PHASE II SITE PLAN FOR ROUTE 208 & CHESTNUT DRIVE
VILLAGE OF SOUTH BLOOMING GROVE
ORANGE COUNTY, NEW YORK

STORMWATER POLLUTION PREVENTION PLAN

PREPARED FOR:

-YOEL WAGSCHAL
-VILLAGE OF SOUTH BLOOMING GROVE
-NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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1. INTRODUCTION

1.0.1 Project Description

The site is located off Old Town Road, in the Village of South Blooming Grove, Orange County, New York. Geographically, the site is located near the intersection of Strawberry Lane and Old Town Road. The tax map designation for the parcel is section 209, block 2, lot 2.

The portion of the site that is proposed for development is characterized by a northerly sloping topography that descends from the southern portion of the site. The topography on the site reflects the local surrounding topography. The highest elevations are found in the southerly portion of the site, with an elevation of approximately 519.0. The lowest elevation is near the center of the northern property line at an elevation of 488.0. The soils on the Property were identified using the soil classifications of the USDA Soil Conservation Service (SCS), Soil Survey of Orange County, New York. The site is underlain primarily by Erie (ErB) and Mardin (MdC) coils. The distribution of the soil types on the site is shown on the attached Pre & Post Development Maps.

There are no on-site wetlands located near the proposed development which consists of condominiums. The project will be served by municipal water and sewer. There will also be parking, driveways and refuse locations. Stormwater facilities are also proposed to attenuate post-development stormwater flows and provide water quality treatment.

1.0.2 Existing Drainage Patterns

Generally, the pre-development site conditions are best described as some existing impervious surfaces that have remained from previous uses, open grass fields and wooded areas. The overall site is 3.336 acres and approximately 3.035 acres of soil disturbance are associated with the new project.

The pre-development site runoff within the watershed drains to the two culverts that cross under NYS Rte. 208 along the northeastern portion of the site. Eight watersheds have been shown on the attached Pre-Development Analysis Map. The first 100 feet of runoff within the watershed is classified as sheet flow while the remaining distance the runoff travels has been classified as shallow concentrated flow.

1.0.3 Proposed Drainage Patterns

The proposed site was divided into eight major watersheds with several sub-catchments as shown on the Post Development Analysis Map. Most of the proposed impervious surface associated with the project will drain into the proposed stormwater management facilities and recharge back into the groundwater.

2. STORMWATER MANAGEMENT

2.0.1 General

The applicant is required to complete this Stormwater Pollution Prevention Plan (SWPPP) for the New York State DEC and the Village of South Blooming Grove. This plan must meet the requirements of NYS GP-0-20-001. Implementation of the proposed action would result in an increase of approximately 1.04 acres of impervious surface. Water quality as well as water quantity measures have been provided. In general, increased imperviousness can change the volume and rate of runoff as well as the amount of suspended or dissolved substances entering local streams along with runoff. In some cases, a change in the quantity of impervious surface can change the distribution of water in each area, affecting local water bodies, wetlands and associated fauna and flora.

The development of the site will create an increase in runoff volume and the potential for pollutant loading. However, the project design includes measures to reduce the level of pollutants in post-

development runoff in compliance with NYSDEC requirements. This will be achieved using infiltration practices. The post development runoff will be captured, treated, recharged, and attenuated.

2.0.2 Stormwater Quantity

A drainage analysis has been performed and a drainage report has been prepared to analyze the impact of stormwater runoff at the major Design Point on the property. This report is intended to address the drainage impacts as they only relate to the portions of the site where new construction is proposed. The impacts of the proposed development on existing drainage patterns were evaluated for both the pre and post development conditions, and areas where stormwater treatment, attenuation and recharge are provided have been analyzed.

Information and data to prepare this report was obtained from the following sources:

- Boundary & topographic information from Clearpoint Surveying, D.P.C.
- Site Plan Map as prepared by Arden Consulting Engineers
- The site soil information from Orange County Soil Conservation Service
- Site evaluations as carried out by personnel of Arden Consulting Engineers

The Soil Conservation Service TR-55 method was used to determine the pre-development and post-development runoff rates at the various design points identified on the property, which is illustrated on the attached drawings entitled Pre-Development Stormwater Analysis and Post Development Stormwater Analysis.

The drainage summary shown on the following tables outlines the runoff rates & volumes from the 1-, 10- and 100-year storm events in the pre-development without retention, and post-development with retention conditions, using a Type III storm distribution. The 24-hour rainfall values used for each storm occurrence are as follows:

1 year storm = 2.7 in.
10-year storm = 5.00 in.
100-year storm = 9.00 in.

Detail sheets for the engineered drainage system have been provided within the project site drawings. The Pre and Post Development Analysis Plan(s) have been prepared to illustrate existing drainage areas and how their configuration would change following construction on the site.

It is the overall goal of the stormwater management plan to provide proper drainage control on a quantity and quality basis. The plan has been prepared so there will be no negative effect on downstream properties with respect to quantity and quality issues.

Following the identification of the design points, analysis of the site runoff characteristics was performed. The hydrologic characteristics of the pre-development site conditions were modeled using HydroCAD computer software. The model analyzes watershed conditions and provides hydrograph generation and routing based on the Natural Resources Conservation Service (NRCS) Technical Release 55 (TR-55) procedures. These procedures consider the land cover and use on site, the underlying soils, the general topography and local rainfall distribution to model stormwater runoff volumes and flow rates resulting from the site.

As discussed earlier, the maximum future impervious surface on the site will increase and this increase will result in less infiltration and groundwater recharge and an increase in the rate and volume of runoff reaching the design points. The hydrologic characteristics of the post-development site conditions were modeled using HydroCAD, like the analysis for pre-development conditions. This model incorporated

the proposed construction as found in the Project Description and drainage patterns resulting primarily from the construction of the proposed buildings and parking areas.

2.0.3 Increase in Stormwater Runoff Rates

In general, development creates impervious surfaces and can also result in wooded areas that are cleared and replaced by lawn. This increases downstream stormwater runoff rates and volumes when attenuation of stormwater flows is not provided on-site.

The difference in the pre- & post-development rate of runoff is attenuated by the proposed infiltration practices, and the post-construction runoff rate from the site will be less than the pre-construction condition. This meets the standards of SPDES General Permit for Stormwater Discharges (GP-0-20-001).

Tables 1 that follow summarize the pre versus post development HydroCAD modeling results for the design points noted below where runoff leaves the site.

Table 1 **Pre-vs. Post-Development Runoff Rates (cfs)**		
Storm Frequency	Design Point 1 Pre	**Design Point** **1 Post**
1 year	3.17	**2.49**
10 year	9.22	**8.27**
100 year	20.65	**18.49**

3. STORMWATER QUALITY

3.1.1 Impervious Surfaces

As described above, the watersheds have been analyzed for the purpose of pre & post-development conditions. The impervious cover used in these calculations represents the land use as described and shown on the project plans.

The New York State DEC requires the use of "Unified Stormwater Sizing Criteria" to ensure that water quality, channel erosion reduction, overbank flood protection and safe conveyance of extreme storms is achieved (New York State Stormwater Management Design Manual, January 2015).

The proposed infiltration practices provide 100% of the required WQv which can be applied towards meeting the Runoff Reduction Volume (RRv). Table 2 & 3 below summarizes the Water Quality Volume and Runoff Reduction Volume for the proposed project.

Table 2 – Water Qaulity Volume (ft^3)	
WQV Required	WQV Provided
6,114	6,198

Table 3 – Runoff Reduction Volume (ft^3)	
Minimum RRv	RRV Provided
1,637	5,578

Without the use of stormwater quality management practices, the proposed development would result in an increase in the loadings of various chemical constituents to the receiving waters, potentially impairing the quality of those waters. Recognizing that the site is tributary to the wetlands previously noted, these increases would be unacceptable if not mitigated.

Runoff from impervious surfaces related to roadways and parking lots poses a potential increase in road and vehicle-related contaminants in the stormwater diverted to treatment basin. These include hydrocarbons derived primarily from crankcase oil drippings and un-combusted exhaust hydrocarbons. Furthermore, roadway runoff typically contains detectable levels of heavy and trace metal contaminants such as lead, zinc, copper, chromium, and nickel. These types of potential impacts require appropriate mitigation measures to limit impacts to existing water quality.

The stormwater management system for the proposed site is based on design criteria required to meet applicable standards through the incorporation of pretreatment chambers prior to conveyance into the subsurface retention/recharge facility. This report and the attached plans demonstrate that adequate area and conditions are available for the proper reduction of stormwater runoff volume and treatment of stormwater runoff.

The stormwater will be conveyed to the stormwater facilities for pretreatment and ultimate recharge to groundwater. The infiltration basins were designed to meet or exceed requirements of the NYSDEC for average runoff events. It is assumed that by meeting the water quality volume and runoff reduction volume requirements, a project will meet water quality objectives.

3.1.2 Sources of Pollutants

The New York State DEC lists several potential pollutants and their sources to be considered during site design. Nutrients, sediment, bacteria, and various other components can potentially contribute to the reduction of water quality and impacts to downstream receiving waters and habitat for water dependent species.

Many of these constituents, i.e., nitrogen, phosphorus, bacteria, and others, are expected to be accounted for in the capture and treatment of the water quality volume. The DEC guidelines have established that if the runoff from a 90% storm event from impervious surfaces is treated, the water quality goals of the State are met. A primary source of nutrients, i.e., the use of fertilizers, is discussed below.

Sediments are typically associated with runoff from un-stabilized sites or are the result of erosion in watercourses that cannot handle the velocity of stormwater flows. They can also result from the sanding of impervious surfaces during winter storm events. Un-stabilized sediments can be transported via storm flows to receiving wetlands and watercourses, altering the soil-water-air interface in wetlands, and burying established vegetation. The current proposal will utilize isolator rows for pretreatment and dry well sumps for sediment accumulation. These infiltration practices also provide retention/recharge to achieve water quality goals.

Trash and debris can be a nuisance associated with any site development. The stormwater flows will enter grated catch basins to minimize trash and debris entering the facility. Well maintained sites that receive approval and are monitored on a regular basis are not typically the source of significant amounts of trash and debris.

3.1.3 De-icing Materials

The Applicant proposes the use of salt as the primary winter road safety agent on proposed parking lot and sidewalks. Due to the potential for accumulation of sand in the stormwater management system, which will significantly reduce its ability to operate properly, traction sand is not a feasible alternative. Salt application rates will be dictated by the need to provide safe traveling conditions for the public and emergency vehicles, and by access drive and parking lot conditions. The application of salt will be minimized to the extent necessary to ensure that public safety is not compromised.

3.1.4 Design Guidance

The Applicant proposes Stormtech SC-800 Chambers and Dry Wells to provide water quality and quantity in accordance with SPDES General Permit (GP-0-20-001). The paragraphs below discuss the design guidance requirements associated with each technology.

Stormtech SC-800 Chambers

The Stormtech subsurface chamber allows the storage of large volumes of stormwater at reasonably shallow depths. The calculations shown in the Appendix include the volume within the chambers and stone voids (StormTech assumes a porosity of 40%). The systems were designed to treat the increase impervious surface associated with the proposed development.

The chambers are hydraulically connected via the manifold that connects to each row of chambers. The cross hatching at the inlet points to the bottom chambers represents a woven geotextile fabric, to be provided as scour protection. To provide pretreatment, the StormTech SC-800 Isolator Row has been proposed and is depicted as the hatched row in the project drawings. The isolator row is a single chamber row, wrapped in non-woven geo-synthetic fabric which filters out sediment, oils, and other impurities typically found in the runoff of initial stages of a rain event. ADS recommends that inspection ports only serve a purpose if they are installed on Isolator Rows, since the system is designed such that the majority of sediment should be trapped and stored in the Isolator Row until regular maintenance is performed. Since non-Isolator Rows do not experience sedimentation, there is no need for inspection ports.

The intent of this system is to meet the required WQv for the proposed project site and provide peak attenuation. This stormwater management system will control peak discharges and provide storage for attenuation of the 1, 10, and 100-year storms.

4. EROSION & SEDIMENT CONTROL

4.0.1 General

The SPDES General Permit (GP-0-20-001) for construction activities requires that an Erosion and Sediment Control Plan be developed. This plan has provided as part of the Site Plan and will be available at the project site during the time of construction. The plan will also comply with current regulations, including construction sequence, both short- and long-term maintenance of facilities, storage of materials and temporary and permanent structures.

The following temporary and permanent erosion control practices are proposed for use during construction and for long-term protection:

A. 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, sidewalk, or parking area. The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets. Stabilized construction entrances will be placed as shown on the Erosion and Sediment Control Plans.

B. Siltation Fence:

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil. The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment loads. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used (approximately one year). Silt fence will be placed as shown on the Erosion and Sediment Control Plans.

C. Sediment Basins:

A temporary barrier or dam constructed across a drainage way or at other suitable locations to intercept sediment laden runoff to trap and retain the sediment to reduce the amount of sediment leaving the disturbed area to protect drainage ways, properties, and rights-of-way below the sediment basin. Sediment basins are proposed below the area of development.

D. Storm Drain Inlet Protection:

A temporary, somewhat permeable barrier, installed around inlets in the form of a fence, berm, or excavation around an opening, trapping water and thereby reducing the sediment content of sediment laden water by settling. The purpose is to prevent heavily sediment laden water from entering a storm drain system through inlets. Inlet protection will only be used in road areas before the pavement is placed. Locations of inlet protection are shown on the Erosion and Sediment Control Plans.

E. Slope Stabilization Matting

Matting made synthetic or natural fibers that is placed on steep slopes to allow newly planted vegetation to take root and protect the slope from erosion before vegetation is fully established. Locations of slope stabilization matting are shown on the Erosion and Sediment Control Plans.

F. Rock Outlet Protection:

A section of rock protection placed at the outlet of the culverts, conduits, or channels. The purpose of the rock outlet protection is to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach. Rock outlet protection is proposed at all pipe discharge points. See the Erosion and Sediment Control Plans for locations of rock outlet protection.

4.0.2 Implementation Schedule & Maintenance

A. Schedule

As part of the development of the Erosion and Sediment Control Plans for the project, preparation of construction sequencing was completed to ensure water quality discharges are maintained during construction. The following construction schedule for implementing stormwater management during construction is proposed. Please refer to the Site Plan for specific sequencing and scheduling.
General Notes:

1. The owner or operator shall have a qualified inspector conduct at least one (1) site inspection every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed.

2. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased.
3. Temporary Stabilization means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats.

4. Final Stabilization means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

4.0.3 Construction Sequence:

1. File NOI & Pre-construction meeting: Before construction activities an evaluation of the site will be performed with the site contractor, Town personnel and site design engineer to discuss general construction procedures and sequencing. During this meeting sensitive areas of the property shall be delineated and marked out with orange construction fence (i.e.; trees, wetlands, wells, etc.).

2. Protect existing buffers: Place erosion control devices (silt fencing, diversion berms, etc.) upstream of any existing watercourse within or outside of construction areas, prior to the start of any construction.

3. Construction entrances/siltation controls: A temporary construction entrance will be installed at the site entrances as shown on the Site Plans. In addition, any other siltation control devices, as shown on the erosion control plan are to be installed adjacent to the temporary enhance and staging area.

4. Construction of temporary sediment traps/basins: Construction of the temporary sediment traps prior to the start of any major earthwork movement or site construction.

5. Strip topsoil: Topsoil will be stripped and stockpiled for later reuse.

6. Land grading: Bulk soil grading will commence. At this time, temporary stockpile areas should be utilized.

7. Retaining walls: Begin construction of on-site retaining walls. Walls to be installed concurrently with land grading.

8. Construction of buildings and driveway grading and subbase will begin upon completion of grading.

9. Utility installation: Install sanitary sewer, water, and stormwater. Inlet protection will be installed at all stormwater catch basins.

10. Stormwater installation: Install infiltration stormwater facilities when all contributing areas have been stabilized. Protect areas during and after construction until pavement is installed.

11. Pavement construction: Construct paved driveways, parking and access roads.

12. Upon completion of grading and retaining walls, construction of buildings and walkways will commence.

13. Landscaping and final stabilization: All open areas to be stabilized with topsoil and seeded as per the seeding schedule specified on the erosion and sediment control plans. Removal of all temporary measures, flushing/cleaning of all catch basins and pipe, and removal and disposal of all trapped sediment on site shall be completed.

14. Final site inspection and certification: At the end of construction a site evaluation of the site will be performed with site contractor, Town personnel, and site engineer to ensure that all stormwater facilities were constructed as per the SWPPP design and that the site has been stabilized. A Notice of Termination (NOT) will be submitted to the NYSDEC.

Please refer to the Erosion and Sediment Control Plans within the Site Plans for construction notes and seeding schedule for disturbance and final stabilization.

4.0.4 Pollution Prevention Measures:

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that conforms to all applicable Federal and State regulations that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well-organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

1. All vehicles, equipment, and petroleum product storage/dispensing areas will be observed regularly during site observations to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.

2. On-site fueling tanks and petroleum product storage containers shall include secondary containment.

3. Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.

4. To perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.

5. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident. Contaminated soil shall be removed from site and disposed of in accordance with all current Federal and State Regulations.

