		94.25% Pervious Area
	0.005		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-2: POST-DA2



Summary for Subcatchment DA-3: POST-DA3

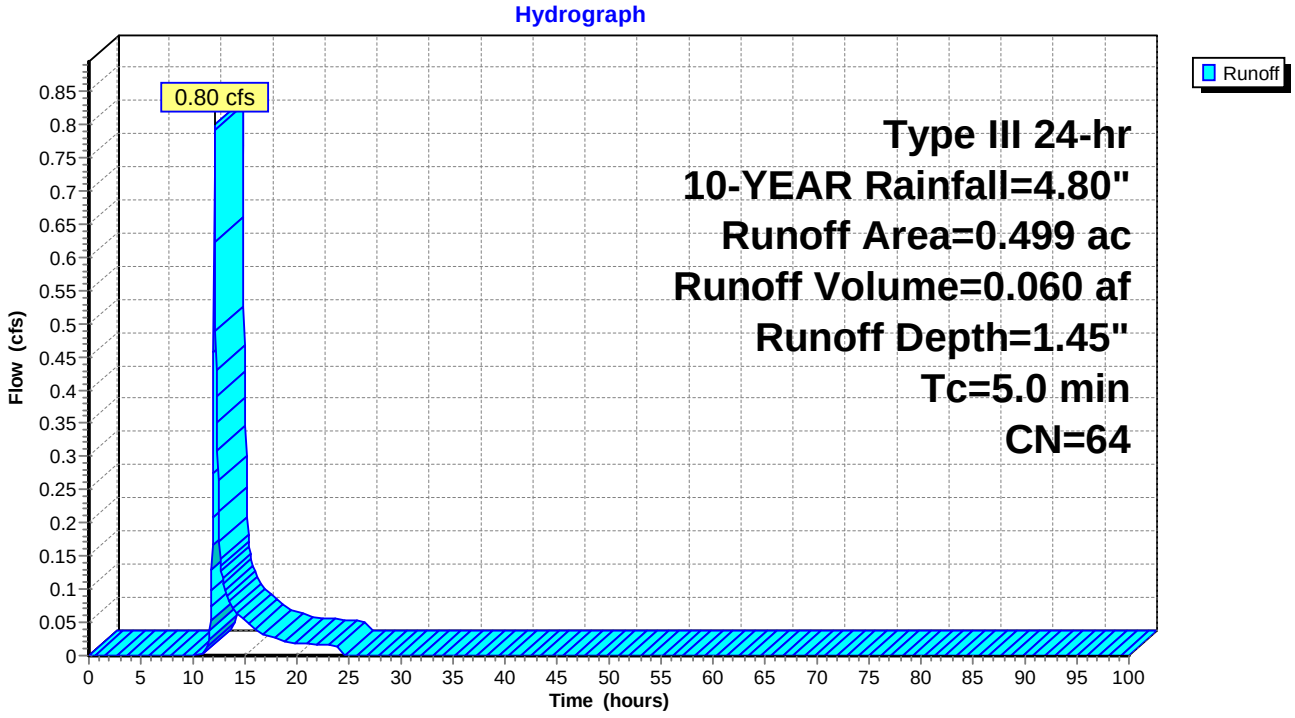
Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.060 af, Depth= 1.45"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.123	61	>75% Grass cover, Good, HSG B
	0.004	43	Woods/grass comb., Fair, HSG A
	0.372	65	Woods/grass comb., Fair, HSG B
	0.499	64	Weighted Average
	0.499		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-3: POST-DA3



Summary for Subcatchment DA-4: POST-DA4

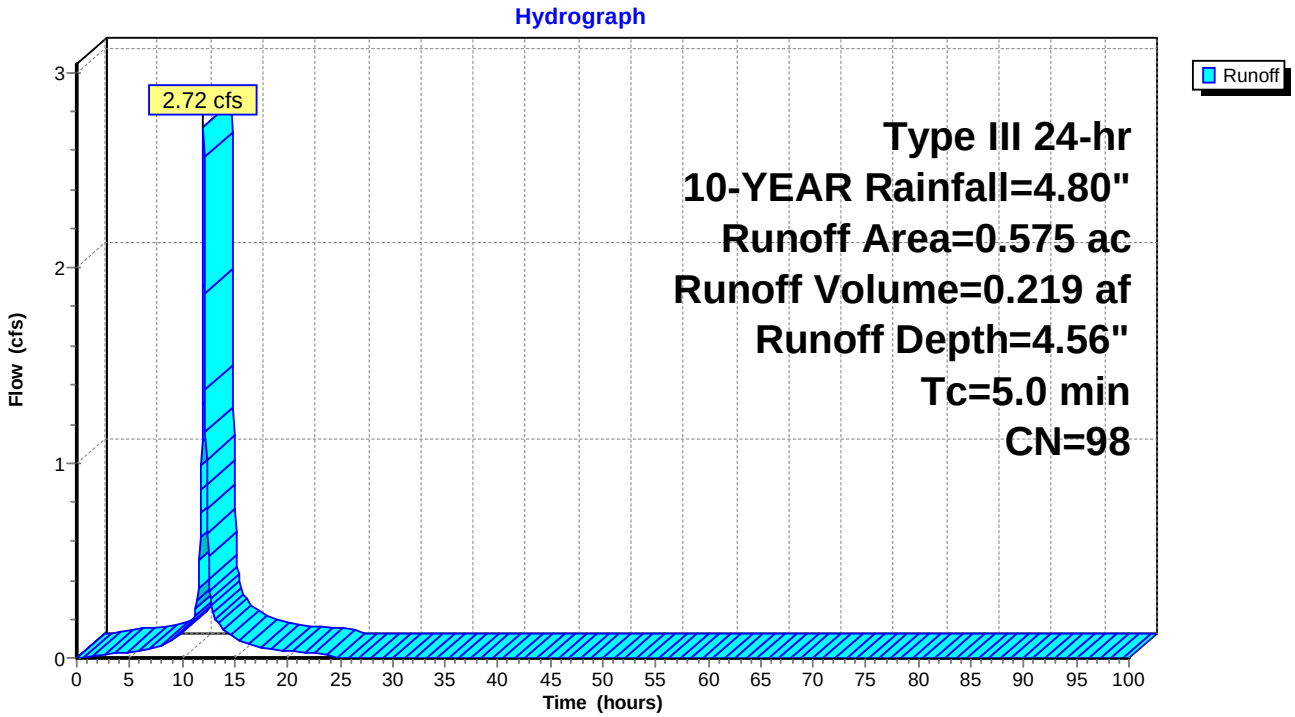
Runoff = 2.72 cfs @ 12.07 hrs, Volume= 0.219 af, Depth= 4.56"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.161	98	Impervious
*	0.414	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.575	98	Weighted Average
	0.575		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-4: POST-DA4



Summary for Subcatchment DA-5: POST-DA5 TO DRY WELL 1

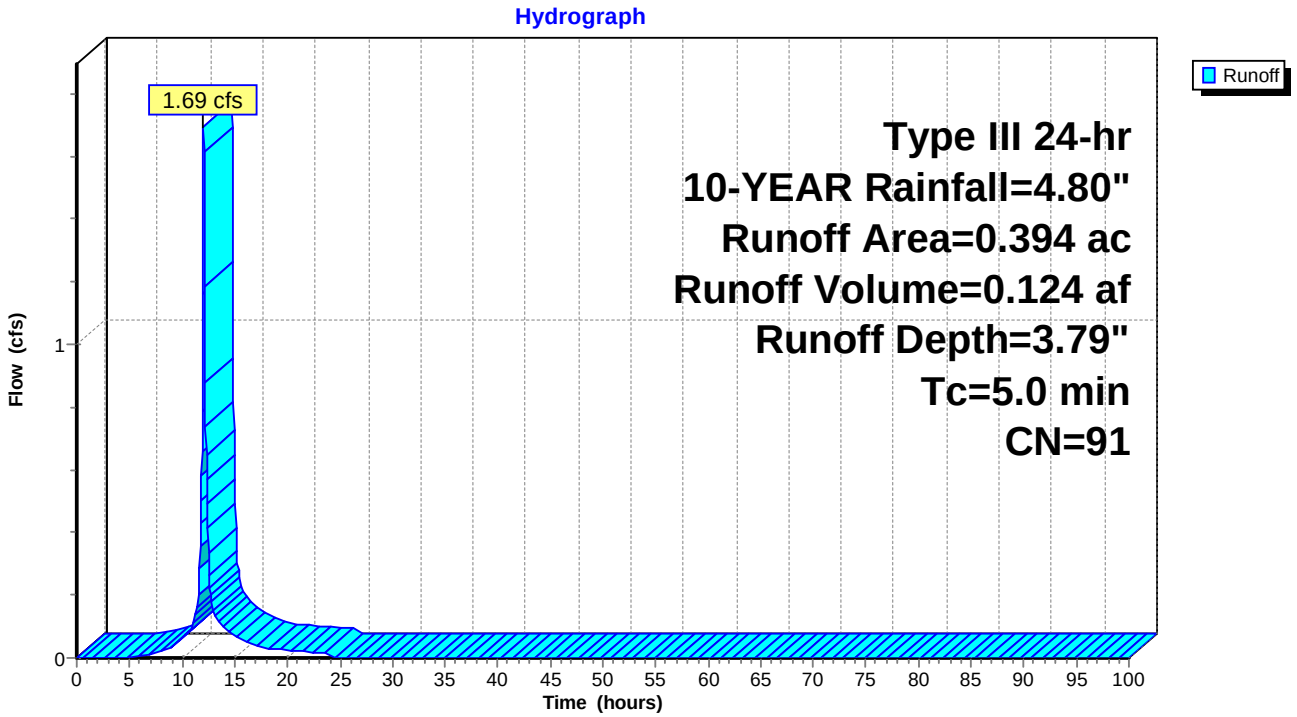
Runoff = 1.69 cfs @ 12.07 hrs, Volume= 0.124 af, Depth= 3.79"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.347	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.017	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.030	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.394	91	Weighted Average
	0.047		11.93% Pervious Area
	0.347		88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-5: POST-DA5 TO DRY WELL 1



Summary for Subcatchment DA-OFF1: DA-OFF1

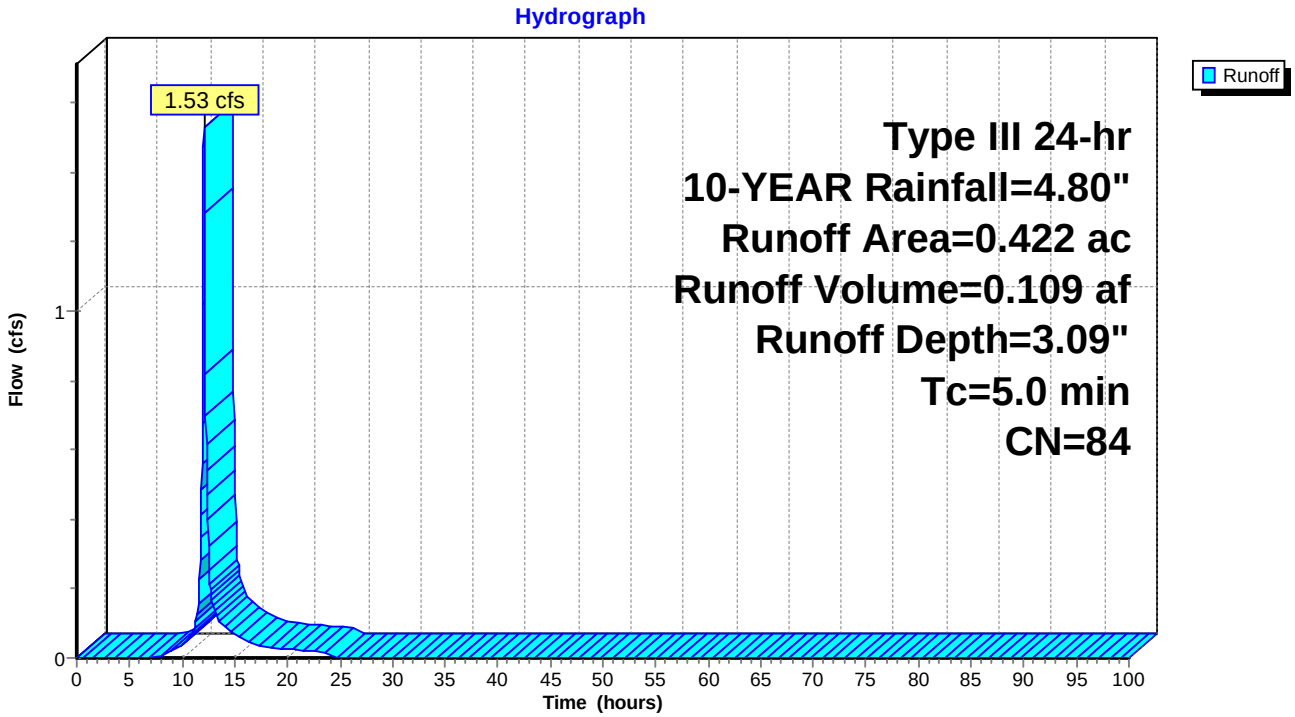
Runoff = 1.53 cfs @ 12.07 hrs, Volume= 0.109 af, Depth= 3.09"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-OFF1: DA-OFF1