Chemical storage:

1. Any chemicals stored in the construction areas will conform to the appropriate manufacturer's recommendations and or the appropriate State/Federal Regulations. All chemicals shall have cover, containment, and protection provided on site, per all Federal and NYSDEC regulations.

2. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application procedures and rates shall be followed.

Demolition:

1. Dust released from demolished sidewalks, buildings, structures or on-site grading operations will be controlled using Dust Control measures as specified in the N.Y.S. Erosion and Sediment Control Specification Manual.
2. Storm drain inlets vulnerable to stormwater discharge carrying dust, soil, or debris will be protected using Storm Drain Inlet Protection.

3. Process water and slurry resulting from saw cutting and surfacing operations will be prevented from entering the waters of the State by implementing Saw cutting and Surfacing Pollution Prevention measures.

Concrete and grout:

1. Process water and slurry resulting from concrete work will be prevented from entering bodies of water by implementing Concrete Handling measures.

Sanitary wastewater:

1. Portable sanitation facilities will be firmly secured, regularly maintained, and emptied when necessary.

Solid Waste:

1. Solid waste will be stored in secure, clearly marked containers.

Litter/Trash:

1. Litter and Trash shall be cleaned and disposed of in secure clearly marked dumpsters or trash receptacles.

2. Site is to be cleaned daily of debris and disposed of daily.

Other:

Other BMPs will be administered as necessary to address any other additional pollutant sources on site.

4.0.5 OPERATION & MAINTENANCE (CONSTRUCTION/LONG-TERM)

The Contractor will be responsible for the maintenance and operation of all site related stormwater management facilities during construction and the property owner will be responsible for long-term maintenance and operation. A Stormwater Management Agreement can be found in Appendix G.

1. Construction and long-term maintenance shall be carried out in accordance with the following notes:

    a. Swales: Inspection shall be made weekly and after every ½" rainfall event during construction. During the first growing season inspections shall be conducted monthly, and on an annual basis thereafter. The following tasks shall be performed as needed:

        (1) Removal of accumulated sediment and cleaning and/or restoration whenever accumulated sediment reaches a volume of 50% of the available capacity.

        (2) Restoration of any eroded embankments. Infrequent reshaping of the swale line should be completed as needed.

        (3) Removal of accumulated debris/trash within the swale and at all inlet and outfall structures.

        (4) Seasonal mowing of the swale bottom and surrounding side slopes. Removal of any fallen trees or limbs. Replacement and/or restoration of proposed grasses shall occur if more than 50% of the coverage of the facility is not achieved. Grasses should be kept at a maximum height of 6"- 8".

    c. Roadway Pavements: Roadway pavements shall be swept on a regular basis to remove accumulated sediment. Collected sediment shall be removed, which will not allow the reentrance of silt into the storm water drainage system.

    d. Catch Basins: Catch basins shall be flushed and cleaned of any collected sediment within the bottom of the basin approximately every 4-5 years. Collected sediment shall be removed, which will not allow the reentrance of silt into the storm water drainage system.

    e. Vegetative Stabilization:

(1) All vegetative planting on areas that have been disturbed and are finish graded shall be inspected monthly during the first growing season and annually thereafter. Planting (or seeding) shall be maintained in viable conditions to stabilize the soil and to prevent soil erosion. Restore all site planting and/or seeding which has been damaged to a viable condition.

(2) If vegetative stabilization has been damaged from storm water erosion, correct upstream conditions that caused the erosion. Check dams may be required in drainage ways and stone outfall aprons may be required to be repaired on storm water outfall sites.

f. Temporary erosion and sediment control maintenance:

(1) All erosion and sediment control practices will be checked for stability and operation following every runoff-producing rainfall, but in no case less than once every week. Any needed repairs will be made immediately to maintain all practices as designed and installed for their appropriate phase of the project.

(2) Sediment will be removed from the sediment trap and inlet protection device when storage capacity has been approximately 50% filled.

5. SUMMARY

5.0.1 General

Drainage from the proposed impervious surfaces will be collected by sheet and pipe flow and conveyed to the stormwater management facility. The Soil Conservation Service TR-55 method has been utilized to evaluate the changes in stormwater runoff volume because of development of the site. The storm drainage system has been designed to collect and convey stormwater in a manner that would provide no increase in stormwater runoff rates downstream from the property. On-site retention and recharge of stormwater is necessary and has been provided to mitigate the increases in stormwater runoff rates and pollutants that would otherwise impact downstream conditions.

The construction activity on the site will therefore not alter existing drainage patterns. The proposed erosion and sediment practices will prevent the erosion and sediment deposits to downstream properties.

APPENDIX A

Map Scale: 1:1,430 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, New York
Survey Area Data: Version 25, Aug 25, 2024

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

Date(s) aerial images were photographed: May 31, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ErB	Erie gravelly silt loam, 3 to 8 percent slopes	3.1	80.3%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	0.6	14.6%
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes	0.2	5.1%
Totals for Area of Interest		**3.8**	**100.0%**

Table 8: Soil hydrologic groups for New York soils.

HG = hydrologic group. For soils with a hydrologic group that consists of more than one letter (e.g. "A/B", "B/C", "C/D"), its hydrologic group is determined by the presence or absence of adequate artificial drainage. If the field is artificially drained the hydrologic group moves to the first of the two classes. If the field is inadequately drained or not drained at all, the second of the two classes is assigned.

Soil Type	HG
Acton	C
Adams	A
Adirondack	D
Adjidaumo	D
Adrian	A/D
Agawam	B
Albia	C
Albrights	C
Alden	D
Allagash	B
Allard	B
Allendale	D
Allis	D
Alluvial Land	C
Almond	C
Alps	C
Altmar	B
Alton	A
Amboy	C
Amenia	B
Angola	C
Appleton	C
Arkport	B
Armagh	D
Arnot	C/D
Ashville	D
Atherton	B
Atkins	D
Atsion	C
Au Gres	B
Aurelie	D
Aurora	C

Soil Type	HG
Barbour	B
Barcelona	C
Barre	D
Bash	C
Basher	B
Bath	C
Becket	C
Becraft	B
Belgrade	B
Benson	D
Berkshire	B
Bernardston	C
Berrien	C
Berryland	B
Beseman	A
Bice	B
Biddeford	D
Birdsall	D
Blasdell	A
Bombay	B
Bonaparte	A
Bono	D
Boots	A
Borosaprists	A/D
Boynton	D
Braceville	C
Brayton	C
Bridge-hampton	B
Bridport	D
Briggs	A
Brinkerton	D

Soil Type	HG
Broadalbin	C
Brockport	D
Brookfield	B
Buckland	C
Bucksport	D
Budd	B
Burdett	C
Burnham	D
Busti	C
Buxton	C
Cambria	D
Cambridge	C
Camillus	B
Camroden	C
Canaan	C
Canaan-Rock Outcrop	C
Canadice	D
Canandaigua	D
Canaseraga	C
Canastota	C
Caneadea	D
Canfield	C
Canton	B
Carbondale	A
Carlisle	A/D
Carrollton	C
Carver	A
Carver-Plymouth	A
Castile	B
Cathro	A

Soil Type	HG
Cathro-Greenwood	A
Cattaraugus	C
Cavode	C
Cayuga	C
Cazenovia	B
Ceresco	B
Chadakoin	B
Chagrin	B
Champlain	A
Charles	C
Charlton	B
Chatfield (E)	B
Chatfield (WE)	B
Chaumont	D
Chautauqua	C
Cheektowaga	D
Chenango	A
Cheshire	B
Chippeny	D
Chippewa	D
Churchville	D
Cicero	C
Clarkson	B
Claverack	C
Clymer	B
Cohoctah	B
Collamer	C
Colonie	A
Colosse	A
Colrain	A
Colton	A

Soil Type	HG
Colwood	D
Conesus	B
Conotton	A
Constable	A
Cook	D
Copake	B
Cornish	C
Cosad	C
Cossayuna	C
Covert	A
Coveytown	C
Covington	D
Crary	C
Croghan	B
Culvers	C
Dalbo	C
Dalton	C
Danley	C
Dannemora	D
Darien	C
Dawson	A
Deerfield	B
Deford	A
Dekalb	A
Depeyster	C
Deposit	B
Derb	C
Dixmont	C
Dorval	A
Dover	B
Duane	B
Dunkirk	B
Dutchess	B
Duxbury	A
Edwards	B
Eel	B
Eelweir	C
Elka	C
Ellery	D
Elmridge	C
Elmwood	C
Elnora	B

Soil Type	HG
Empeyville	C
Enfield	B
Ensley	B
Erie	C
Ernest	C
Essex	C
Fahey	B
Farmington	C
Farnham	C
Fernlake	A
Flackville	C
Fonda	D
Franklinville	B
Fredon	C
Freetown	D
Fremont	C
Frenchtown	D
Frewsburg	C
Fryeburg	B
Fulton	D
Gage	D
Galen	B
Galestown	A
Galoo	C
Galoo-Rock Outcrop	C
Galway	B
Genesee	B
Georgia	C
Getzville	D
Gilpen	C
Gilpin	C
Glebe	C
Glebe-Saddleback	C
Glendora	A/D
Glenfield	B
Gloucester	A
Glover	D
Gougeville	A
Granby	A/D
Grattan	A

Soil Type	HG
Greene	C
Greenwood	A
Grenville	B
Gretor	C
Groton	A
Groveton	A
Guff	D
Guffin	D
Gulf	B
Hadley	B
Haights	B
Haights-Gulf	B
Hailesboro	C
Halcott	C/D
Halsey	C/D
Hamlin	B
Hamplain	B
Hannawa	D
Hartland	B
Haven	B
Hawksnest	C/D
Hempstead	B
Henrietta	B
Herkimer	B
Hermon	A
Hero	B
Heuvelton	C
Hilton	B
Hinckley	A
Hinesburg	C
Hogansburg	B
Hogback	C
Hogback-Ricker	C
Holderton	B
Hollis	C
Holly	C/D
Holyoke	C
Holyoke-Rock Outcrop	C
Homer	B
Honeoye	B

Soil Type	HG
Hoosic	A
Hornell	D
Hornellsville	D
Houghtonville	C
Houghtonville-Rawson	C
Houseville	C
Howard	A
Hudson	C
Hulberton	C
Ilion	D
Insula	B
Ipswich	D
Ira	C
Ischua	B
Ivory	C
Jebavy	A
Joliet	D
Junius	C
Kalurah	B
Kanona	D
Kars	A
Kearsarge	B
Kendaia	C
Kibbie	B
Kingsbury	D
Kinzua	B
Knicker-bocker	A
Lackawanna	C
Lagross	A
Lagross-Haights	A
Lairdsville	D
Lakemont	D
Lakewood	A
Lamson	B/D
Lanesboro	C
Langford	C
Lansing	B
Leck Kill	B
Leicester	C

Soil Type	HG
Leon	C
Lewbath	C
Lewbeach	C
Leyden	C
Lima	B
Limerick	C
Linden	B
Linlithgo	B
Livingston	D
Lobdell	B
Lockport	D
Lorain	D
Lordstown	C
Lovewell	B
Lowville	B
Loxley	A
Lucas	C
Ludlow	C
Lupton	A
Lyman	C
Lyman-Becket-Berkshire	C
Lyme	C
Lyons	D
Machias	B
Macomber	C
Macomber-Taconic	C
Madalin	D
Madawaska	B
Madrid	B
Malone	C
Manahawkin	D
Mandy	C
Manheim	C
Manhoning	D
Manlius	C
Mansfield	D
Maplecrest	B
Marcy	D
Mardin	C

Soil Type	HG
Marilla	C
Markey	A/D
Marlow	C
Martisco	B
Massena	C
Matoon	D
Matunuck	D
Medihemists	A/D
Medina	B
Medomak	D
Melrose	C
Menlo	D
Mentor	B
Merrimac	A
Middlebrook	C
Middlebrook-Mongaup	C
Middlebury	B
Millis	C
Millsite	C
Mineola	A
Miner	D
Mino	C
Minoa	C
Mohawk	B
Moira	C
Monadnock	B
Monarda	D
Mongaup	C
Montauk	C
Mooers	B
Morocco	C
Morris	C
Mosherville	C
Muck	D
Muck-Peat	D
Mundal	C
Mundalite	C
Mundalite-Rawsonville	C
Munson	D
Munuscong	B

Soil Type	HG
Muskego	A/C
Muskellunge	D
Napoleon	A
Napoli	C
Nassau	C
Naumburg	C
Nehasne	B
Nellis	B
Neversink	D
Newfane	B
Newstead	C
Newton	A/D
Niagara	C
Nicholville	C
Ninigret	B
Norchip	D
Norwell	C
Norwich	D
Nunda	C
Oakville	A
Occum	B
Odessa	D
Ogdensburg	C
Olean	B
Ondawa	B
Oneida	C
Onoville	C
Ontario	B
Onteora	C
Ontusia	C
Oquaga	C
Oramel	C
Organic	A/D
Orpark	C
Orwell	D
Ossipee	D
Otego	B
Otisville	A
Ottawa	A
Ovid	C
Palatine	B
Palms	A/D

Soil Type	HG
Palmyra	B
Panton	D
Papakating	D
Parishville	C
Parsippany	D
Patchin	D
Pawcatuck	D
Pawling	B
Paxton	C
Peacham	D
Peat	A/D
Peat-Muck	A/D
Peru	C
Petoskey	A
Phelps	B
Philo	B
Pillsbury	C
Pinckney	C
Pipestone	B
Pittsfield	B
Pittstown	C
Plainbo	A
Plainfield	A
Plessis	D
Plymouth	A
Podunk	B
Poland	B
Pompton	B
Pootatuck	B
Pope	B
Potsdam	C
Poygan	D
Punsit	C
Pyrities	B
Quetico	D
Quetico-Rock Outcrop	D
Raquette	B
Rawsonville	C
Rawsonville-Beseman-Rayne	C
	B

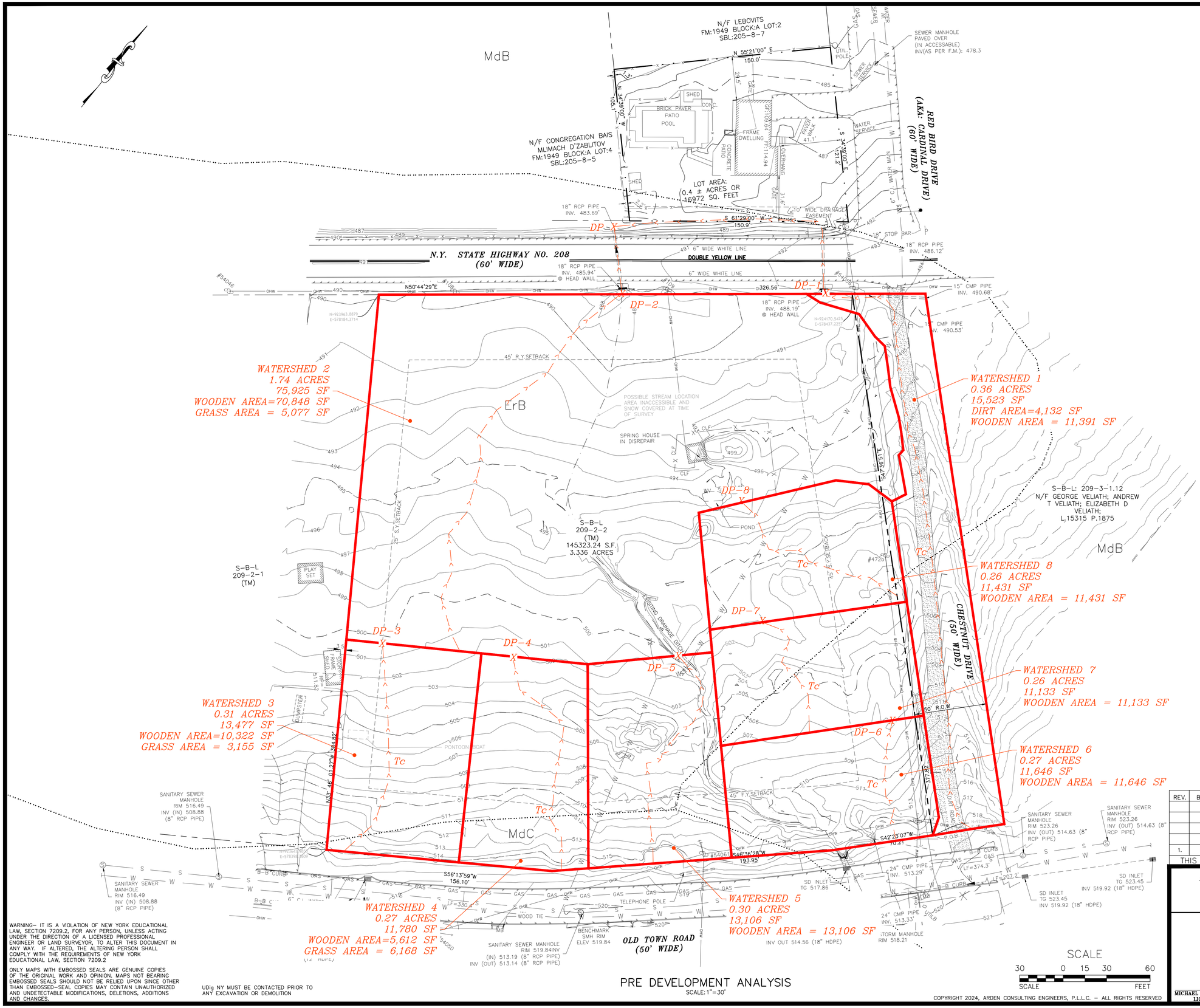
Soil Type	HG
Raynham	C
Raypol	C
Red Hook	C
Redwater	B
Remsen	D
Retsof	C
Rexford	C
Rhinebeck	D
Ricker	A
Ricker-Lyman	A
Ridgebury	C
Rifle	A
Riga	D
Rippowam	C
Riverhead	B
Rockaway	C
Romulus	D
Ross	B
Roundabout	C
Rumney	C
Runeberg	C
Ruse	D
Rushford	B
Saco	D
Salamanca	B
Salmon	B
Saprists	A/D
Saugatuck	C
Scantic	D
Scarboro	D
Schoharie	C
Schroon	B
Schuyler	B
Scio	B
Scituate	B
Scriba	C
Searsport	D
Shaker	C
Shoreham	D