Summary for Subcatchment DA6: POST-DA6 TO DRY WELL 2

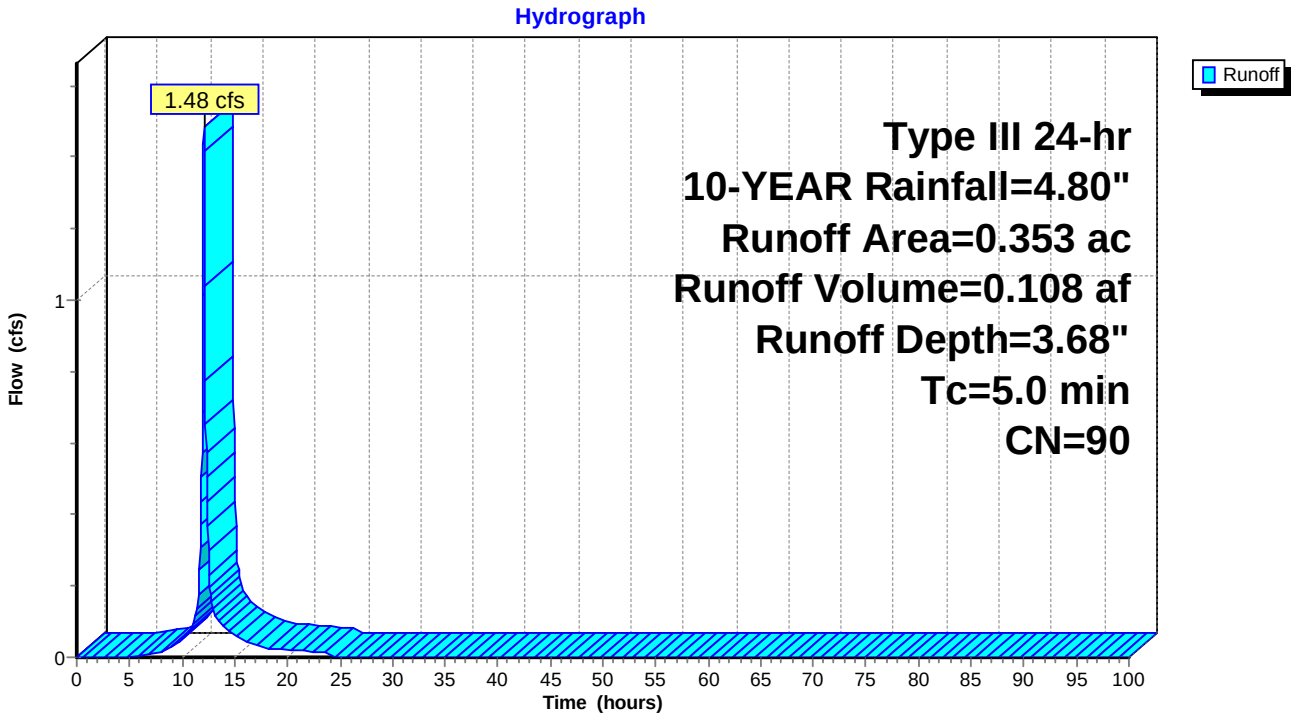
Runoff = 1.48 cfs @ 12.07 hrs, Volume= 0.108 af, Depth= 3.68"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

	Area (ac)	CN	Description
*	0.281	98	Impervious
*	0.016	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.034	39	>75% Grass cover, Good, HSG A
	0.022	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.353	90	Weighted Average
	0.056		15.86% Pervious Area
	0.297		84.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA6: POST-DA6 TO DRY WELL 2



Summary for Pond SP-1: INFILTRATION BASIN

Inflow Area = 1.712 ac, 57.07% Impervious, Inflow Depth = 3.09" for 10-YEAR event
Inflow = 5.66 cfs @ 12.07 hrs, Volume= 0.441 af
Outflow = 0.15 cfs @ 16.82 hrs, Volume= 0.441 af, Atten= 97%, Lag= 284.9 min
Discarded = 0.15 cfs @ 16.82 hrs, Volume= 0.441 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 250.29' @ 16.82 hrs Surf.Area= 6,233 sf Storage= 12,549 cf

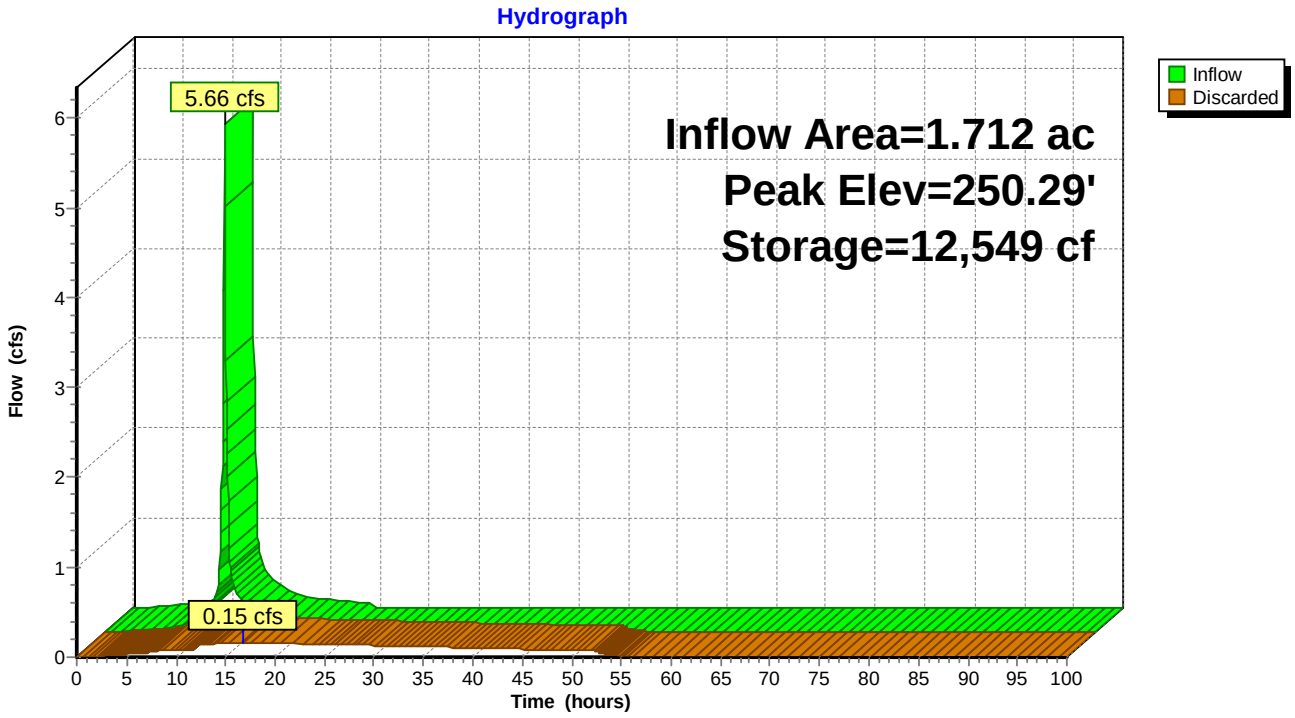
Plug-Flow detention time= 904.8 min calculated for 0.441 af (100% of inflow)
Center-of-Mass det. time= 905.3 min (1,686.5 - 781.2)

Volume	Invert	Avail.Storage	Storage Description
#1	247.50'	34,493 cf	**17.00'W x 168.00'L x 5.50'H Prismatoid Z=3.0**

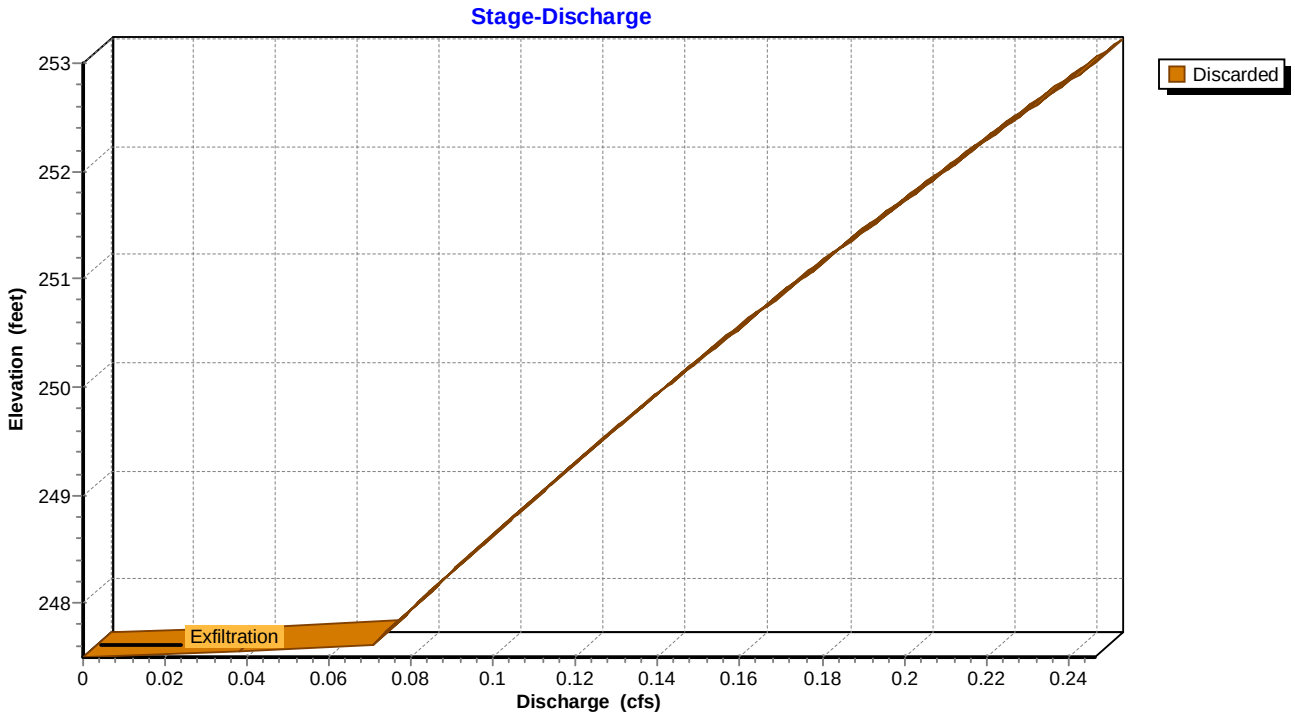
Device	Routing	Invert	Outlet Devices
#1	Discarded	247.50'	**1.020 in/hr Exfiltration over Wetted area** Phase-In= 0.10'

Discarded OutFlow Max=0.15 cfs @ 16.82 hrs HW=250.29' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.15 cfs)

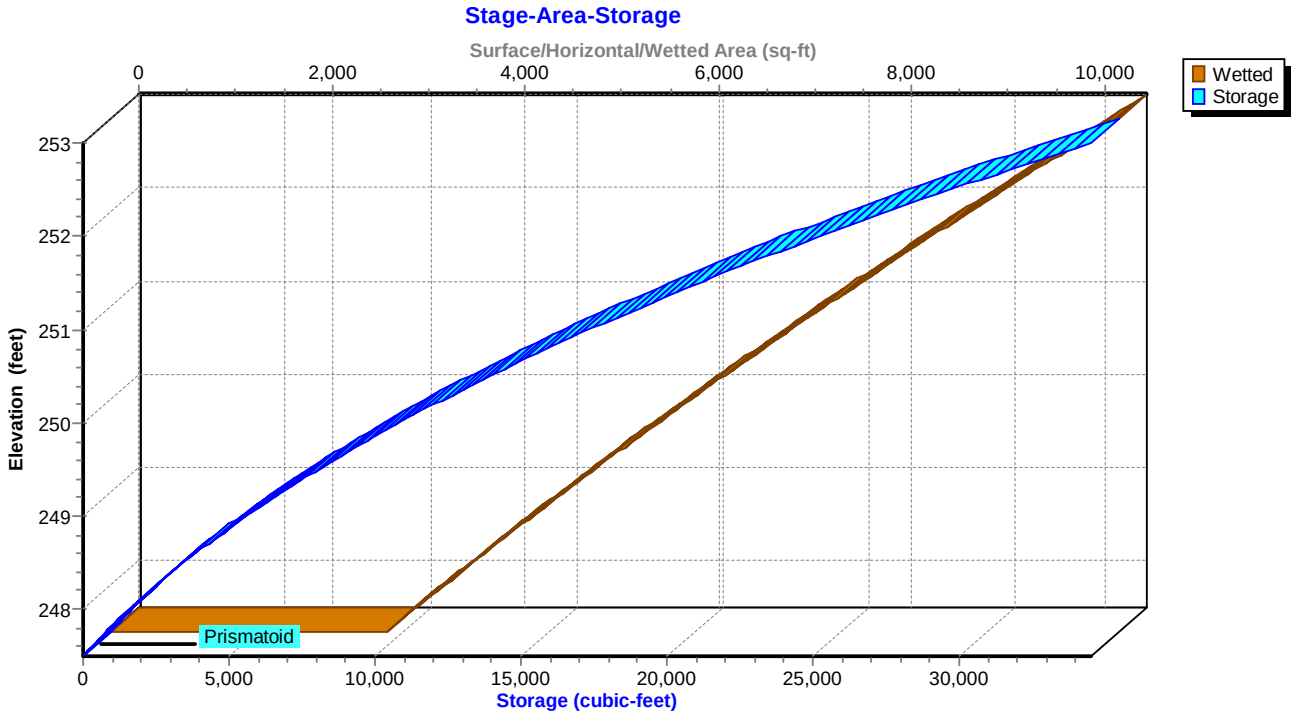
Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN

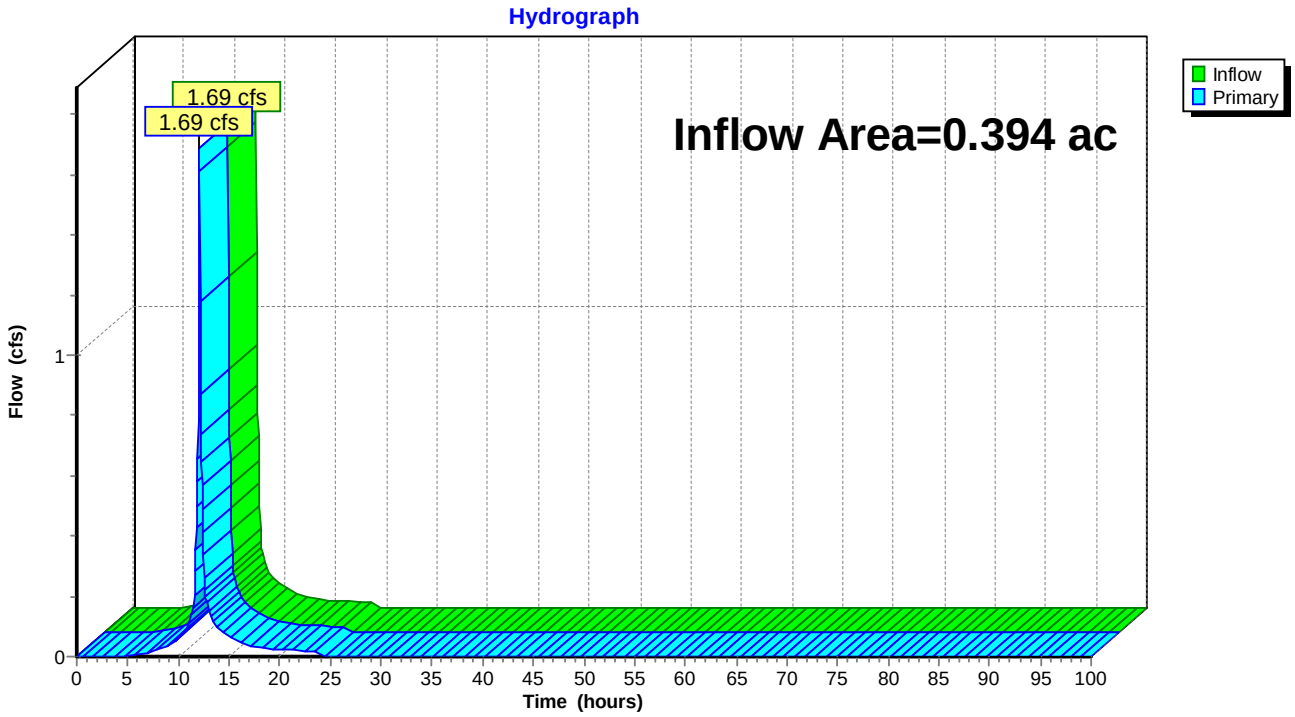


Summary for Link SP-2: SP-2

Inflow Area = 0.394 ac, 88.07% Impervious, Inflow Depth = 3.79" for 10-YEAR event
Inflow = 1.69 cfs @ 12.07 hrs, Volume= 0.124 af
Primary = 1.69 cfs @ 12.07 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

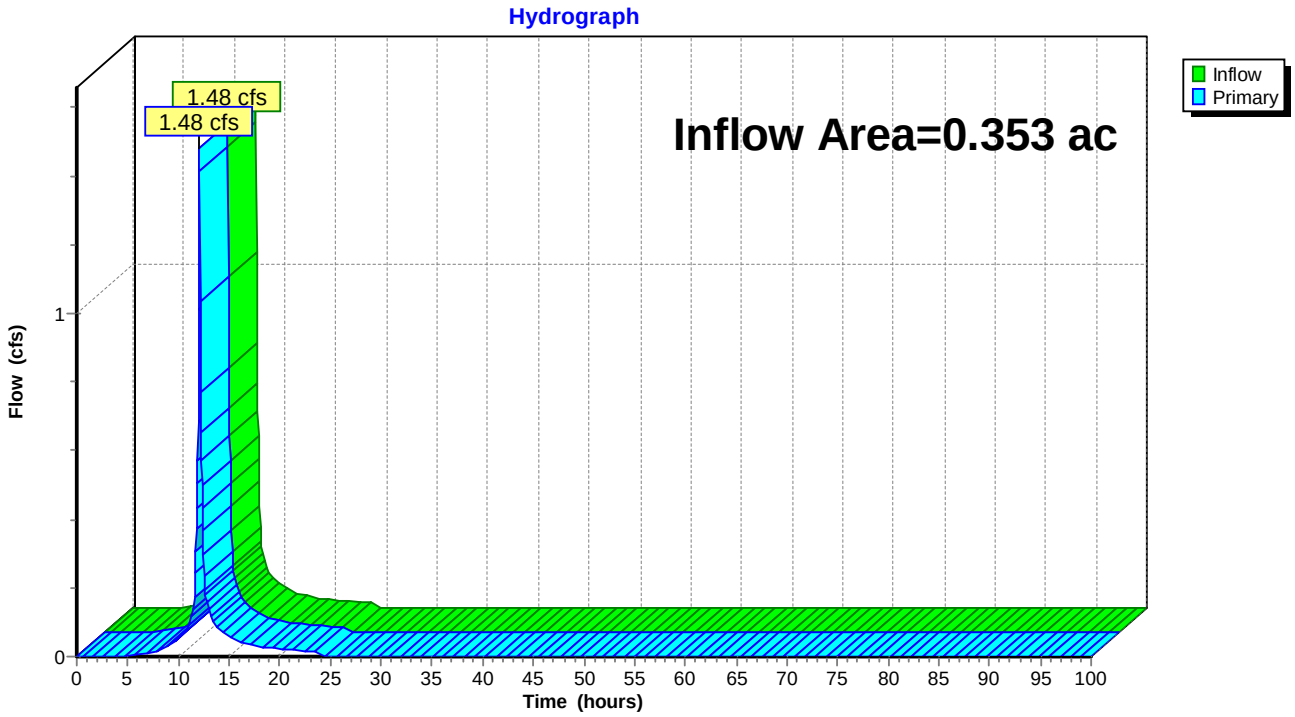


Summary for Link SP-3: SP-3

Inflow Area = 0.353 ac, 84.14% Impervious, Inflow Depth = 3.68" for 10-YEAR event
Inflow = 1.48 cfs @ 12.07 hrs, Volume= 0.108 af
Primary = 1.48 cfs @ 12.07 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

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

Link SP-3: SP-3



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
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 DA-1: POST-DA1 Runoff Area=0.129 ac 100.00% Impervious Runoff Depth=8.46"
Tc=5.0 min CN=98 Runoff=1.11 cfs 0.091 af

Subcatchment DA-2: POST-DA2 Runoff Area=0.087 ac 5.75% Impervious Runoff Depth=2.57"
Tc=5.0 min CN=49 Runoff=0.25 cfs 0.019 af

Subcatchment DA-3: POST-DA3 Runoff Area=0.499 ac 0.00% Impervious Runoff Depth=4.35"
Tc=5.0 min CN=64 Runoff=2.54 cfs 0.181 af

Subcatchment DA-4: POST-DA4 Runoff Area=0.575 ac 100.00% Impervious Runoff Depth=8.46"
Tc=5.0 min CN=98 Runoff=4.95 cfs 0.405 af

Subcatchment DA-5: POST-DA5 TO DRY WELL Runoff Area=0.394 ac 88.07% Impervious Runoff Depth=7.62"
Tc=5.0 min CN=91 Runoff=3.27 cfs 0.250 af

Subcatchment DA-OFF1: DA-OFF1 Runoff Area=0.422 ac 63.51% Impervious Runoff Depth=6.77"
Tc=5.0 min CN=84 Runoff=3.25 cfs 0.238 af

Subcatchment DA6: POST-DA6 TO DRY WELL 2 Runoff Area=0.353 ac 84.14% Impervious Runoff Depth=7.50"
Tc=5.0 min CN=90 Runoff=2.90 cfs 0.220 af

Pond SP-1: INFILTRATION BASIN Peak Elev=252.51' Storage=29,721 cf Inflow=12.09 cfs 0.934 af
Outflow=0.23 cfs 0.934 af