Soil Type	HG
Sisk	C
Skerry	C
Sloan	B
Sodus	C
Somerset	C
St Johns	D
Staatsburg	C
Stafford	C
Steamburg	B
Stetson	B
Stissing	C
Stockbridge	C
Stockholm	C
Stowe	B
Sudbury	B
Suffield	B
Summerville	D
Sun	D
Sunapee	B
Suncook	A
Suny	D
Surplus	C
Surplus-Sisk	C
Sutton	B
Swanton	C
Swartswood	C
Swormville	C
Taconic	C
Taconic-Macomber	C
Tawas	A
Teel	B
Tioga	B
Toledo	D
Tonawanda	D
Tor	D
Torull	D
Towerville	B
Trestle	B

Soil Type	HG
Trout River	A
Troy	C
Trumbull	D
Tughill	D
Tuller	D
Tunbridge	C
Tunbridge-Adirondack	C
Tunkhannock	A
Turin	C
Tuscarora	C
Unadilla	B
Valois	B
Varick	D
Varysburg	B
Venango	C
Vergennes	C
Vly	C
Volusia	C
Waddington	A
Wainola	B
Wakeland	C
Wakeville	B
Wallace	B
Wallington	C
Wallkill	C
Walpole	C
Walton	C
Wampsville	B
Wappinger	B
Wareham	C
Warners	C
Wassaic	B
Watchaug	B
Waumbeck	B
Wayland	C/D
Weaver	C
Wegatchie	D
Wellsboro	C

Soil Type	HG
Wenonah	C
Westbury	B
Westland	C
Wethersfield	C
Wharton	C
Whately	D
Whippany	C
Whitelaw	B
Whitman	D
Wilbraham	C
Willdin	C
Willette	A
Williamson	C
Willowemoc	C
Wilmington	D
Wilpoint	D
Windsor	A
Winooski	B
Wolcottsburg	D
Wonsqueak	D
Woodbridge	C
Woodlawn	B
Woodstock	D
Woodstock-Rock Outcrop	D
Wooster	C
Woostern	C
Woostern-Bath-Valois	C
Worden	C
Worth	C
Wurtsboro	C
Wyalusing	D
Yalesville	C
Yorkshire	C

APPENDIX B



LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING CHAIN LINK FENCE
- EXISTING BUILDING
- EXISTING DEPRESSED CURB
- EXISTING OVERHEAD LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING SEWER LINE
- EXISTING DRAINAGE PIPE
- EXISTING STORM MANHOLE
- EXISTING POLE
- EXISTING SIGN
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING MAIL BOX
- EXISTING INLET
- EXISTING GUY WIRE
- EXISTING UTILITY BOX
- EXISTING WATER VALVE

TREE CLEARING NOTE:

NO TREES SHALL BE REMOVED FROM APRIL 1st TO OCTOBER 31st TO MITIGATE POTENTIAL HARMFUL IMPACTS TO INDIANA BAT.

REV.	BY	DATE	DESCRIPTION
1.	MM	08-23-24	PRELIMINARY PLAN PREPARATION

THIS SHEET IS NOT VALID WITHOUT ALL OF THE SHEETS THAT COMPRISE THE SET

ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114
WWW.ARDENCONSULTING.NET

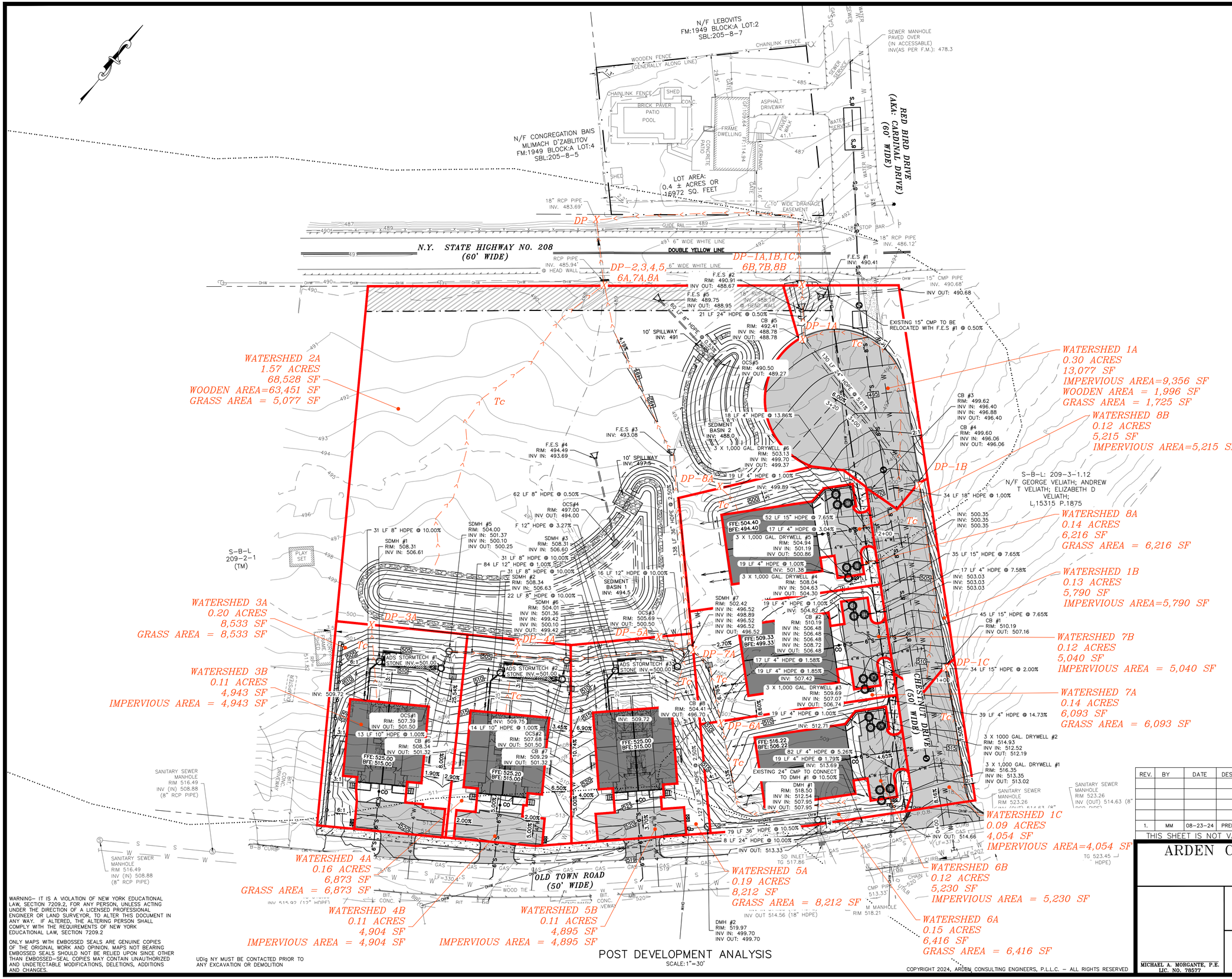
PHASE II SITE PLAN FOR
ROUTE 208 & CHESTNUT DRIVE
VILLAGE OF SOUTH BLOOMING GROVE
COUNTY OF ORANGE, NEW YORK

PRE DEVELOPMENT ANALYSIS

SCALE: 1"=30'

JOB#: 24-010
SCALE: AS NOTED
DATE: 08-08-24
DRAWN: MM
CHECKED: MM
SHEET NO. 01 of 01

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577



LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING CHAIN LINK FENCE
- EXISTING BUILDING
- EXISTING DEPRESSED CURB
- EXISTING OVERHEAD LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING SEWER LINE
- EXISTING DRAINAGE PIPE
- EXISTING STORM MANHOLE
- EXISTING POLE
- EXISTING SIGN
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING MAIL BOX
- EXISTING INLET
- EXISTING GUY WIRE
- EXISTING UTILITY BOX
- EXISTING WATER VALVE
- PROPOSED PAVEMENT
- PROPOSED SIDEWALK
- PROPOSED WALL
- PROPOSED MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- PROPOSED SWALE
- PROPOSED RPZ DRAIN TO DAYLIGHT
- PROPOSED ROOF & FOOTING DRAIN TO DAYLIGHT
- PROPOSED 4" D.I.P WATER SERVICE
- PROPOSED 6" SDR35 SEWER LATERAL
- PROPOSED 8" SDR35 SEWER MAIN
- PROPOSED SPLIT RAIL FENCE
- PROPOSED WATER MAIN RELOCATION
- PROPOSED DRAINAGE PIPE
- PROPOSED FLARED END SECTION
- PROPOSED SEWER MANHOLE
- PROPOSED DRY WELL RISER AND CAST IRON SOLID ACCESS LIDS
- PROPOSED DRY WELL W/ FRAME AND GRATE LID

SCALE
30 0 15 30 60
SCALE FEET

TREE CLEARING NOTE:
NO TREES SHALL BE REMOVED FROM APRIL 1st TO OCTOBER 31st TO MITIGATE POTENTIAL HARMFUL IMPACTS TO INDIANA BAT.

REV.	BY	DATE	DESCRIPTION
1.	MM	08-23-24	PRELIMINARY PLAN PREPARATION

THIS SHEET IS NOT VALID WITHOUT ALL OF THE SHEETS THAT COMPRISE THE SET

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PHASE II SITE PLAN FOR
ROUTE 208 & CHESTNUT DRIVE
VILLAGE OF SOUTH BLOOMING GROVE
COUNTY OF ORANGE, NEW YORK

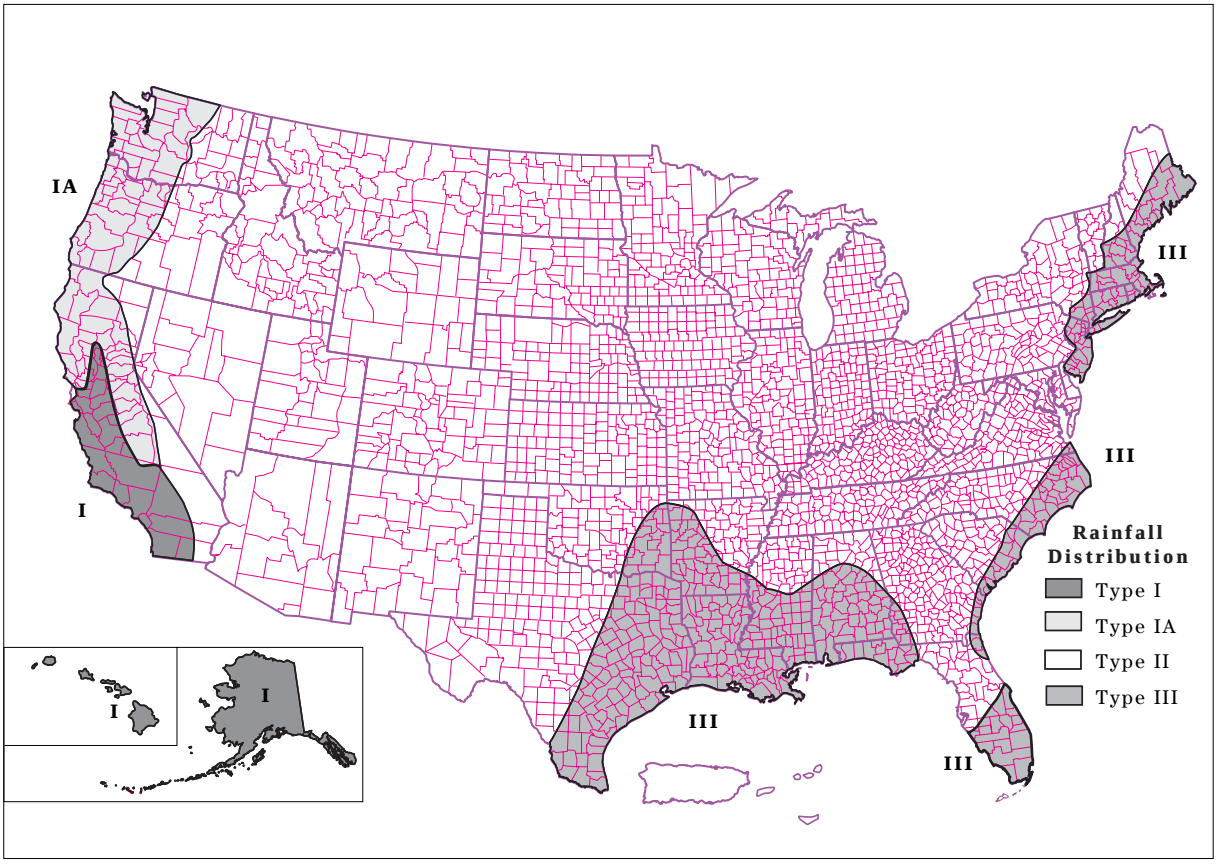
POST DEVELOPMENT ANALYSIS

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

JOB#: 24-010
SCALE: AS NOTED
DATE: 08-08-24
DRAWN: MM
CHECKED: MM
SHEET NO. 02 of 08

POST DEVELOPMENT ANALYSIS
SCALE: 1"=30'

Figure B-2 Approximate geographic boundaries for NRCS (SCS) rainfall distributions



Rainfall data sources

This section lists the most current 24-hour rainfall data published by the National Weather Service (NWS) for various parts of the country. Because NWS Technical Paper 40 (TP-40) is out of print, the 24-hour rainfall maps for areas east of the 105th meridian are included here as figures B-3 through B-8. For the area generally west of the 105th meridian, TP-40 has been superseded by NOAA Atlas 2, the Precipitation-Frequency Atlas of the Western United States, published by the National Ocean and Atmospheric Administration.

East of 105th meridian

Hershfield, D.M. 1961. Rainfall frequency atlas of the United States for durations from 30 minutes to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 40. Washington, DC. 155 p.

West of 105th meridian

Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-frequency atlas of the Western United States. Vol. I Montana; Vol. II, Wyoming; Vol III, Colorado; Vol. IV, New Mexico; Vol V, Idaho; Vol. VI, Utah; Vol. VII, Nevada; Vol. VIII, Arizona; Vol. IX, Washington; Vol. X, Oregon; Vol. XI, California. U.S. Dept. of Commerce, National Weather Service, NOAA Atlas 2. Silver Spring, MD.

Alaska

Miller, John F. 1963. Probable maximum precipitation and rainfall-frequency data for Alaska for areas to 400 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. of Commerce, Weather Bur. Tech. Pap. No. 47. Washington, DC. 69 p.

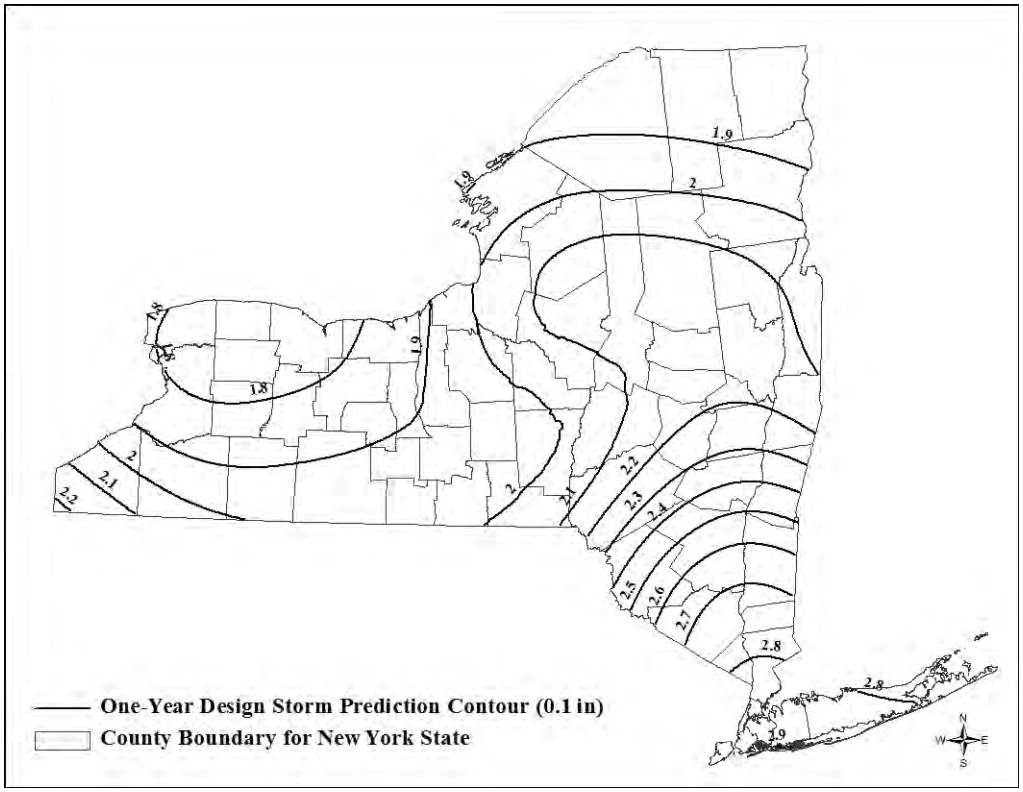
Hawaii

Weather Bureau. 1962. Rainfall-frequency atlas of the Hawaiian Islands for areas to 200 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 43. Washington, DC. 60 p.

Puerto Rico and Virgin Islands

Weather Bureau. 1961. Generalized estimates of probable maximum precipitation and rainfall-frequency data for Puerto Rico and Virgin Islands for areas to 400 square miles, durations to 24 hours, and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 42. Washington, DC. 94 P.

Figure 4.2: One-Year Design Storm in New York State (NYSDEC, 2013)



Section 4.5 Overbank Flood Control Criteria (Q_p)

The primary purpose of the overbank flood control sizing criterion is to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development (i.e., flow events that exceed the bankfull capacity of the channel, and therefore must spill over into the floodplain).

Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Q_p) to predevelopment rates.

The overbank flood control requirement (Q_p) does not apply in certain conditions, including:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams. Refer to Section 4.3 for instructions.
- A downstream analysis reveals that overbank control is not needed (see section 4.10).

Basis for Design of Overbank Flood Control

When addressing the overbank flooding design criteria, the following represent the minimum basis for design:

- TR-55 and TR-20 (or approved equivalent) will be used to determine peak discharge rates.

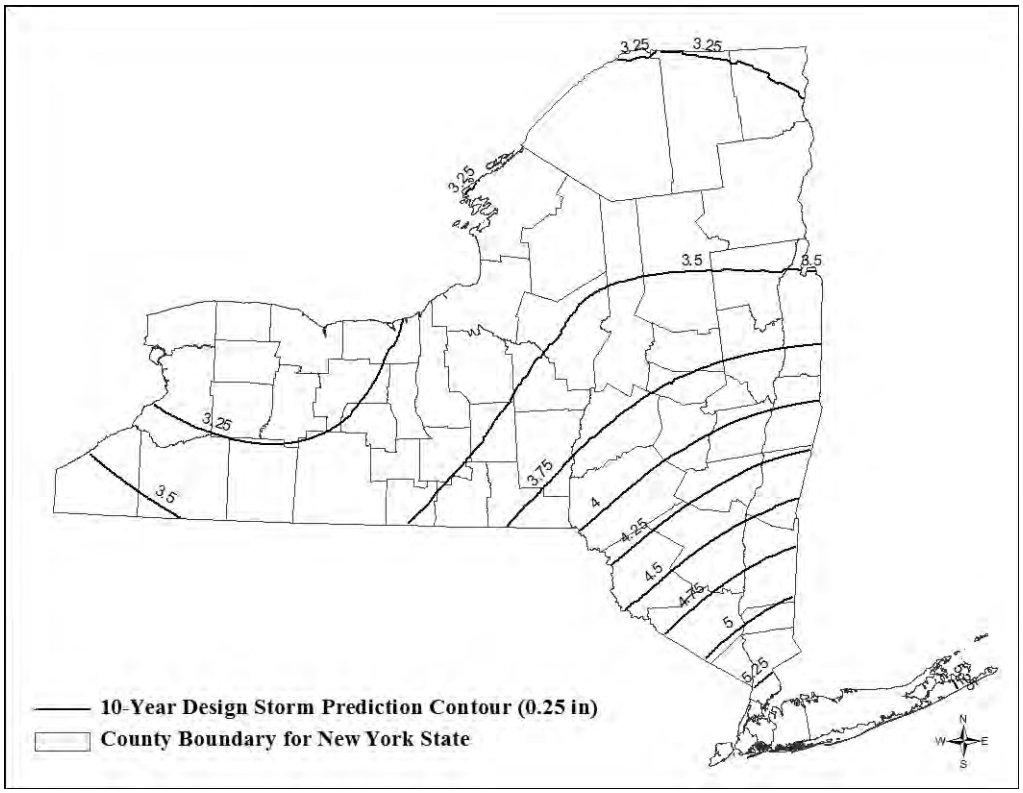
- When the predevelopment land use is agriculture, the curve number for the pre-developed condition shall be “taken as meadow”.

- Off-site areas should be modeled as "present condition" for the 10-year storm event.

- Figure 4.3 indicates the depth of rainfall (24 hour) associated with the 10-year storm event throughout the State of New York.

- The length of overland flow used in t_c calculations is limited to no more than 150 feet for predevelopment conditions and 100 feet for post development conditions. On areas of extremely flat terrain (<1% average slope), this maximum distance is extended to 250 feet for predevelopment conditions and 150 feet for post development conditions.

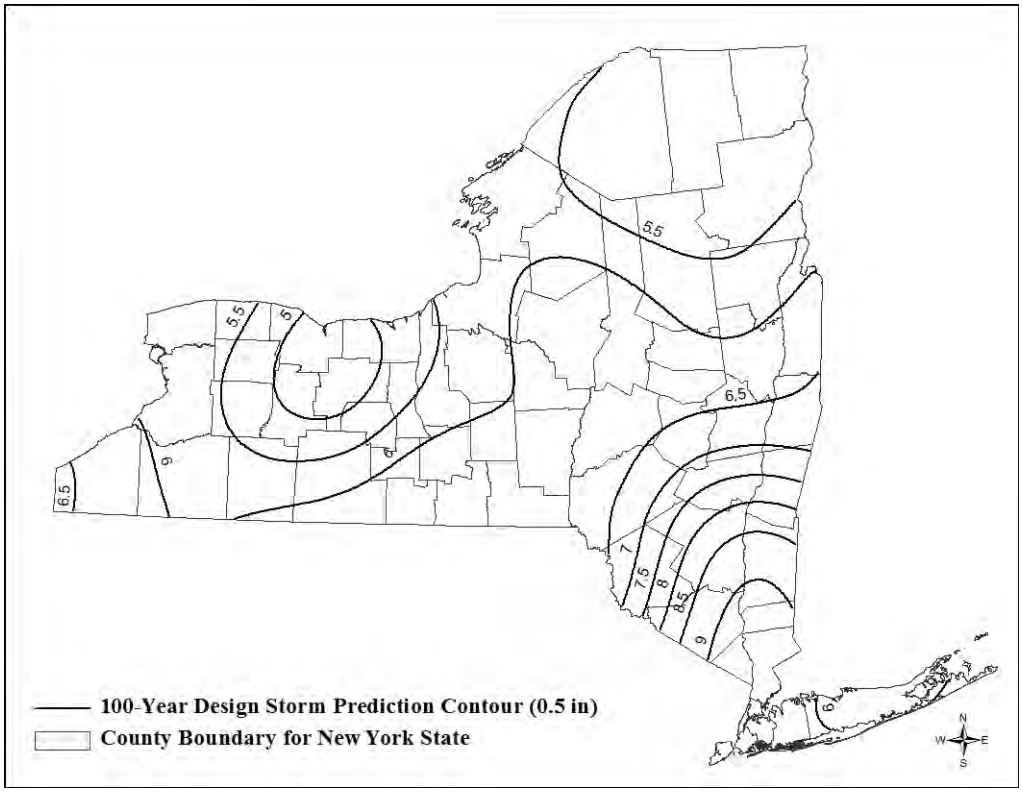
Figure 4.3: Ten-Year Design Storm in New York State (NYSDEC, 2013)



- When determining the storage required to reduce 100-year flood peaks, model off-site areas under current conditions.

- When determining storage required to safely pass the 100-year flood, model off-site areas under ultimate conditions.

Figure 4.4: One Hundred-Year Design Storm in New York State (NYSDEC, 2013)



Section 4.7 Alternative Method

New development causes changes to runoff volume, flow rates, timing of runoff and, most importantly, habitat destruction and degradation of the physical and chemical quality of the receiving waterbody. Traditionally, event based design storms are used for evaluation of hydrology and sizing of stormwater management practices. With an increasing need for assessment of the long term effects of development and maintenance of pre-development hydrology, the necessity of continuous simulation modeling as an effective tool for analysis and evaluation of flow-duration, downstream quality, quantity, biological, and hydro-habitat sustainability has been acknowledged.

Version 1.8
Last Updated: 11/09/2015

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	No

Design Point:	1	
P=	1.40	*inch*

Manually enter P, Total Area and Impervious Cover.

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	3.72	1.13	30%	0.32	6,114	
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	3.72	1.13	30%	0.32	**6,114**	**Subtotal 1**
Total	3.72	1.13	30%	0.32	**6,114**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

Technique	Total Contributing Area *(Acre)*	Contributing Impervious Area *(Acre)*	Notes
Conservation of Natural Areas	0.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to 150 feet*
Filter Strips	0.00	0.00	
Tree Planting	0.00	0.00	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**0.00**	**0.00**	

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	3.72	1.13	30%	0.32	6,114
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	**3.72**	**1.13**	30%	0.32	6,114
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	3.72	1.13	30%	0.32	**6,114**
WQv reduced by Area Reduction techniques					0

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C	3.72	30%
D		20%
Total Area	3.72	
Calculate the Minimum RRv		
S =	**0.30**	
Impervious =	1.13	*acre*
Precipitation	1.4	*in*
Rv	0.95	
Minimum RRv	**1,637**	***ft3***
	0.04	af

Routing Diagram for PRE&POST 2024-11-12-ADS
Prepared by A2Z Civil Engineers, Printed 11/13/2024

Project Notes

Rainfall events imported from "Pallotti-South-POST REV 2023-02-24.hcp"

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-year	Type III 24-hr		Default	24.00	1	2.70	2
2	10-year	Type III 24-hr		Default	24.00	1	5.00	2
3	100-year	Type III 24-hr		Default	24.00	1	9.00	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.142	86	<50% Grass cover, Poor, HSG C (PRE-WS4)
1.245	74	>75% Grass cover, Good, HSG C (POST-WS1, POST-WS2, POST-WS3A, POST-WS4A, POST-WS5A, POST-WS6A, POST-WS7A, POST-WS8A, PRE-WS2)
0.095	87	Dirt roads, HSG C (PRE-WS1)
0.072	86	Pasture/grassland/range, Poor, HSG C (PRE-WS3)
0.796	98	Paved parking, HSG C (POST-WS1, POST-WS1B, POST-WS1C, POST-WS6B-1, POST-WS6B-2, POST-WS7B-1, POST-WS7B-2, POST-WS8B-1, POST-WS8B-2)
0.338	98	Paved roads w/curbs & sewers, HSG C (POST-WS3B-1, POST-WS4B-1, POST-WS5B-1)
3.039	76	Woods/grass comb., Fair, HSG C (POST-WS2, PRE-WS2)
0.046	72	Woods/grass comb., Good, HSG C (POST-WS1)
1.714	82	Woods/grass comb., Poor, HSG C (PRE-WS1, PRE-WS3, PRE-WS4, PRE-WS5, PRE-WS6, PRE-WS7, PRE-WS8)
7.487	**81**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
7.487	HSG C	POST-WS1, POST-WS1B, POST-WS1C, POST-WS2, POST-WS3A, POST-WS3B-1, POST-WS4A, POST-WS4B-1, POST-WS5A, POST-WS5B-1, POST-WS6A, POST-WS6B-1, POST-WS6B-2, POST-WS7A, POST-WS7B-1, POST-WS7B-2, POST-WS8A, POST-WS8B-1, POST-WS8B-2, PRE-WS1, PRE-WS2, PRE-WS3, PRE-WS4, PRE-WS5, PRE-WS6, PRE-WS7, PRE-WS8
0.000	HSG D	
0.000	Other	
7.487		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.142	0.000	0.000	0.142	<50% Grass cover, Poor	PRE-WS4
0.000	0.000	1.245	0.000	0.000	1.245	>75% Grass cover, Good	POST-WS1, POST-WS2, POST-WS3A, POST-WS4A, POST-WS5A, POST-WS6A, POST-WS7A, POST-WS8A, PRE-

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.095	0.000	0.000	0.095	Dirt roads	PRE-WS1
0.000	0.000	0.072	0.000	0.000	0.072	Pasture/grassland/range, Poor	PRE-WS3
0.000	0.000	0.796	0.000	0.000	0.796	Paved parking	POST-WS1, POST-WS1B, POST-WS1C, POST-WS6B-1, POST-WS6B-2, POST-WS7B-1, POST-WS7B-2

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.338	0.000	0.000	0.338	Paved roads w/curbs & sewers	POST-WS3B-1, POST-WS4B-1, POST-WS5B-1
0.000	0.000	3.039	0.000	0.000	3.039	Woods/grass comb., Fair	POST-WS2, PRE-WS2
0.000	0.000	0.046	0.000	0.000	0.046	Woods/grass comb., Good	POST-WS1
0.000	0.000	1.714	0.000	0.000	1.714	Woods/grass comb., Poor	PRE-WS1, PRE-WS3, PRE-WS4, PR

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	**0.000**	**7.487**	**0.000**	**0.000**	**7.487**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	ADS-#1	501.50	501.37	13.0	0.0100	0.012	0.0	10.0	0.0	
2	ADS-#2	501.50	501.36	13.8	0.0101	0.012	0.0	10.0	0.0	
3	ADS-#3	500.50	499.07	21.0	0.0681	0.012	0.0	10.0	0.0	
4	CB-#1	507.16	506.48	34.0	0.0200	0.013	0.0	15.0	0.0	
5	CB-#2	506.48	496.40	132.0	0.0764	0.013	0.0	15.0	0.0	
6	CB-#3	496.40	496.06	34.0	0.0100	0.013	0.0	18.0	0.0	
7	CB-#4	496.06	488.78	130.0	0.0560	0.013	0.0	24.0	0.0	
8	CB-#5	488.78	488.67	21.0	0.0052	0.013	0.0	24.0	0.0	
9	DW-#1	513.02	506.48	82.0	0.0798	0.012	0.0	4.0	0.0	
10	DW-#2	512.19	506.48	39.0	0.1464	0.012	0.0	4.0	0.0	
11	DW-#3	506.74	506.48	17.0	0.0153	0.012	0.0	4.0	0.0	
12	DW-#4	504.30	503.03	17.0	0.0747	0.012	0.0	4.0	0.0	
13	DW-#5	500.86	500.35	17.0	0.0300	0.012	0.0	4.0	0.0	
14	DW-#6	499.37	496.88	13.9	0.1791	0.012	0.0	4.0	0.0	
15	SDMH #5	500.25	499.42	84.0	0.0099	0.012	0.0	12.0	0.0	
16	SDMH #6	499.42	496.52	89.0	0.0326	0.012	0.0	12.0	0.0	
17	SDMH #7	496.52	493.08	138.0	0.0249	0.012	0.0	36.0	0.0	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment POST-WS1: POST-WS1A Runoff Area=13,077 sf 71.55% Impervious Runoff Depth>1.79"
Flow Length=212' Tc=6.0 min CN=91 Runoff=0.63 cfs 0.045 af

Subcatchment POST-WS1B: POST-WS1B Runoff Area=5,790 sf 100.00% Impervious Runoff Depth>2.47"
Flow Length=212' Tc=6.0 min CN=98 Runoff=0.35 cfs 0.027 af

Subcatchment POST-WS1C: POST-WS1C Runoff Area=4,054 sf 100.00% Impervious Runoff Depth>2.47"
Flow Length=98' Slope=0.0750 '/' Tc=6.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment POST-WS2: POST-WS2 Runoff Area=66,602 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=297' Tc=17.3 min CN=76 Runoff=0.97 cfs 0.104 af

Subcatchment POST-WS3A: POST-WS3A Runoff Area=8,533 sf 0.00% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=74 Runoff=0.15 cfs 0.012 af

Subcatchment POST-WS3B-1: POST-WS3B Runoff Area=4,943 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.30 cfs 0.023 af

Subcatchment POST-WS4A: POST-WS4A Runoff Area=6,873 sf 0.00% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=74 Runoff=0.12 cfs 0.010 af

Subcatchment POST-WS4B-1: Runoff Area=4,904 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment POST-WS5A: POST-WS5A Runoff Area=8,212 sf 0.00% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=74 Runoff=0.14 cfs 0.011 af

Subcatchment POST-WS5B-1: Runoff Area=4,895 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment POST-WS6A: POST-WS6A Runoff Area=6,416 sf 0.00% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=74 Runoff=0.11 cfs 0.009 af

Subcatchment POST-WS6B-1: Runoff Area=2,615 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment POST-WS6B-2: Runoff Area=2,615 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment POST-WS7A: POST-WS7A Runoff Area=6,093 sf 0.00% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=74 Runoff=0.11 cfs 0.008 af