Link SP-2: SP-2 Inflow=3.27 cfs 0.250 af
Primary=3.27 cfs 0.250 af

Link SP-3: SP-3 Inflow=2.90 cfs 0.220 af
Primary=2.90 cfs 0.220 af

Summary for Subcatchment DA-1: POST-DA1

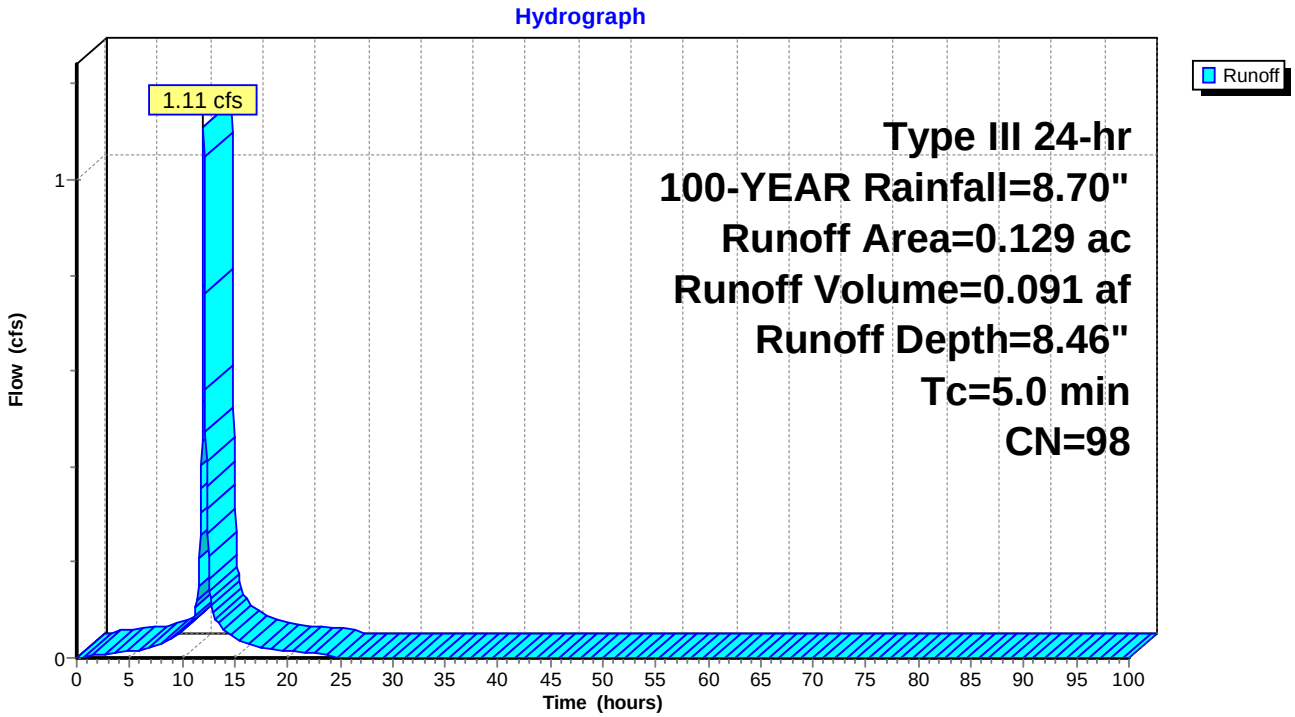
Runoff = 1.11 cfs @ 12.07 hrs, Volume= 0.091 af, Depth= 8.46"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.105	98	Impervious
*	0.024	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.129	98	Weighted Average
	0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-1: POST-DA1



Summary for Subcatchment DA-2: POST-DA2

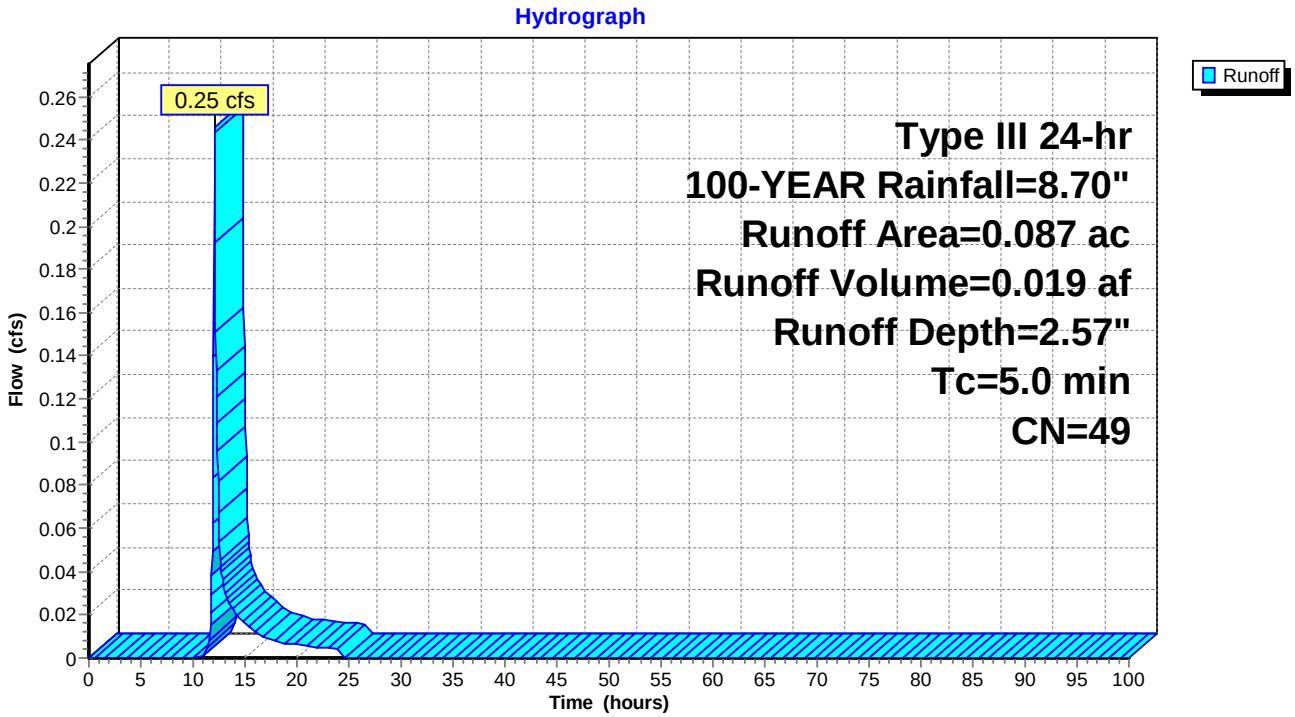
Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.019 af, Depth= 2.57"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.005	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.056	39	>75% Grass cover, Good, HSG A
	0.026	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.087	49	Weighted Average
	0.082		94.25% Pervious Area
	0.005		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-2: POST-DA2



Summary for Subcatchment DA-3: POST-DA3

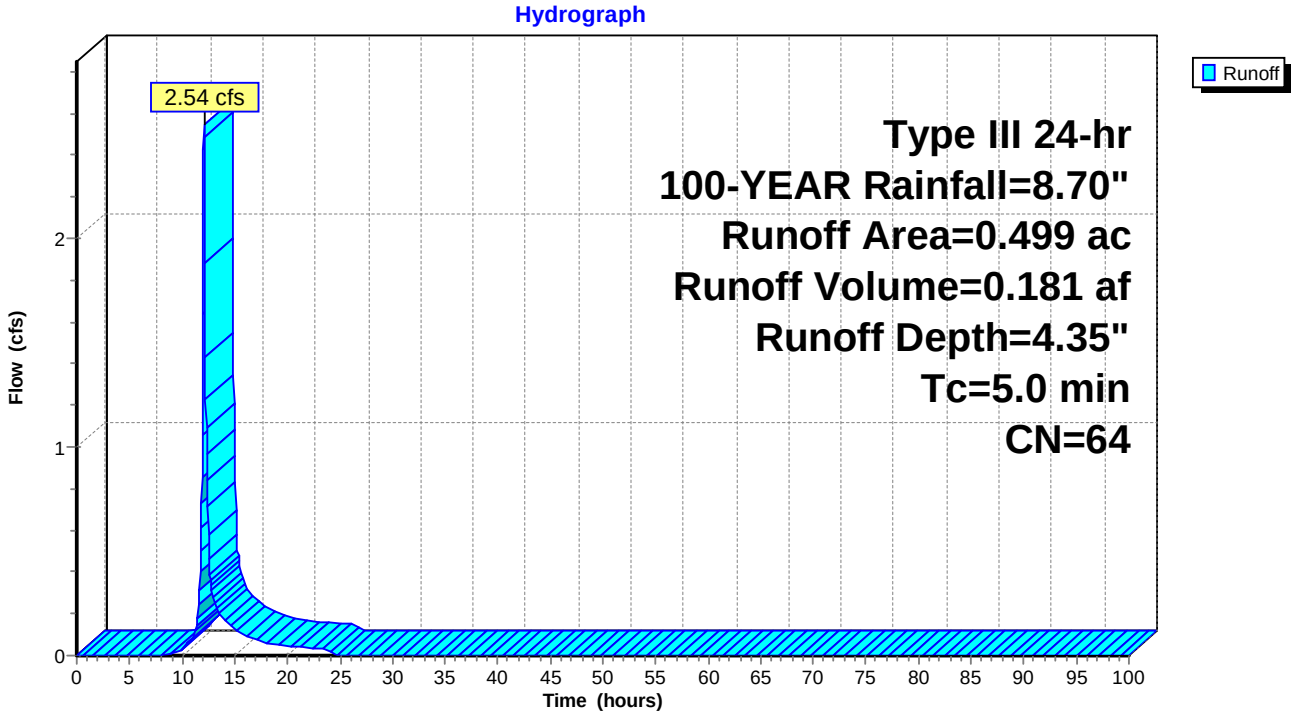
Runoff = 2.54 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 4.35"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.000	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.123	61	>75% Grass cover, Good, HSG B
	0.004	43	Woods/grass comb., Fair, HSG A
	0.372	65	Woods/grass comb., Fair, HSG B
	0.499	64	Weighted Average
	0.499		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-3: POST-DA3



Summary for Subcatchment DA-4: POST-DA4

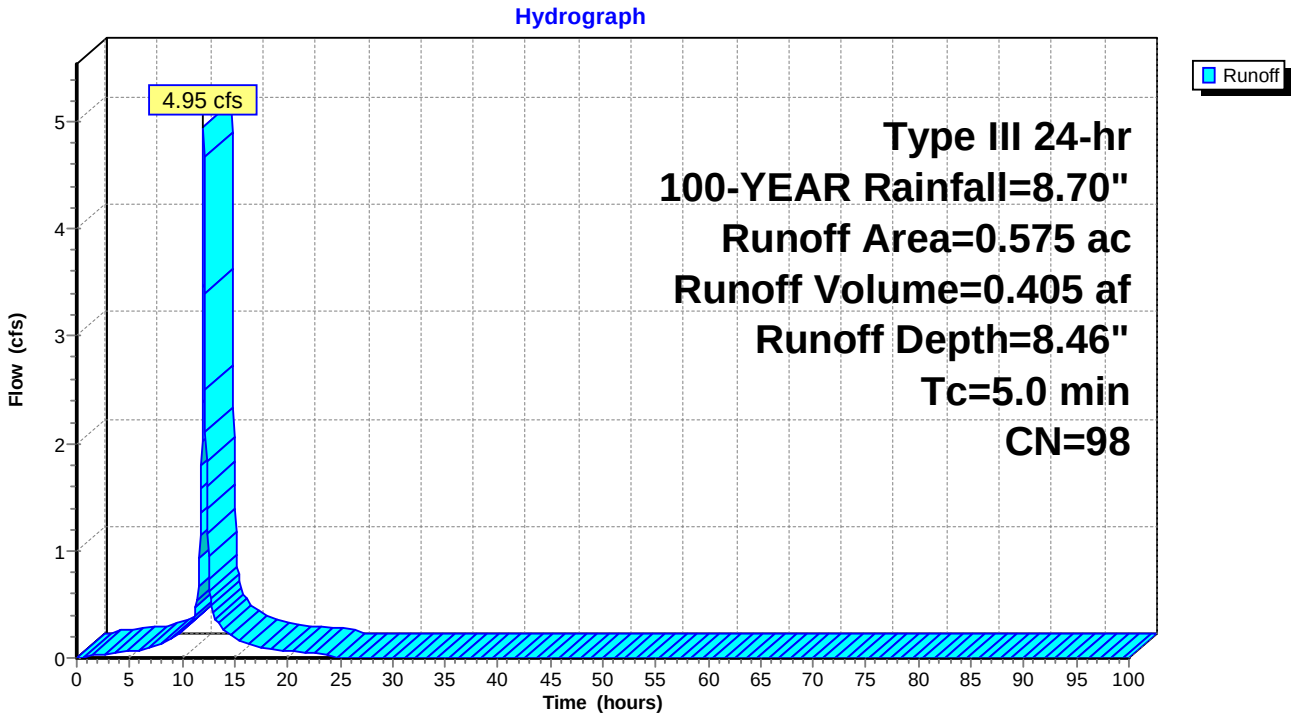
Runoff = 4.95 cfs @ 12.07 hrs, Volume= 0.405 af, Depth= 8.46"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.161	98	Impervious
*	0.414	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.575	98	Weighted Average
	0.575		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-4: POST-DA4



Summary for Subcatchment DA-5: POST-DA5 TO DRY WELL 1

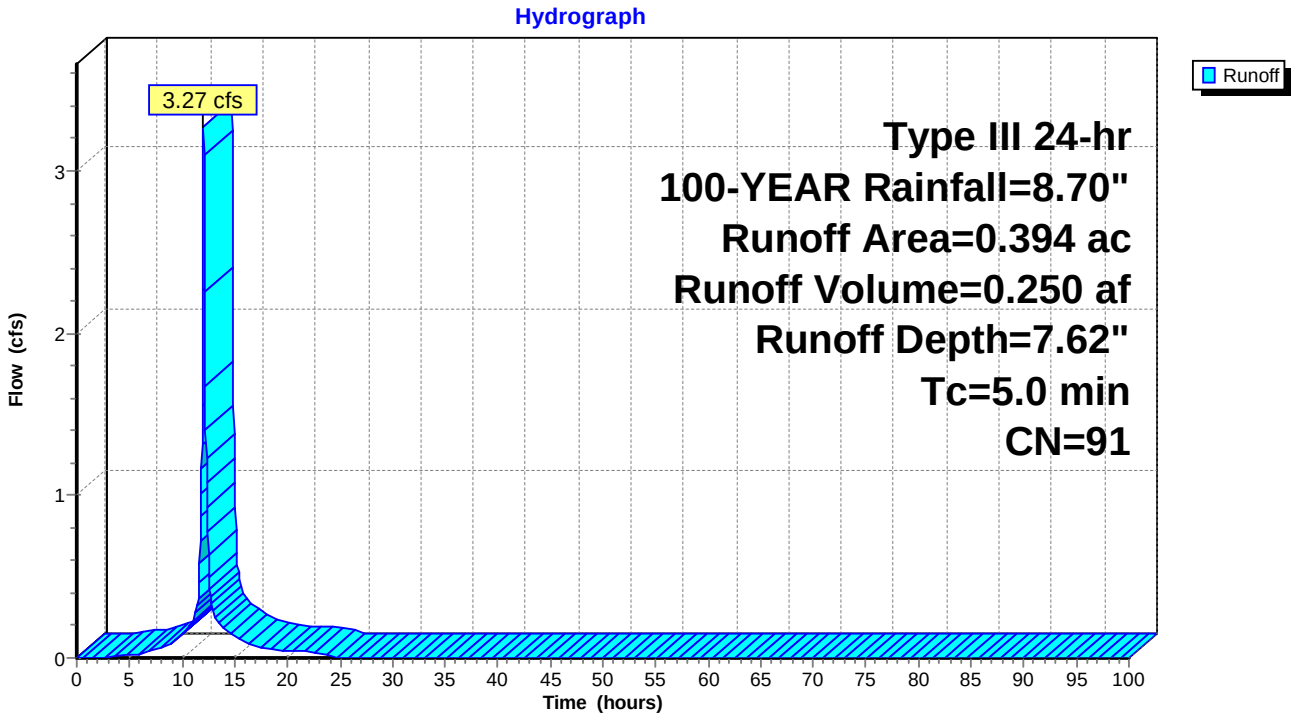
Runoff = 3.27 cfs @ 12.07 hrs, Volume= 0.250 af, Depth= 7.62"
Routed to Link SP-2 : SP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.347	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.017	39	>75% Grass cover, Good, HSG A
	0.000	61	>75% Grass cover, Good, HSG B
	0.030	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.394	91	Weighted Average
	0.047		11.93% Pervious Area
	0.347		88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-5: POST-DA5 TO DRY WELL 1



Summary for Subcatchment DA-OFF1: DA-OFF1

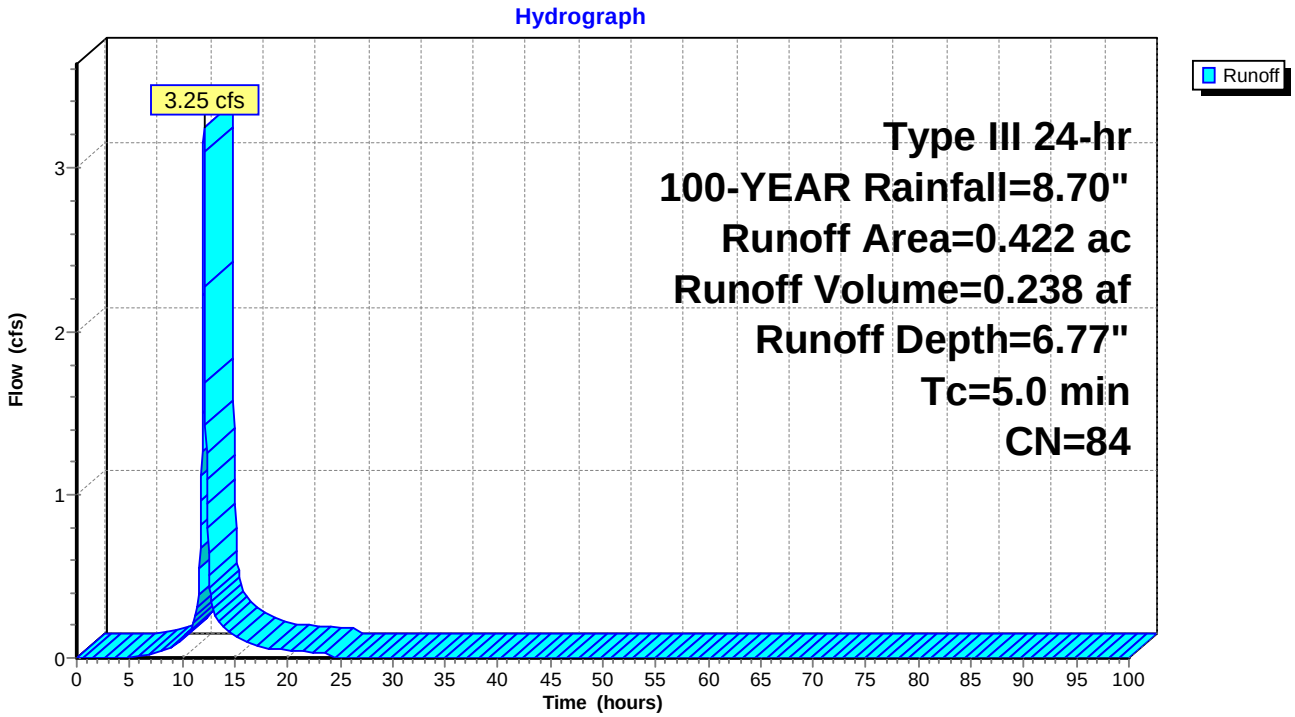
Runoff = 3.25 cfs @ 12.07 hrs, Volume= 0.238 af, Depth= 6.77"
Routed to Pond SP-1 : INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.268	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.000	39	>75% Grass cover, Good, HSG A
	0.112	61	>75% Grass cover, Good, HSG B
	0.009	43	Woods/grass comb., Fair, HSG A
	0.033	65	Woods/grass comb., Fair, HSG B
	0.422	84	Weighted Average
	0.154		36.49% Pervious Area
	0.268		63.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA-OFF1: DA-OFF1



Summary for Subcatchment DA6: POST-DA6 TO DRY WELL 2

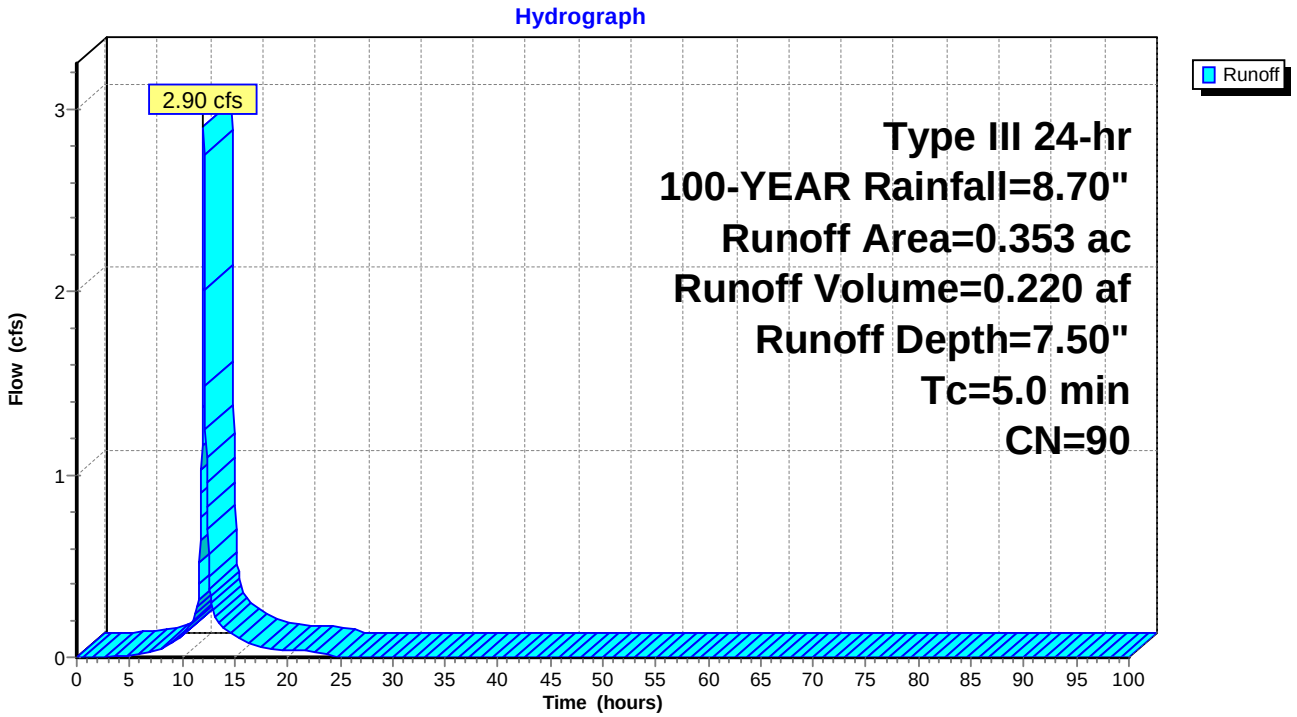
Runoff = 2.90 cfs @ 12.07 hrs, Volume= 0.220 af, Depth= 7.50"
Routed to Link SP-3 : SP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

	Area (ac)	CN	Description
*	0.281	98	Impervious
*	0.016	98	Impervious
	0.000	68	<50% Grass cover, Poor, HSG A
	0.000	79	<50% Grass cover, Poor, HSG B
	0.034	39	>75% Grass cover, Good, HSG A
	0.022	61	>75% Grass cover, Good, HSG B
	0.000	43	Woods/grass comb., Fair, HSG A
	0.000	65	Woods/grass comb., Fair, HSG B
	0.353	90	Weighted Average
	0.056		15.86% Pervious Area
	0.297		84.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DA6: POST-DA6 TO DRY WELL 2