Subcatchment POST-WS7B-1: Runoff Area=2,520 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment POST-WS7B-2: Runoff Area=2,520 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment POST-WS8A: POST-WS8A Runoff Area=6,216 sf 0.00% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=74 Runoff=0.11 cfs 0.009 af

Subcatchment POST-WS8B-1: Runoff Area=2,608 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment POST-WS8B-2: Runoff Area=2,608 sf 100.00% Impervious Runoff Depth>2.47"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment PRE-WS1: PRE-WS1 Runoff Area=15,523 sf 0.00% Impervious Runoff Depth>1.21"
Flow Length=415' Tc=6.0 min CN=83 Runoff=0.50 cfs 0.036 af

Subcatchment PRE-WS2: PRE-WS2 Runoff Area=75,925 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=297' Tc=17.3 min CN=76 Runoff=1.11 cfs 0.118 af

Subcatchment PRE-WS3: PRE-WS3 Runoff Area=13,477 sf 0.00% Impervious Runoff Depth>1.21"
Flow Length=149' Tc=9.7 min CN=83 Runoff=0.38 cfs 0.031 af

Subcatchment PRE-WS4: PRE-WS4 Runoff Area=11,780 sf 0.00% Impervious Runoff Depth>1.27"
Flow Length=166' Tc=12.2 min CN=84 Runoff=0.33 cfs 0.029 af

Subcatchment PRE-WS5: PRE-WS5 Runoff Area=13,106 sf 0.00% Impervious Runoff Depth>1.14"
Flow Length=165' Tc=10.3 min CN=82 Runoff=0.34 cfs 0.029 af

Subcatchment PRE-WS6: PRE-WS6 Runoff Area=11,646 sf 0.00% Impervious Runoff Depth>1.14"
Flow Length=78' Slope=0.1350 '/' Tc=8.5 min CN=82 Runoff=0.33 cfs 0.026 af

Subcatchment PRE-WS7: PRE-WS7 Runoff Area=11,133 sf 0.00% Impervious Runoff Depth>1.14"
Flow Length=87' Slope=0.0700 '/' Tc=12.0 min CN=82 Runoff=0.28 cfs 0.024 af

Subcatchment PRE-WS8: PRE-WS8 Runoff Area=11,431 sf 0.00% Impervious Runoff Depth>1.14"
Flow Length=135' Tc=13.8 min CN=82 Runoff=0.27 cfs 0.025 af

Reach POST: POST Inflow=2.49 cfs 0.265 af
Outflow=2.49 cfs 0.265 af

Reach PRE: PRE Inflow=3.17 cfs 0.317 af
Outflow=3.17 cfs 0.317 af

Pond ADS-#1: ADS-#1 Peak Elev=502.22' Storage=307 cf Inflow=0.30 cfs 0.023 af
Discarded=0.02 cfs 0.019 af Primary=0.08 cfs 0.004 af Outflow=0.10 cfs 0.023 af

Pond ADS-#2: ADS-#2 Peak Elev=502.21' Storage=305 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.019 af Primary=0.07 cfs 0.004 af Outflow=0.10 cfs 0.023 af

Pond ADS-#3: ADS-#3 Peak Elev=501.21' Storage=304 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.019 af Primary=0.07 cfs 0.004 af Outflow=0.09 cfs 0.023 af

Pond CB-#1: CB-#1 Peak Elev=507.38' Inflow=0.24 cfs 0.019 af
15.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=0.24 cfs 0.019 af

Pond CB-#2: CB-#2 Peak Elev=506.70' Inflow=0.24 cfs 0.019 af
15.0" Round Culvert n=0.013 L=132.0' S=0.0764 '/' Outflow=0.24 cfs 0.019 af

Pond CB-#3: CB-#3 Peak Elev=496.75' Inflow=0.59 cfs 0.046 af
18.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=0.59 cfs 0.046 af

Pond CB-#4: CB-#4 Peak Elev=496.37' Inflow=0.59 cfs 0.046 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0560 '/' Outflow=0.59 cfs 0.046 af

Pond CB-#5: CB-#5 Peak Elev=489.32' Inflow=1.21 cfs 0.091 af
24.0" Round Culvert n=0.013 L=21.0' S=0.0052 '/' Outflow=1.21 cfs 0.091 af

Pond DW-#1: DW-#1 Peak Elev=511.84' Storage=150 cf Inflow=0.16 cfs 0.012 af
Discarded=0.03 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.012 af

Pond DW-#2: DW-#2 Peak Elev=511.01' Storage=150 cf Inflow=0.16 cfs 0.012 af
Discarded=0.03 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.012 af

Pond DW-#3: DW-#3 Peak Elev=506.65' Storage=219 cf Inflow=0.15 cfs 0.012 af
Discarded=0.01 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.012 af

Pond DW-#4: DW-#4 Peak Elev=503.11' Storage=145 cf Inflow=0.15 cfs 0.012 af
Discarded=0.03 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.012 af

Pond DW-#5: DW-#5 Peak Elev=499.69' Storage=153 cf Inflow=0.16 cfs 0.012 af
Discarded=0.03 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.012 af

Pond DW-#6: DW-#6 Peak Elev=498.19' Storage=151 cf Inflow=0.16 cfs 0.012 af
Discarded=0.03 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.012 af

Pond SDMH #5: SDMH #5 Peak Elev=500.38' Inflow=0.08 cfs 0.004 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0099 '/' Outflow=0.08 cfs 0.004 af

Pond SDMH #6: SDMH #6 Peak Elev=499.61' Inflow=0.15 cfs 0.008 af
12.0" Round Culvert n=0.012 L=89.0' S=0.0326 '/' Outflow=0.15 cfs 0.008 af

Pond SDMH #7: SDMH #7 Peak Elev=496.66' Inflow=0.15 cfs 0.008 af
36.0" Round Culvert n=0.012 L=138.0' S=0.0249 '/' Outflow=0.15 cfs 0.008 af

Total Runoff Area = 7.487 ac Runoff Volume = 0.714 af Average Runoff Depth = 1.14"
84.84% Pervious = 6.352 ac 15.16% Impervious = 1.135 ac

Summary for Subcatchment POST-WS1: POST-WS1A

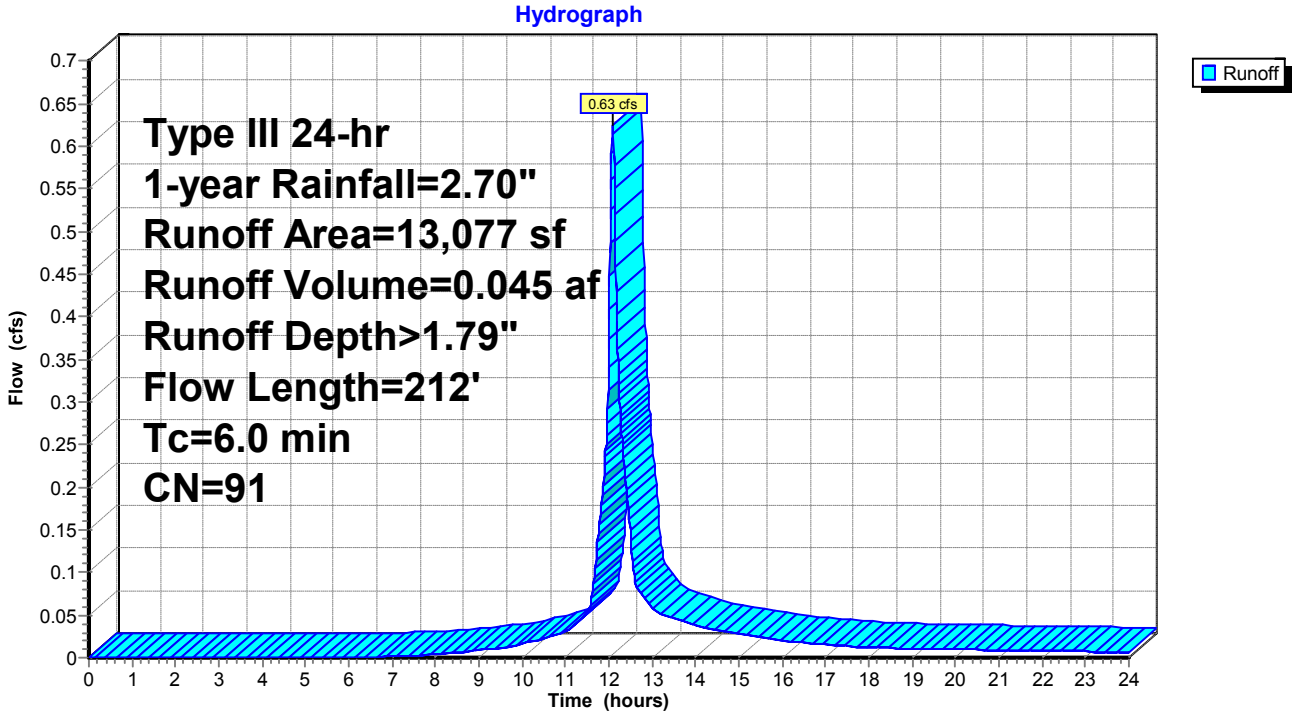
Runoff = 0.63 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 1.79"
Routed to Pond CB-#5 : CB-#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
9,356	98	Paved parking, HSG C
1,996	72	Woods/grass comb., Good, HSG C
1,725	74	>75% Grass cover, Good, HSG C
13,077	91	Weighted Average
3,721		28.45% Pervious Area
9,356		71.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0698	2.20		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	112	0.0253	2.56		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.5	212	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1: POST-WS1A



Summary for Subcatchment POST-WS1B: POST-WS1B

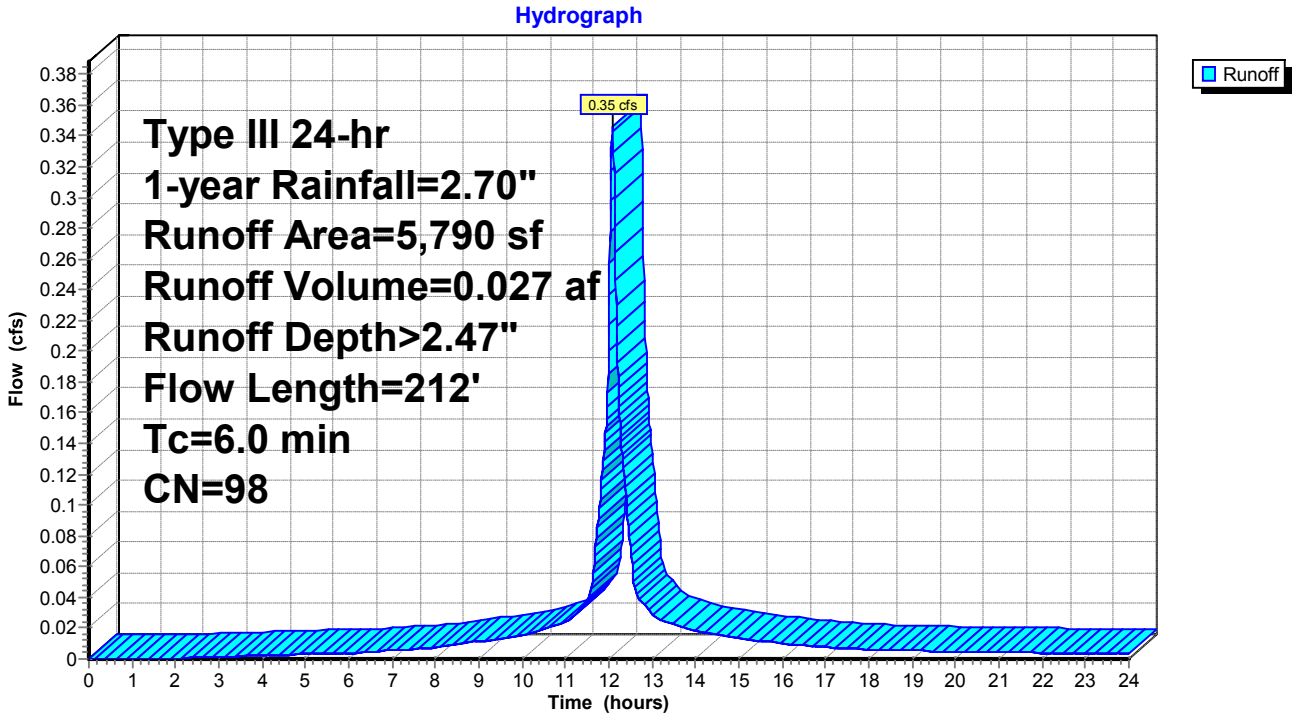
Runoff = 0.35 cfs @ 12.08 hrs, Volume= 0.027 af, Depth> 2.47"
Routed to Pond CB-#3 : CB-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
5,790	98	Paved parking, HSG C
5,790		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0842	2.37		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	112	0.0760	4.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.1	212	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1B: POST-WS1B



Summary for Subcatchment POST-WS1C: POST-WS1C

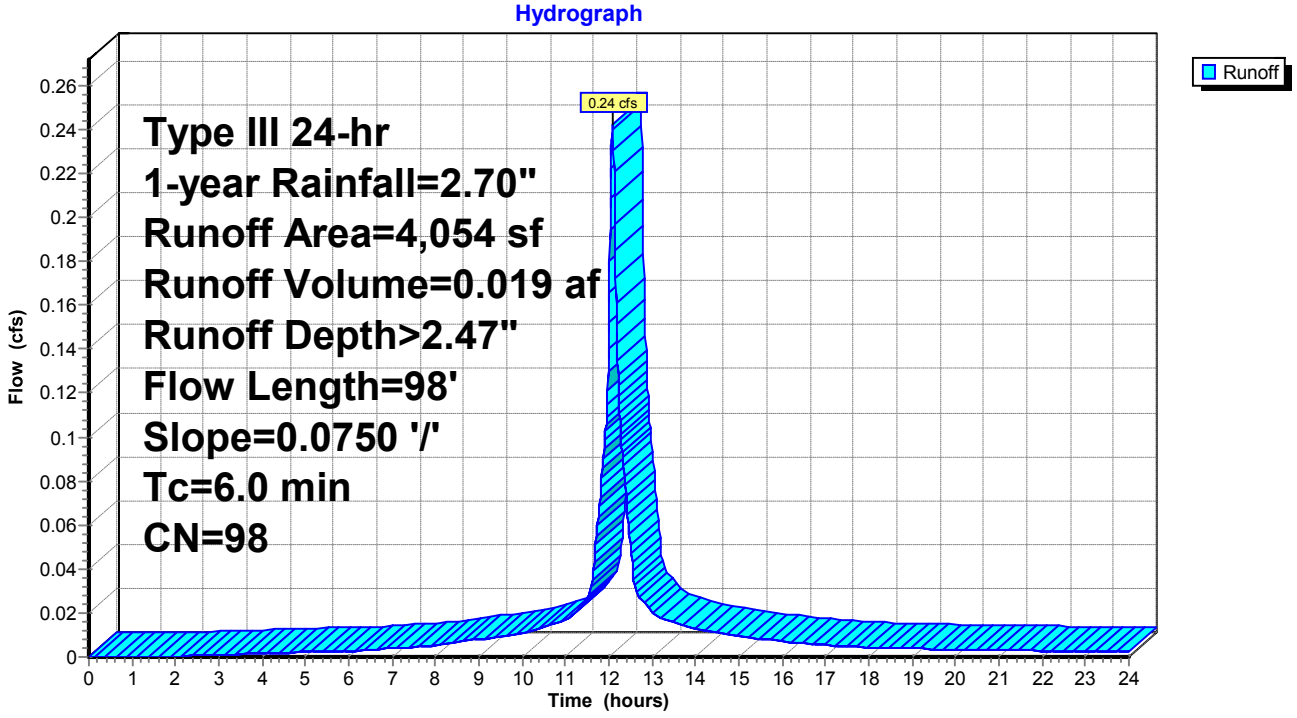
Runoff = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af, Depth> 2.47"
Routed to Pond CB-#1 : CB-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
4,054	98	Paved parking, HSG C
4,054		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	98	0.0750	2.25		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	98	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1C: POST-WS1C