Summary for Pond SP-1: INFILTRATION BASIN

Inflow Area = 1.712 ac, 57.07% Impervious, Inflow Depth = 6.55" for 100-YEAR event
Inflow = 12.09 cfs @ 12.07 hrs, Volume= 0.934 af
Outflow = 0.23 cfs @ 17.94 hrs, Volume= 0.934 af, Atten= 98%, Lag= 352.1 min
Discarded = 0.23 cfs @ 17.94 hrs, Volume= 0.934 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 252.51' @ 17.94 hrs Surf.Area= 9,316 sf Storage= 29,721 cf

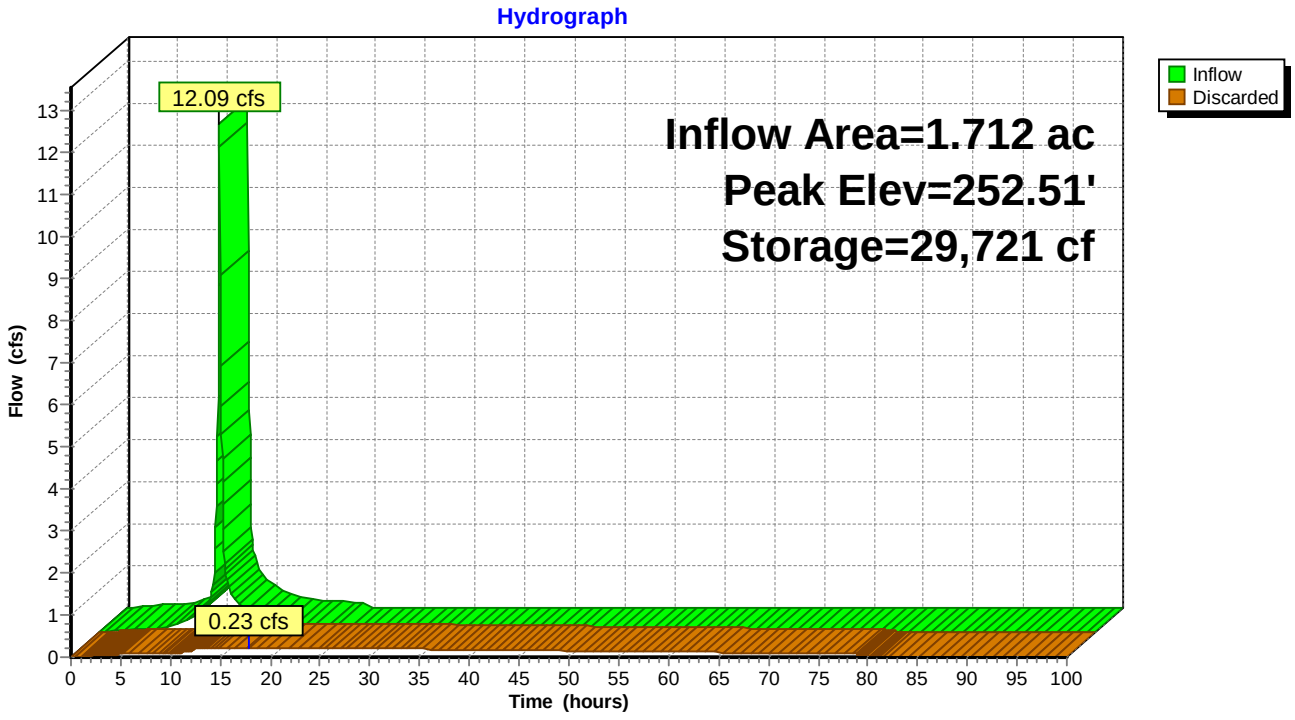
Plug-Flow detention time= 1,479.6 min calculated for 0.934 af (100% of inflow)
Center-of-Mass det. time= 1,479.4 min (2,252.0 - 772.6)

Volume	Invert	Avail.Storage	Storage Description
#1	247.50'	34,493 cf	**17.00'W x 168.00'L x 5.50'H Prismatoid Z=3.0**

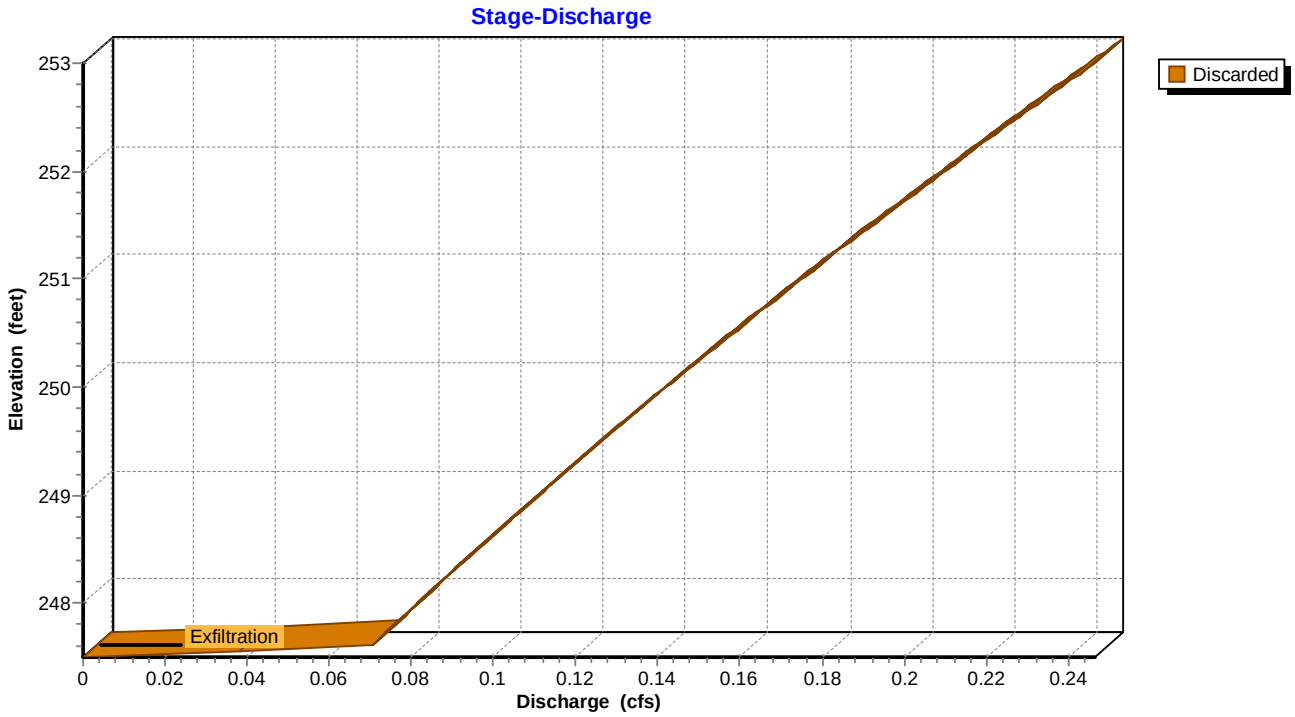
Device	Routing	Invert	Outlet Devices
#1	Discarded	247.50'	**1.020 in/hr Exfiltration over Wetted area** Phase-In= 0.10'

Discarded OutFlow Max=0.23 cfs @ 17.94 hrs HW=252.51' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.23 cfs)

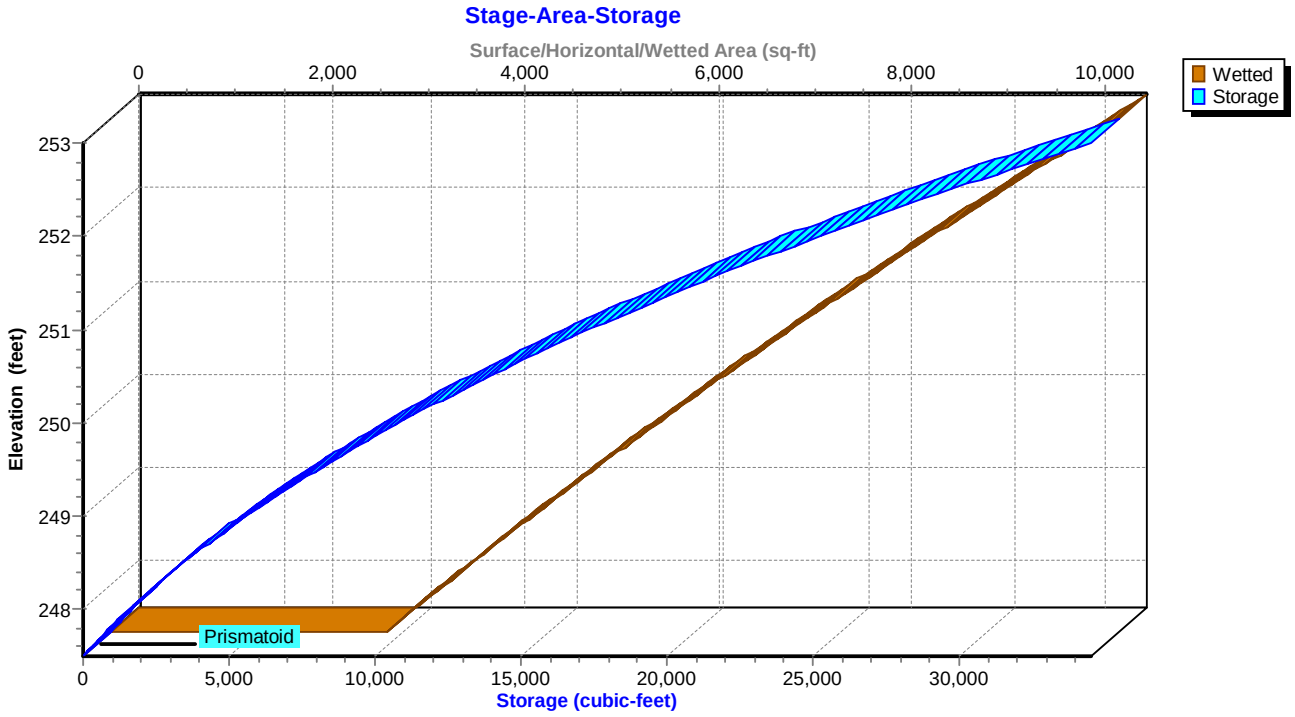
Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN



Pond SP-1: INFILTRATION BASIN

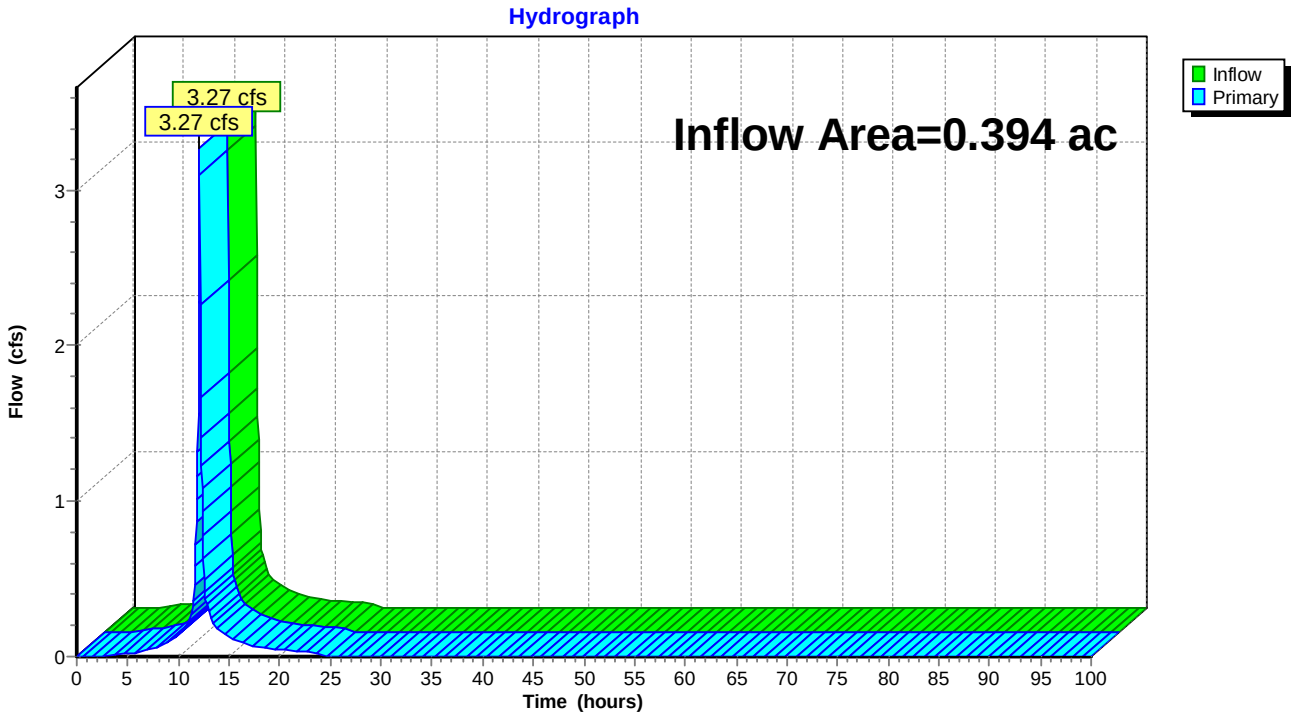


Summary for Link SP-2: SP-2

Inflow Area = 0.394 ac, 88.07% Impervious, Inflow Depth = 7.62" for 100-YEAR event
Inflow = 3.27 cfs @ 12.07 hrs, Volume= 0.250 af
Primary = 3.27 cfs @ 12.07 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min

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

Link SP-2: SP-2

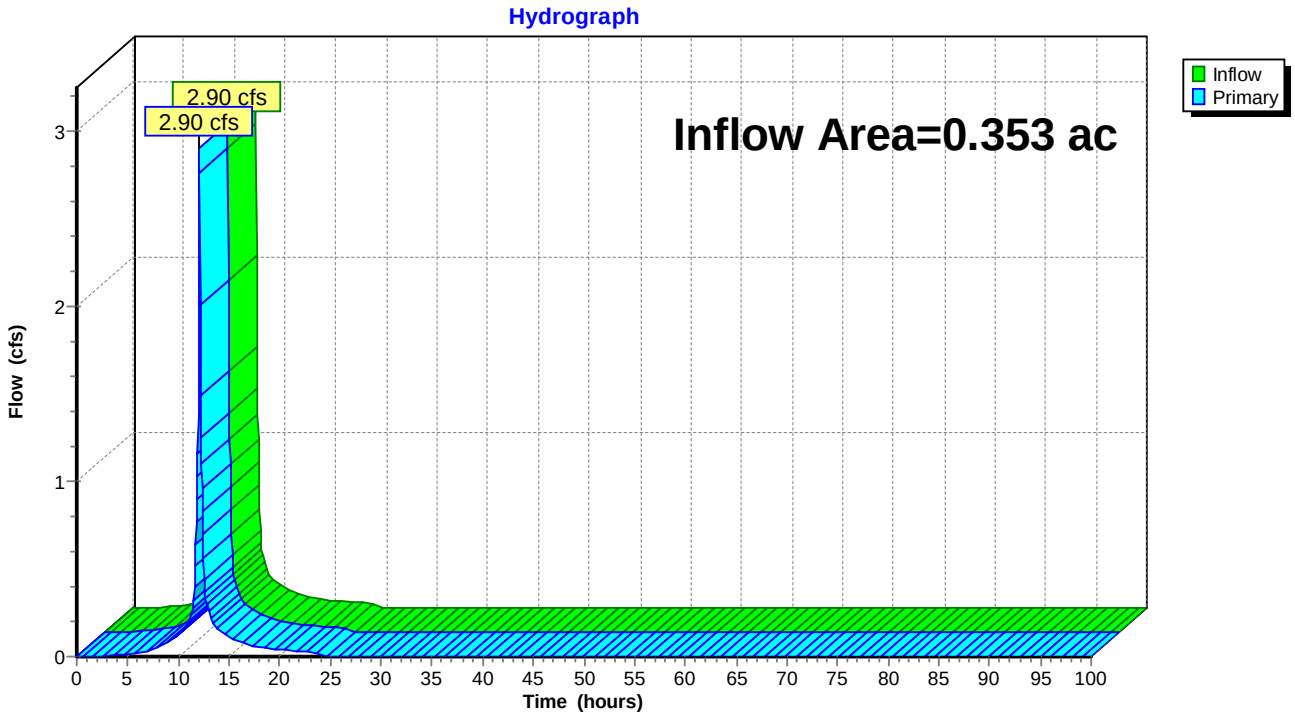


Summary for Link SP-3: SP-3

Inflow Area = 0.353 ac, 84.14% Impervious, Inflow Depth = 7.50" for 100-YEAR event
Inflow = 2.90 cfs @ 12.07 hrs, Volume= 0.220 af
Primary = 2.90 cfs @ 12.07 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

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

Link SP-3: SP-3



APPENDIX C – NRCS SOIL MAPS

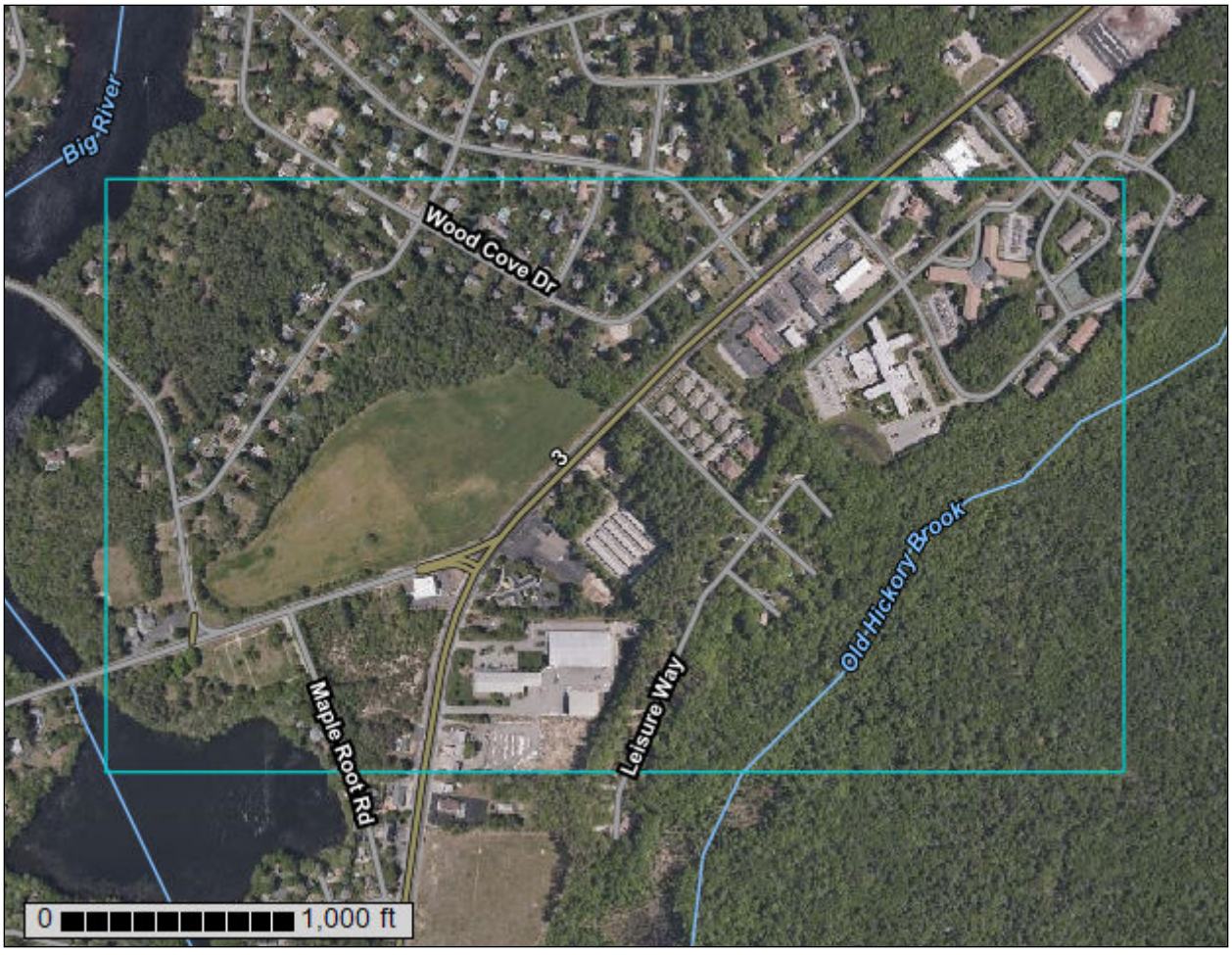
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties



October 21, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:7,290 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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 1:12,000.

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: State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties
Survey Area Data: Version 22, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 24, 2020—Jul 18, 2020

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
ChB	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	1.2	0.5%
Dc	Deerfield loamy fine sand, 0 to 3 percent slopes	1.9	0.8%
FeA	Freetown muck, 0 to 1 percent slopes	0.5	0.2%
HkA	Hinckley loamy sand, 0 to 3 percent slopes	26.1	10.3%
HkC	Hinckley loamy sand, 8 to 15 percent slopes	8.5	3.4%
MmA	Merrimac fine sandy loam, 0 to 3 percent slopes	73.6	29.1%
MU	Merrimac-Urban land complex, 0 to 8 percent slopes	0.8	0.3%
Sb	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	33.2	13.1%
Ss	Sudbury sandy loam	56.4	22.3%
SwA	Swansea muck, 0 to 1 percent slopes	9.8	3.9%
UD	Udorthents-Urban land complex	29.9	11.8%
W	Water	4.4	1.7%
WgA	Windsor loamy sand, 0 to 3 percent slopes	6.7	2.7%
Totals for Area of Interest		**253.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties

ChB—Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w81v
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, very stony, and similar soils: 50 percent
Charlton, very stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Very Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines

Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Chatfield, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Dc—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

FeA—Freetown muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t2q9
Elevation: 0 to 1,110 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Freetown and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown

Setting

Landform: Depressions, depressions, swamps, kettles, marshes, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 5 percent
Landform: Bogs, swamps, marshes, depressions, depressions, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

HkA—Hinckley loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svm7
Elevation: 0 to 1,420 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

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
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 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 (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Landform: Outwash deltas, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash deltas, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Outwash deltas, kame terraces, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

HkC—Hinckley loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svm9
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Sudbury

Percent of map unit: 5 percent
Landform: Outwash deltas, moraines, outwash plains, kame terraces, outwash terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Kames, outwash plains, outwash terraces, moraines, eskers
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Moraines, eskers, kames, outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

MmA—Merrimac fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tyqr
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: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Merrimac and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Outwash plains, outwash terraces, moraines, eskers, kames
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 1.4 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 4.6 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

Sudbury

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Agawam

Percent of map unit: 3 percent
Landform: Stream terraces, outwash terraces, outwash plains, moraines, eskers, kames
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 2 percent
Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

MU—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 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: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Outwash plains, outwash terraces, moraines, eskers, kames
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Side slope, crest, riser, tread

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline (0.0 to 1.4 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Sudbury

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Outwash terraces, dunes, outwash plains, deltas
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Sb—Scarboro mucky fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svky
Elevation: 0 to 1,320 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: Not prime farmland

Map Unit Composition

Scarboro and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro

Setting

Landform: Drainageways, outwash deltas, outwash terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave

Parent material: Sandy glaciofluvial deposits derived from schist and/or sandy glaciofluvial deposits derived from gneiss and/or sandy glaciofluvial deposits derived from granite