Summary for Subcatchment POST-WS2: POST-WS2

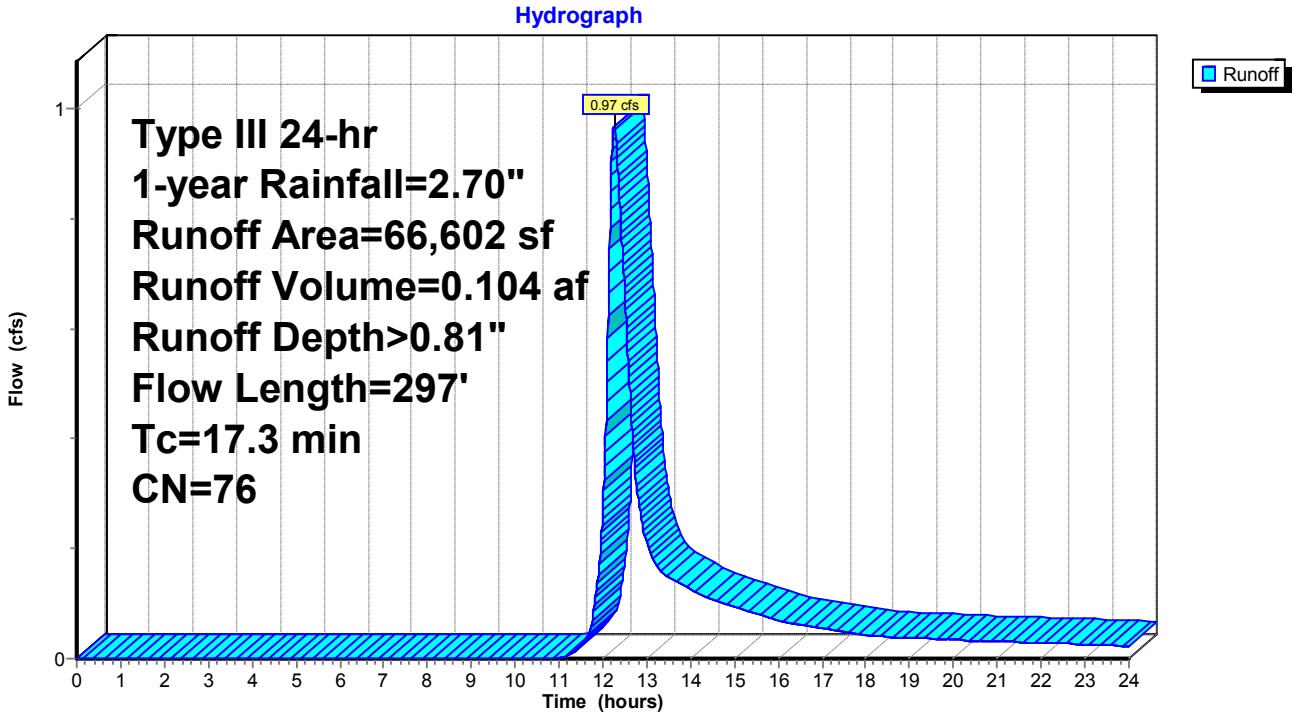
Runoff = 0.97 cfs @ 12.26 hrs, Volume= 0.104 af, Depth> 0.81"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
61,525	76	Woods/grass comb., Fair, HSG C
5,077	74	>75% Grass cover, Good, HSG C
66,602	76	Weighted Average
66,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0600	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
3.0	197	0.0480	1.10		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.3	297	Total			

Subcatchment POST-WS2: POST-WS2



Summary for Subcatchment POST-WS3A: POST-WS3A

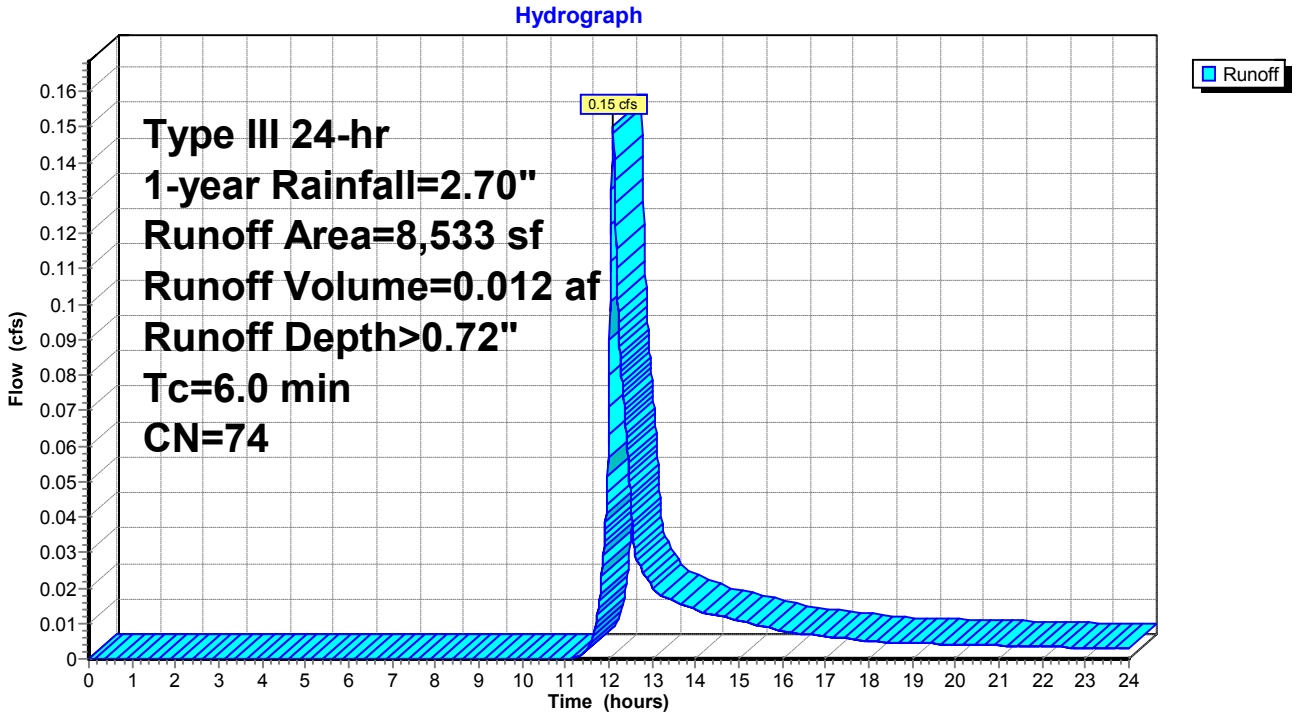
Runoff = 0.15 cfs @ 12.10 hrs, Volume= 0.012 af, Depth> 0.72"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
8,533	74	>75% Grass cover, Good, HSG C
8,533		100.00% Pervious Area

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

Subcatchment POST-WS3A: POST-WS3A



Summary for Subcatchment POST-WS3B-1: POST-WS3B

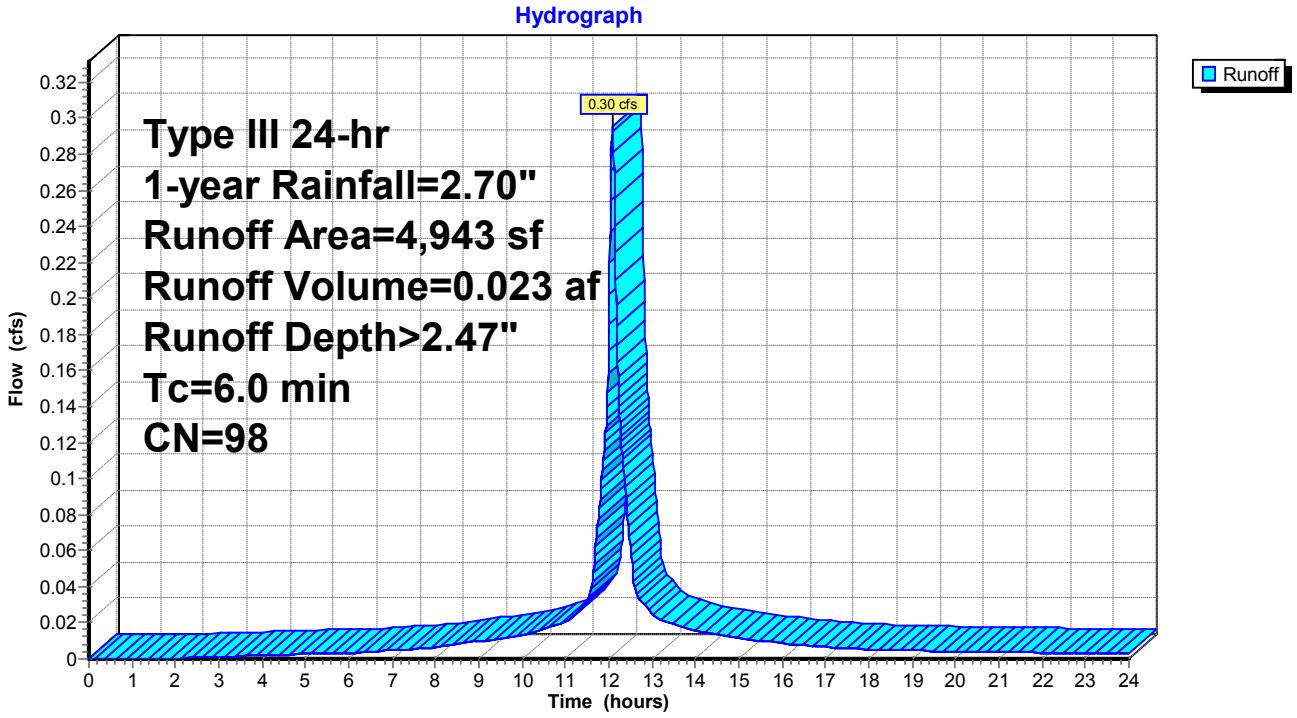
Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 2.47"
Routed to Pond ADS-#1 : ADS-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
4,943	98	Paved roads w/curbs & sewers, HSG C
4,943		100.00% Impervious Area

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

Subcatchment POST-WS3B-1: POST-WS3B



Summary for Subcatchment POST-WS4A: POST-WS4A

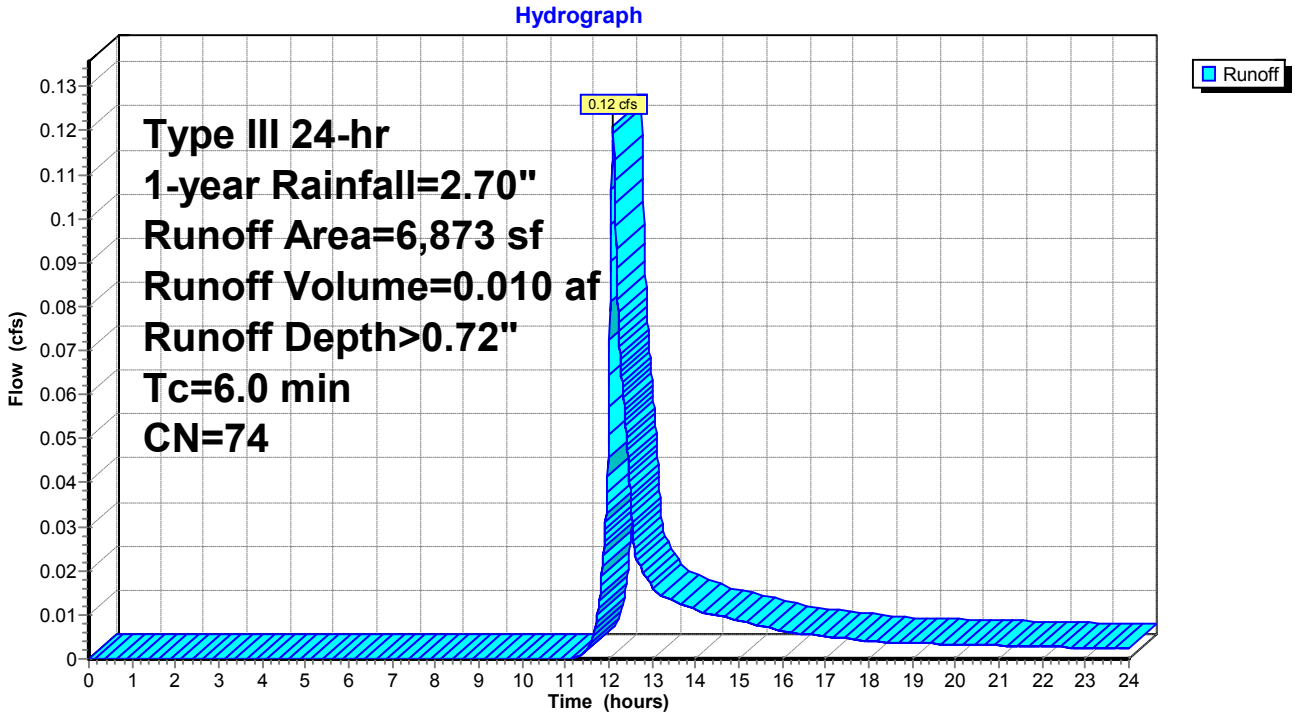
Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af, Depth> 0.72"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
6,873	74	>75% Grass cover, Good, HSG C
6,873		100.00% Pervious Area

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

Subcatchment POST-WS4A: POST-WS4A



Summary for Subcatchment POST-WS4B-1: POST-WS4B-1

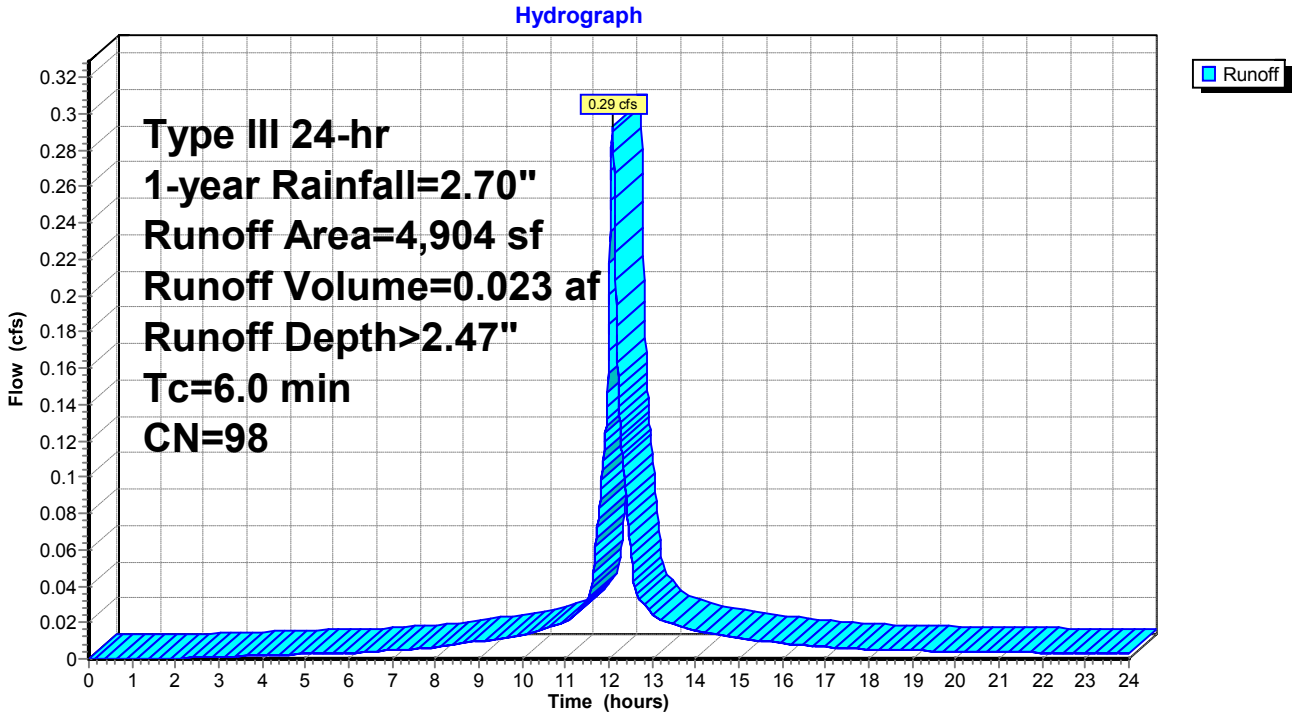
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 2.47"
Routed to Pond ADS-#2 : ADS-#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
4,904	98	Paved roads w/curbs & sewers, HSG C
4,904		100.00% Impervious Area

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

Subcatchment POST-WS4B-1: POST-WS4B-1



Summary for Subcatchment POST-WS5A: POST-WS5A

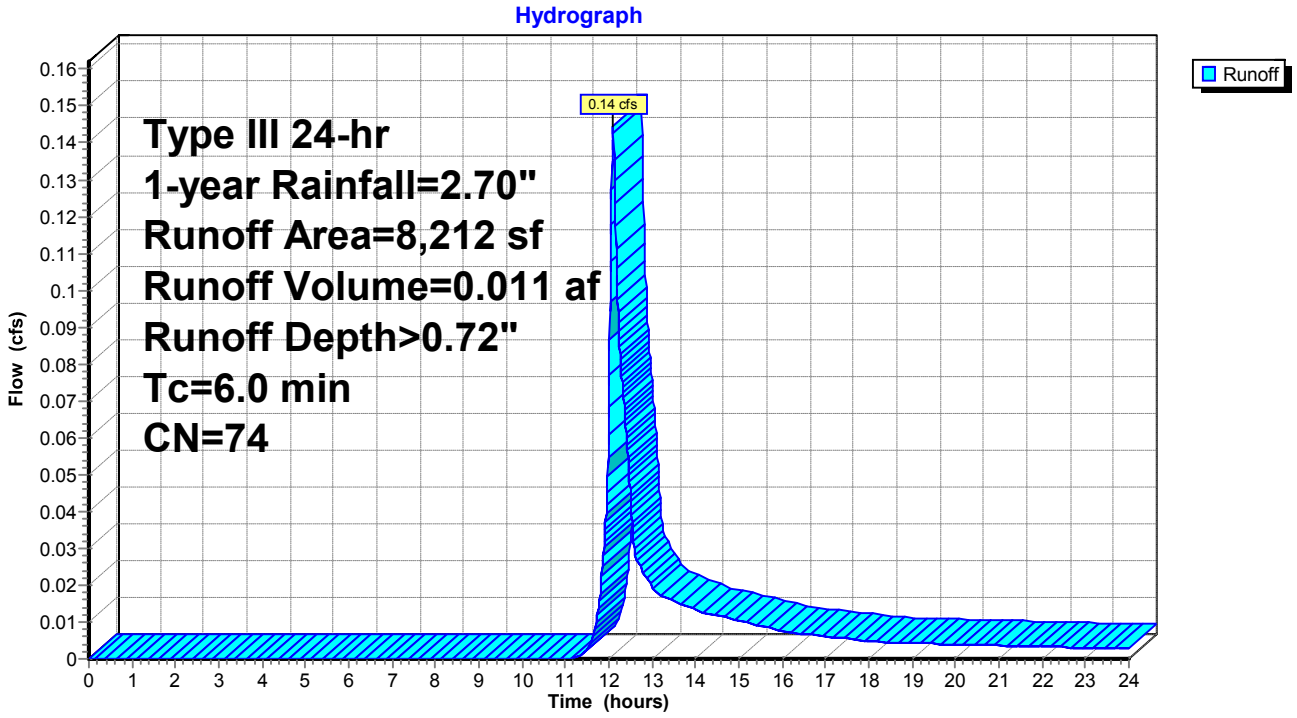
Runoff = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af, Depth> 0.72"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
8,212	74	>75% Grass cover, Good, HSG C
8,212		100.00% Pervious Area

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

Subcatchment POST-WS5A: POST-WS5A



Summary for Subcatchment POST-WS5B-1: POST-WS5B-1

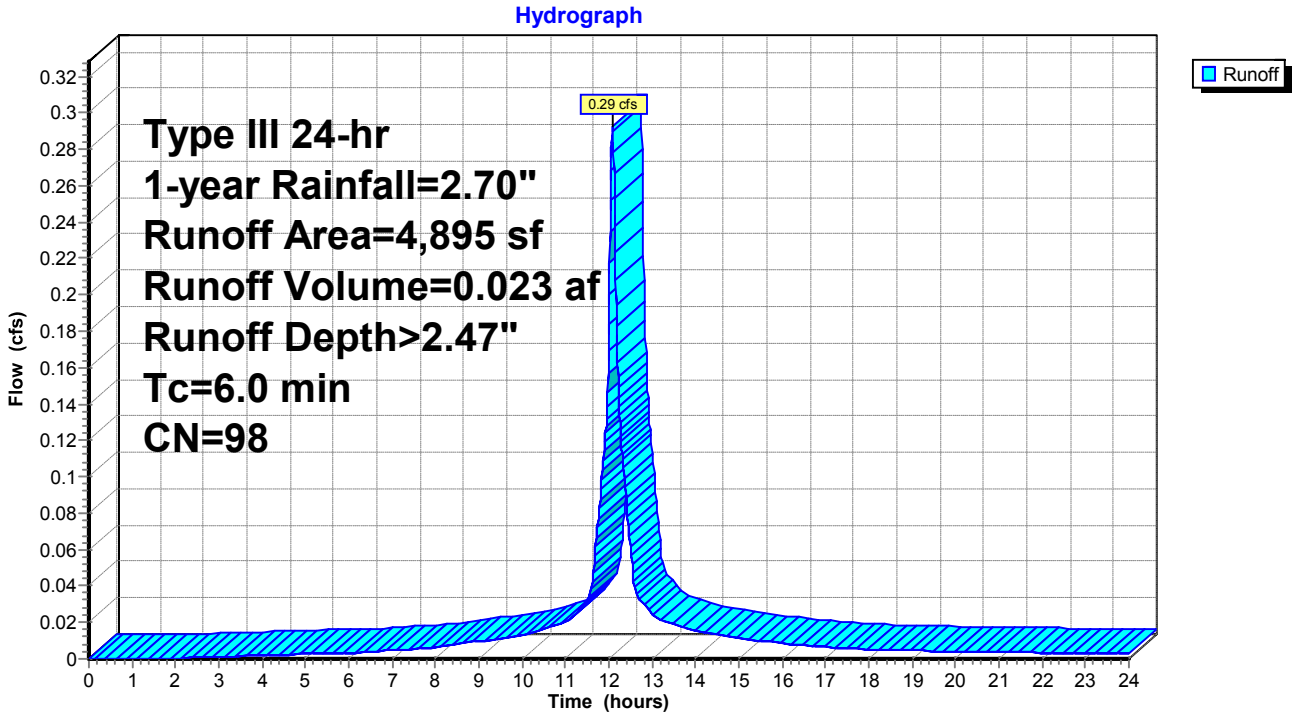
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 2.47"
Routed to Pond ADS-#3 : ADS-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
4,895	98	Paved roads w/curbs & sewers, HSG C
4,895		100.00% Impervious Area

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

Subcatchment POST-WS5B-1: POST-WS5B-1



Summary for Subcatchment POST-WS6A: POST-WS6A

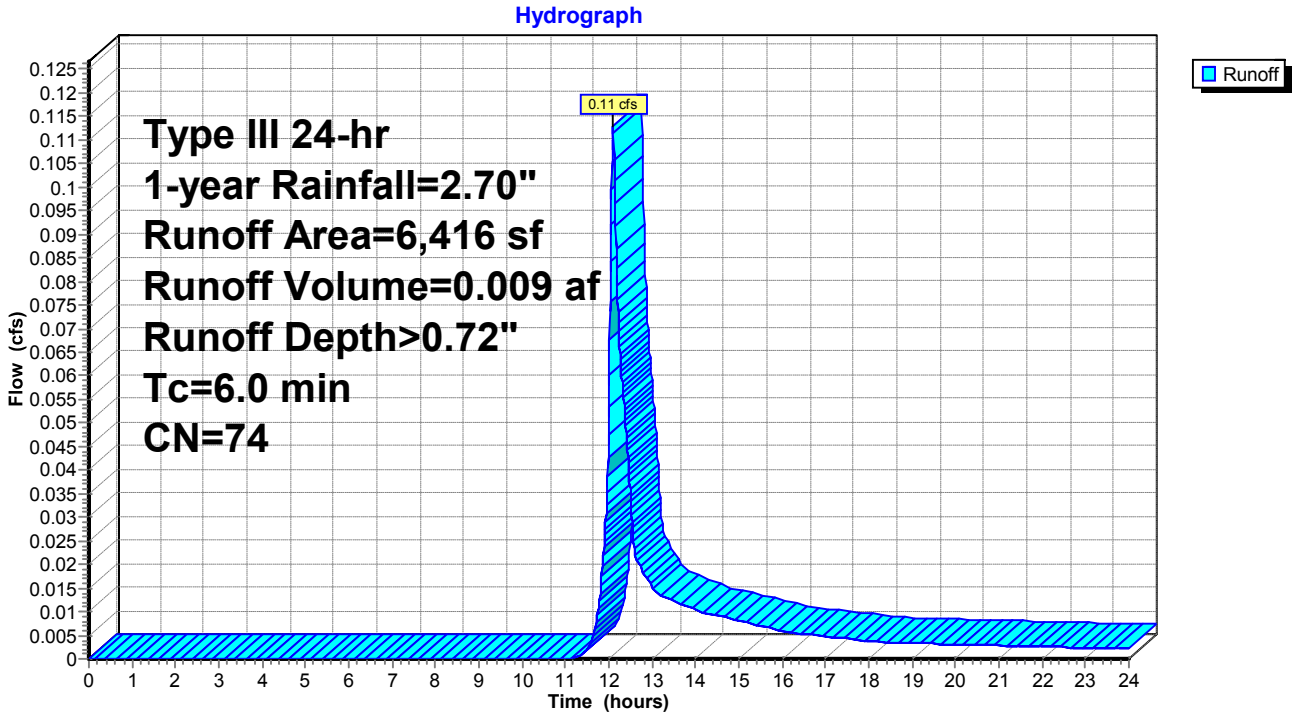
Runoff = 0.11 cfs @ 12.10 hrs, Volume= 0.009 af, Depth> 0.72"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
6,416	74	>75% Grass cover, Good, HSG C
6,416		100.00% Pervious Area

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

Subcatchment POST-WS6A: POST-WS6A



Summary for Subcatchment POST-WS6B-1: POST-WS6B-1

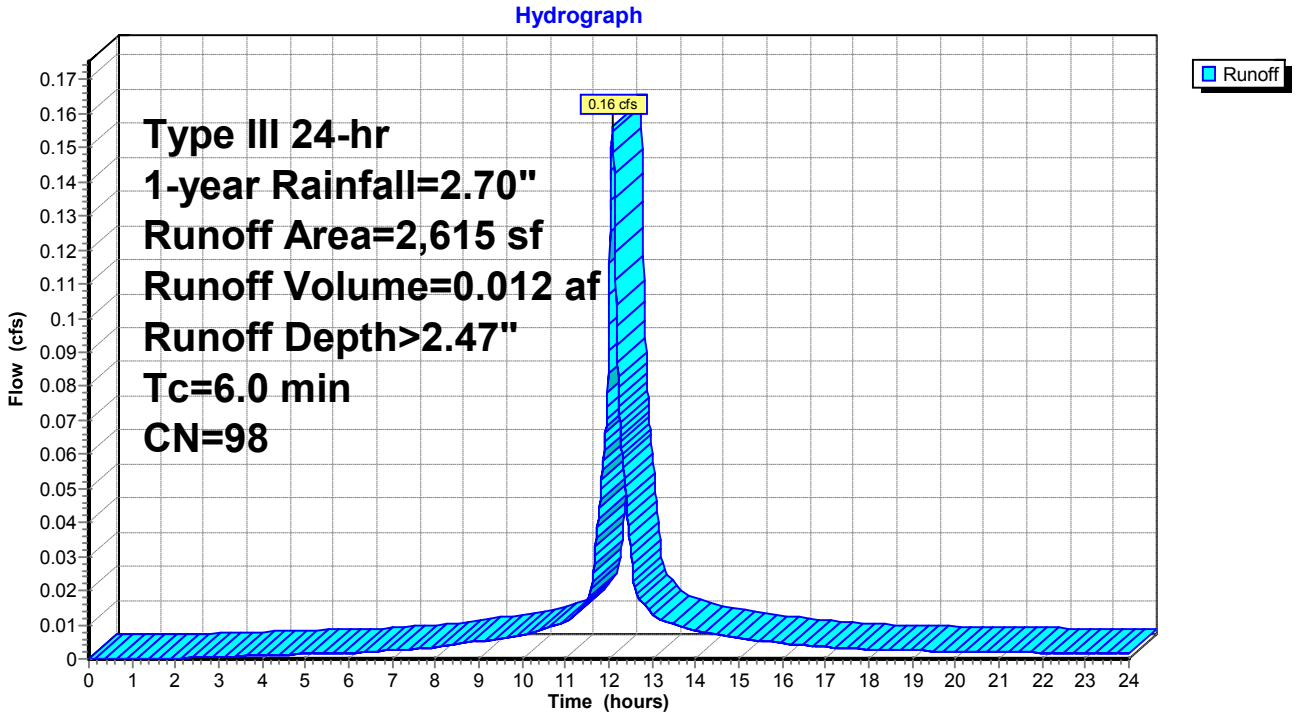
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 2.47"
Routed to Pond DW-#1 : DW-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
2,615	98	Paved parking, HSG C
2,615		100.00% Impervious Area

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

Subcatchment POST-WS6B-1: POST-WS6B-1



Summary for Subcatchment POST-WS6B-2: POST-WS6B-2

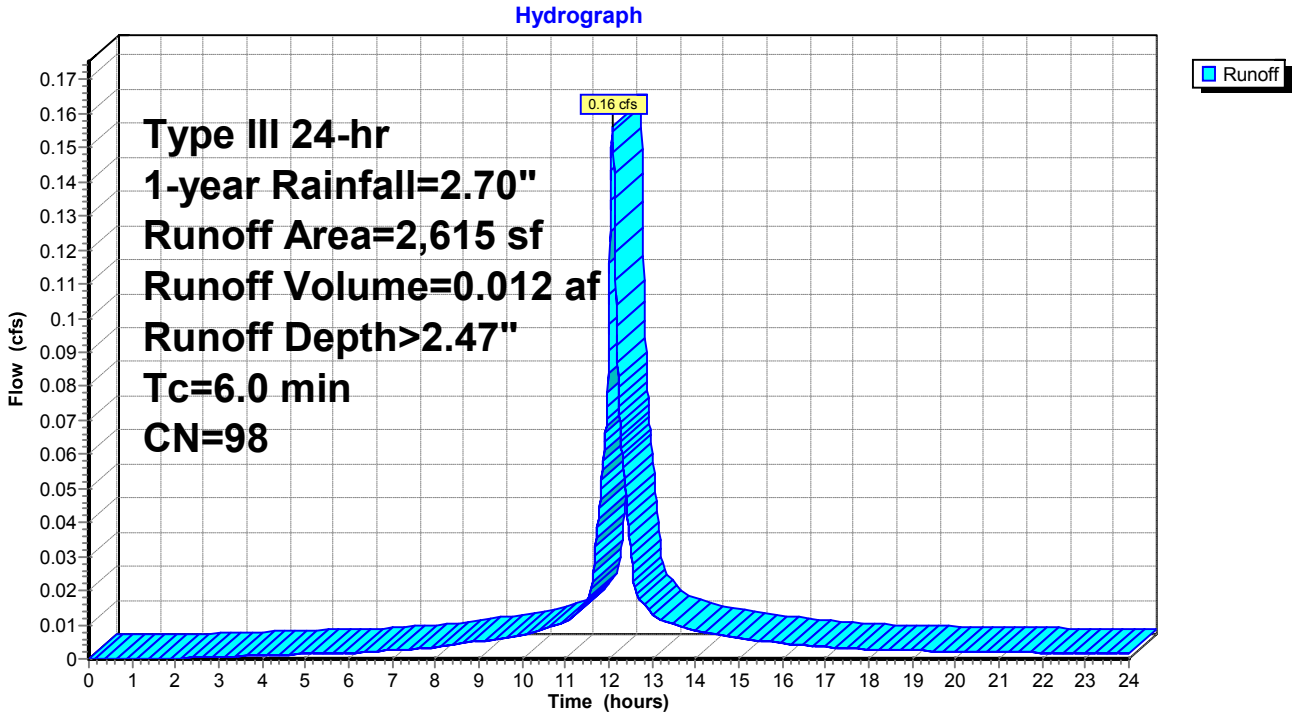
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 2.47"
Routed to Pond DW-#2 : DW-#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
2,615	98	Paved parking, HSG C
2,615		100.00% Impervious Area

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

Subcatchment POST-WS6B-2: POST-WS6B-2



Summary for Subcatchment POST-WS7A: POST-WS7A

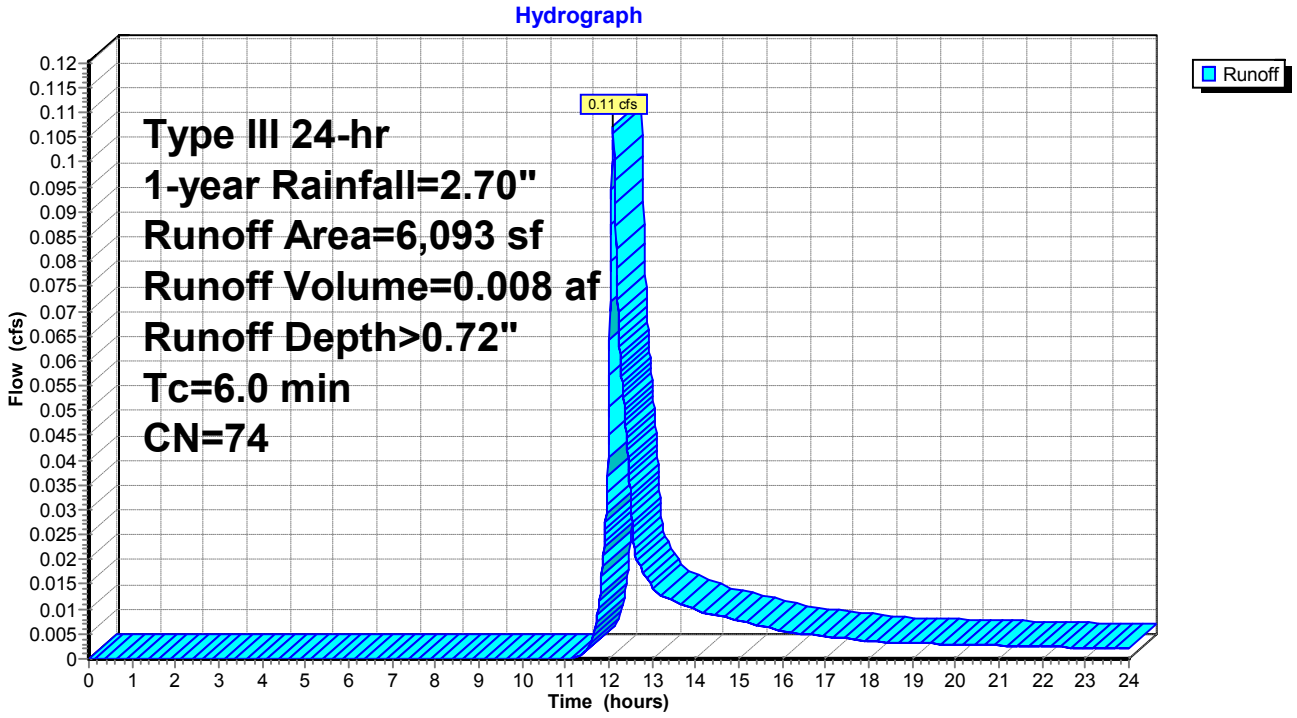
Runoff = 0.11 cfs @ 12.10 hrs, Volume= 0.008 af, Depth> 0.72"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
6,093	74	>75% Grass cover, Good, HSG C
6,093		100.00% Pervious Area