Typical profile

Oe - 0 to 3 inches: mucky peat
A - 3 to 11 inches: mucky fine sandy loam
Cg1 - 11 to 21 inches: sand
Cg2 - 21 to 65 inches: gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Wareham

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Walpole

Percent of map unit: 5 percent
Landform: Deltas, depressions, outwash terraces, depressions, outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ss—Sudbury sandy loam

Map Unit Setting

National map unit symbol: 9lx8
Elevation: 0 to 810 feet
Mean annual precipitation: 44 to 50 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 100 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sudbury and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sudbury

Setting

Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy and gravelly 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 5 inches: sandy loam
Bw1 - 5 to 17 inches: gravelly sandy loam
Bw2 - 17 to 25 inches: sandy loam
2C - 25 to 60 inches: Error

Properties and qualities

Slope: 0 to 3 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): High (1.98 to 5.95 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 3 percent
Landform: Kames, eskers, terraces, outwash plains
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ninigret

Percent of map unit: 2 percent
Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Agawam

Percent of map unit: 1 percent
Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Deerfield

Percent of map unit: 1 percent
Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Merrimac

Percent of map unit: 1 percent
Landform: Terraces, outwash plains, kames
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Windsor

Percent of map unit: 1 percent
Landform: Terraces, outwash plains, kames
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Walpole

Percent of map unit: 1 percent
Landform: Drainageways on terraces, depressions on terraces
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Hydric soil rating: Yes

SwA—Swansea muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2trl2
Elevation: 0 to 1,140 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Swansea and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swansea

Setting

Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loose sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 24 inches: muck
Oa2 - 24 to 34 inches: muck
Cg - 34 to 79 inches: coarse sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 16.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

UD—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lxj
Elevation: 0 to 670 feet
Mean annual precipitation: 44 to 50 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 120 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 70 percent
Urban land: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Human transported material

Typical profile

A - 0 to 12 inches: sandy loam
C1 - 12 to 25 inches: sandy loam
C2 - 25 to 60 inches: stratified sand to very gravelly coarse sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 42 to 54 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Hydrologic Soil Group: A
Ecological site: F149BY100NY - Urban Site Complex
Hydric soil rating: No

Description of Urban Land

Setting

Parent material: Human transported material

Typical profile

R - 0 to 6 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Quonset

Percent of map unit: 5 percent
Landform: Outwash plains, terraces, outwash terraces, eskers
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Terraces, outwash plains, kames
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 9lxl
Mean annual precipitation: 44 to 50 inches
Mean annual air temperature: 48 to 50 degrees F
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

WgA—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash plains, outwash terraces, deltas, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 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: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

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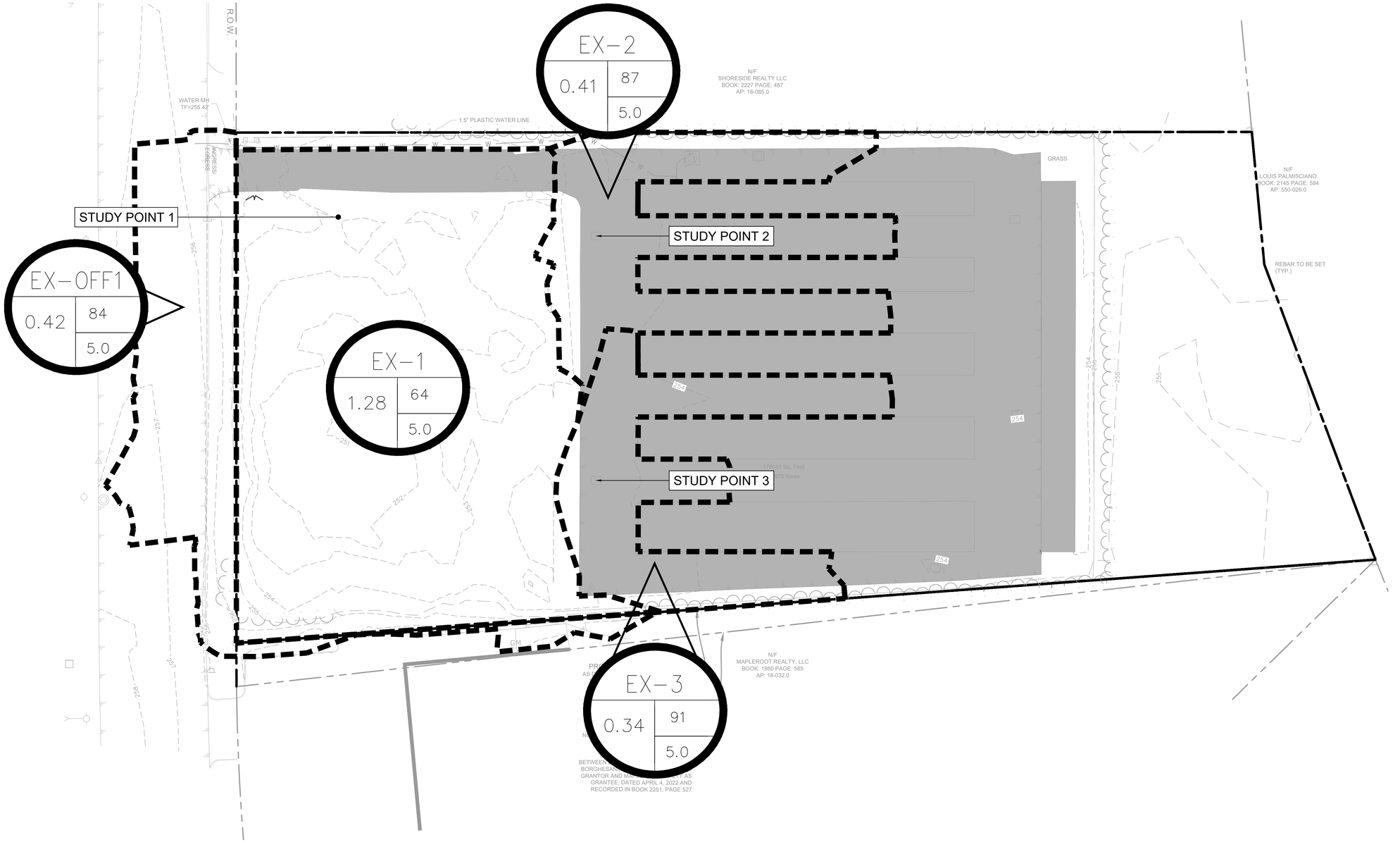
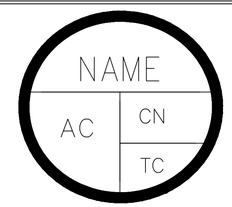
APPENDIX D – EXISTING AND PROPOSED DRAINAGE AREA EXHIBITS



LEGEND

- PROPERTY LINE
- 255 EXIST. CONTOUR
- 255 PROP. CONTOUR
- DRAINAGE BOUNDARY

LEGEND



IMPERVIOUS

No.	REVISIONS	DATE	BY

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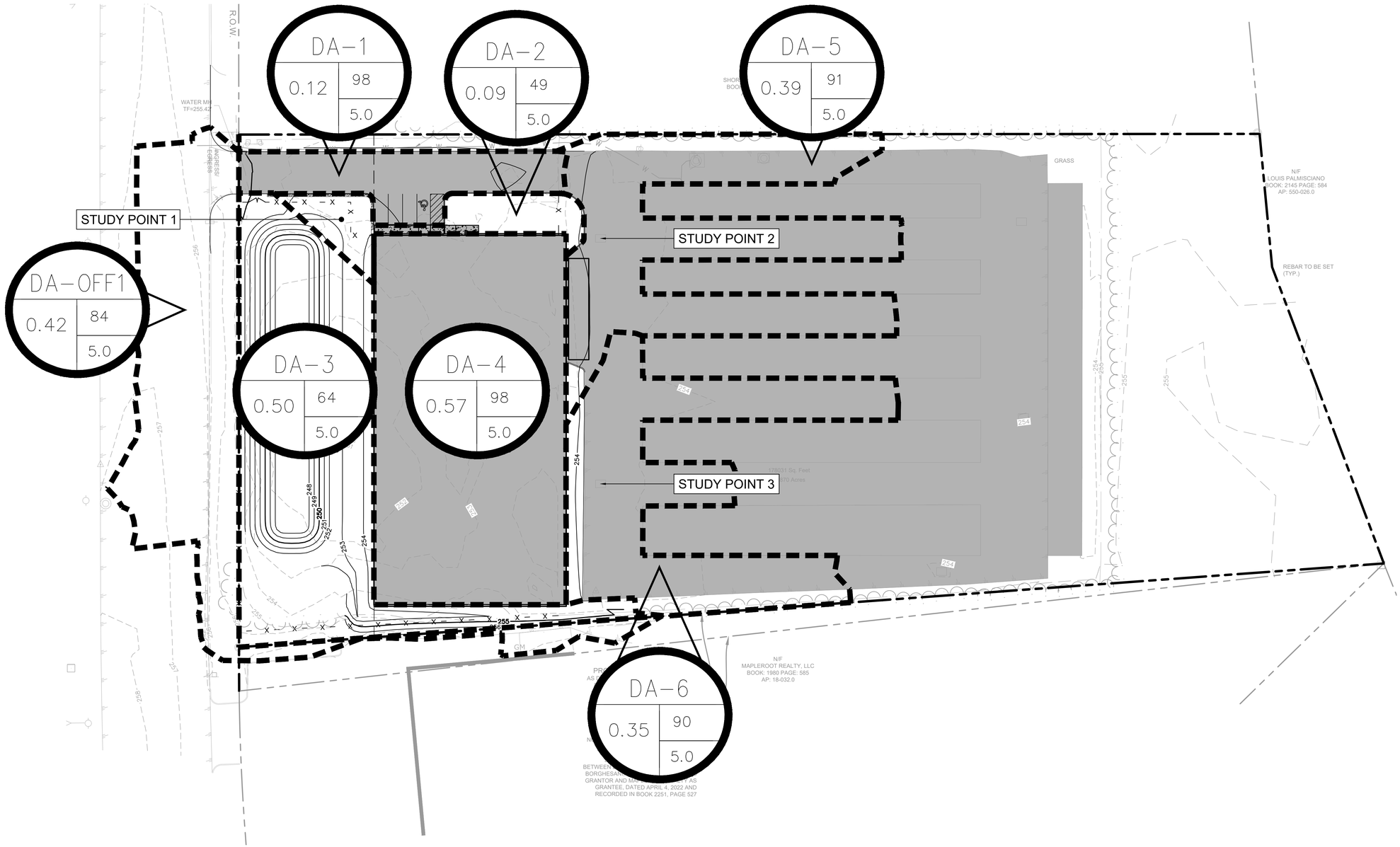
KHA PROJECT
112704000
DATE
09/15/2023
SCALE AS SHOWN
DESIGNED BY CAH
DRAWN BY RMO
CHECKED BY BB

PRE-CONSTRUCTION DRAINAGE AREAS

COVENTRY SELF STORAGE
PREPARED FOR
NOOSENECK HILL COVENTRY, LLC
1920 NOOSENECK HILL RD
COVENTRY, RI 02816
COVENTRY RHODE ISLAND

SHEET NUMBER
EX-1



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

- PROPERTY LINE
- EXIST. CONTOUR (255)
- PROP. CONTOUR (255)
- DRAINAGE BOUNDARY

LEGEND

NAME
AC
CN
TC

IMPERVIOUS

No.	REVISIONS	DATE	BY

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KHA PROJECT 112704000
DATE 09/15/2023
SCALE AS SHOWN
DESIGNED BY CAH
DRAWN BY RMO
CHECKED BY BB

POST-CONSTRUCTION DRAINAGE AREAS

COVENTRY SELF STORAGE

PREPARED FOR
NOOSENECK HILL COVENTRY, LLC
1920 NOOSENECK HILL RD
COVENTRY, RI 02816

COVENTRY RHODE ISLAND

SHEET NUMBER
EX-2