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

Subcatchment POST-WS7A: POST-WS7A



Summary for Subcatchment POST-WS7B-1: POST-WS7B-1

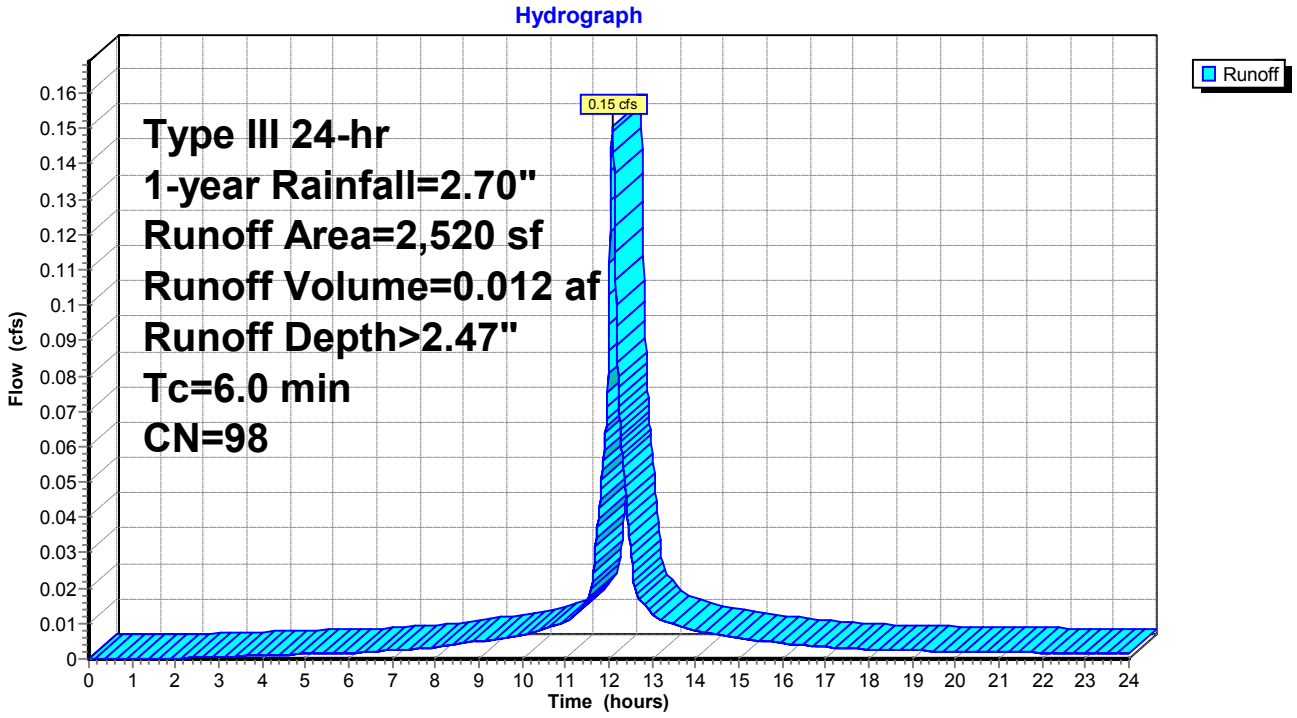
Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 2.47"
Routed to Pond DW-#4 : DW-#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
2,520	98	Paved parking, HSG C
2,520		100.00% Impervious Area

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

Subcatchment POST-WS7B-1: POST-WS7B-1



Summary for Subcatchment POST-WS7B-2: POST-WS7B-2

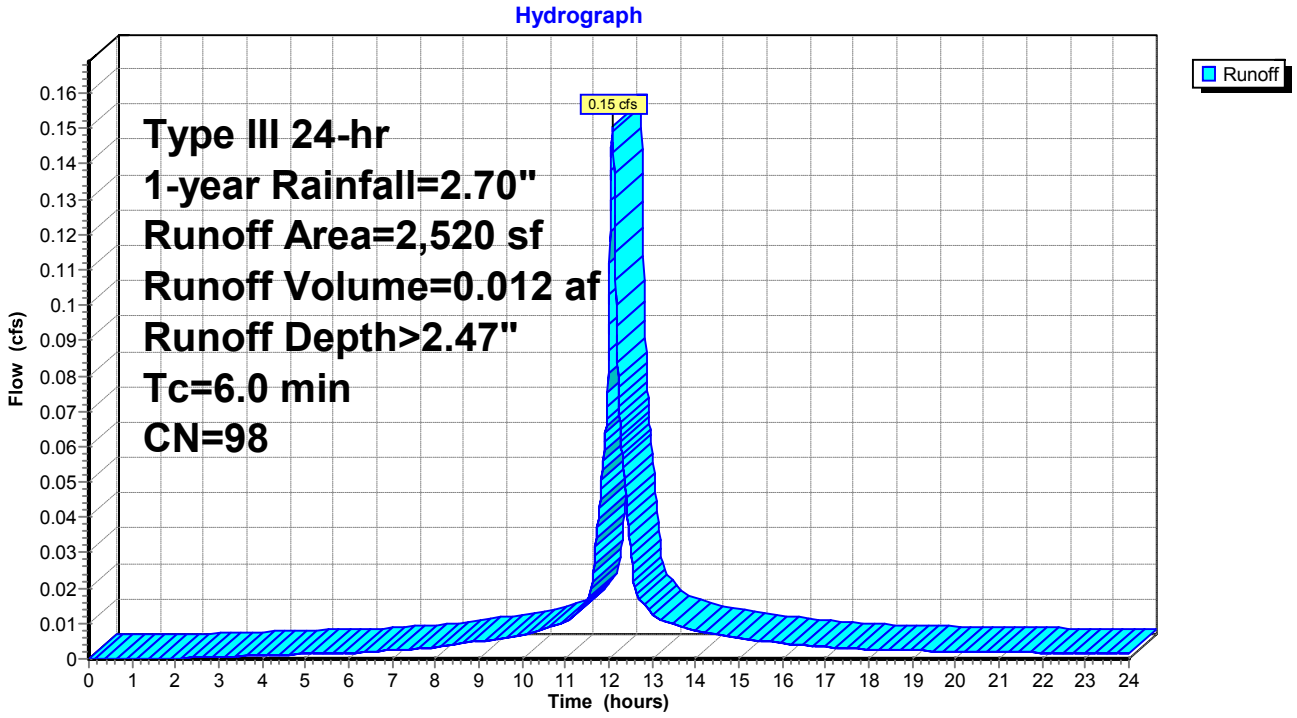
Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 2.47"
Routed to Pond DW-#3 : DW-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
2,520	98	Paved parking, HSG C
2,520		100.00% Impervious Area

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

Subcatchment POST-WS7B-2: POST-WS7B-2



Summary for Subcatchment POST-WS8A: POST-WS8A

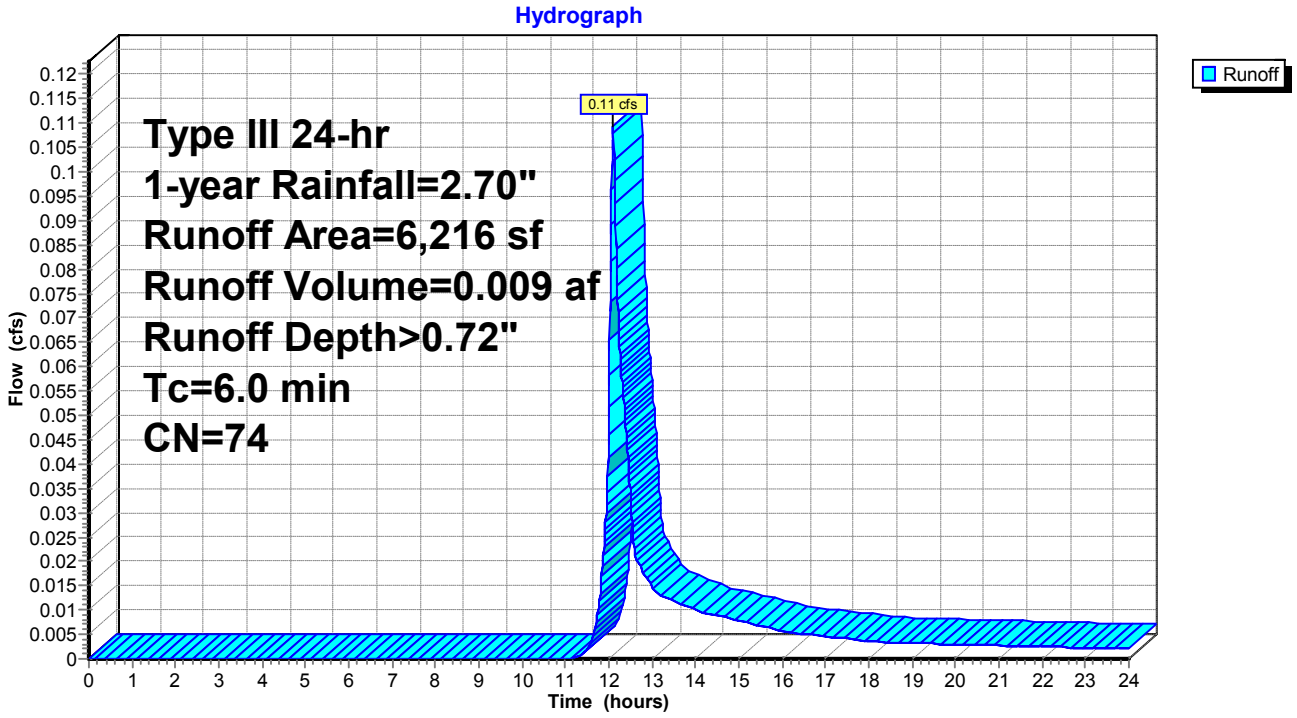
Runoff = 0.11 cfs @ 12.10 hrs, Volume= 0.009 af, Depth> 0.72"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
6,216	74	>75% Grass cover, Good, HSG C
6,216		100.00% Pervious Area

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

Subcatchment POST-WS8A: POST-WS8A



Summary for Subcatchment POST-WS8B-1: POST-WS8B-1

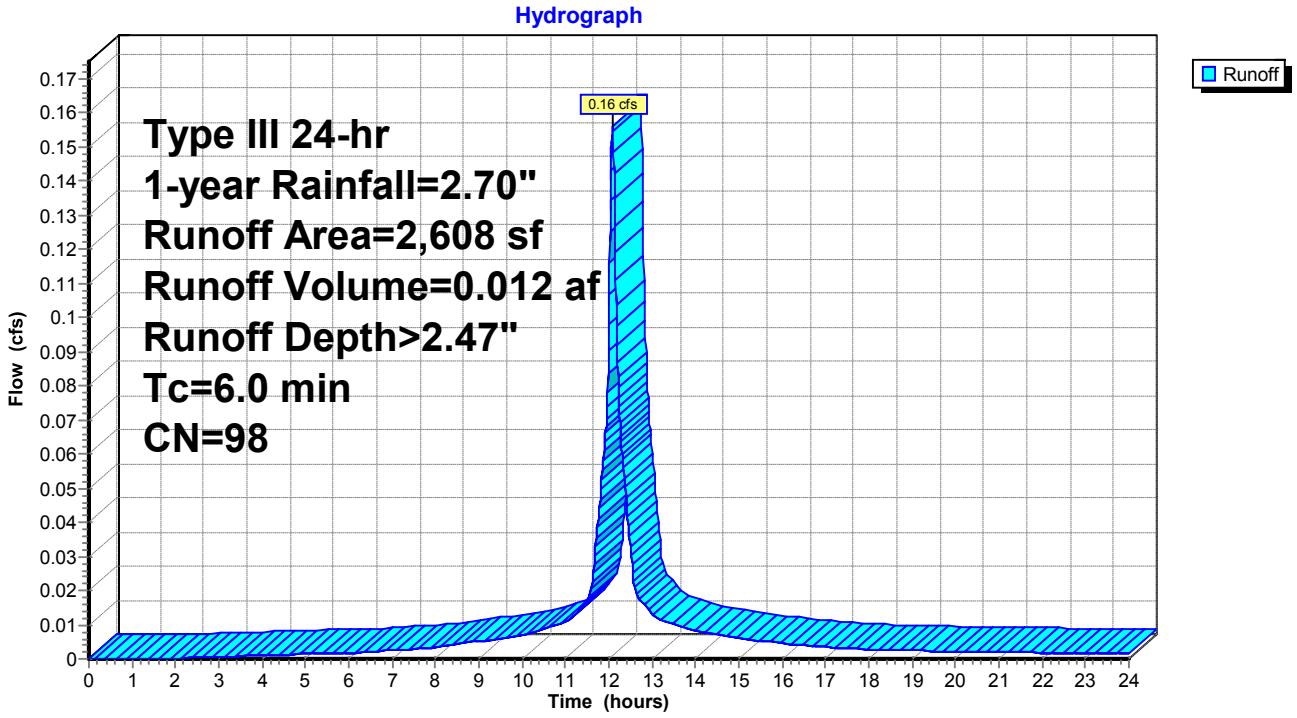
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 2.47"
Routed to Pond DW-#6 : DW-#6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
2,608	98	Paved parking, HSG C
2,608		100.00% Impervious Area

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

Subcatchment POST-WS8B-1: POST-WS8B-1



Summary for Subcatchment POST-WS8B-2: POST-WS8B-2

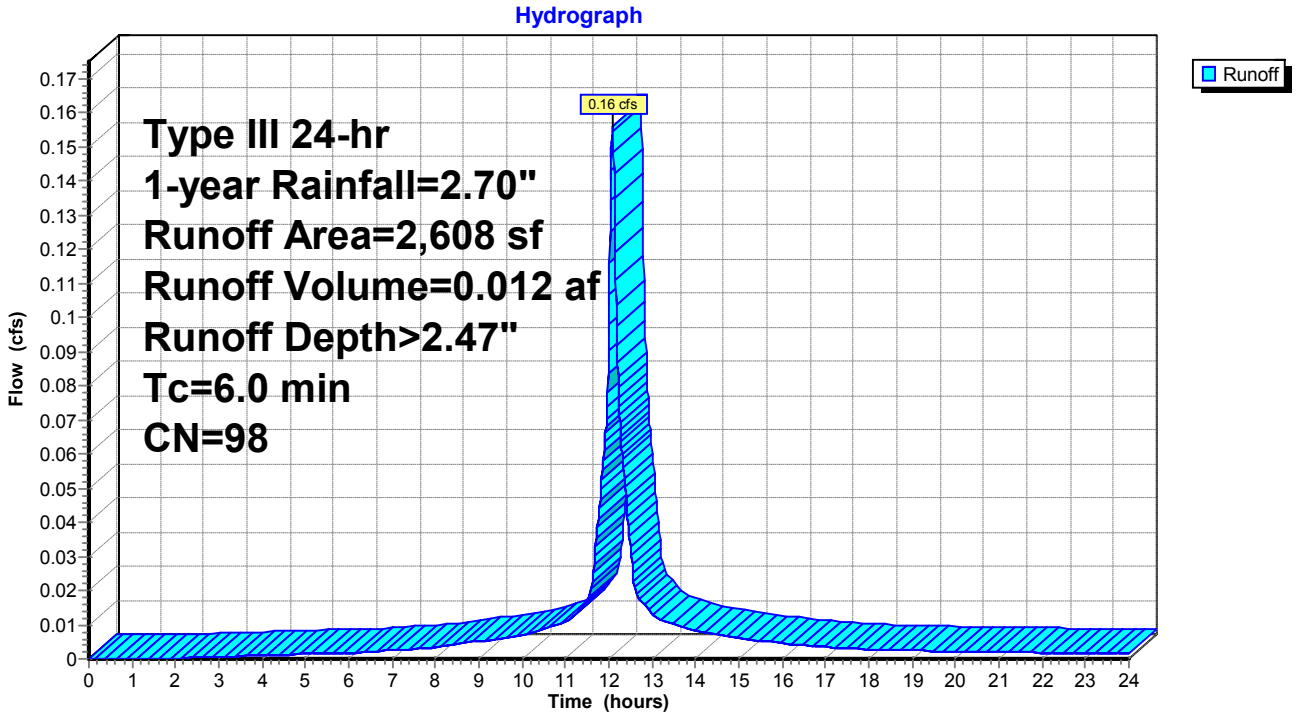
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Depth> 2.47"
Routed to Pond DW-#5 : DW-#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
2,608	98	Paved parking, HSG C
2,608		100.00% Impervious Area

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

Subcatchment POST-WS8B-2: POST-WS8B-2



Summary for Subcatchment PRE-WS1: PRE-WS1

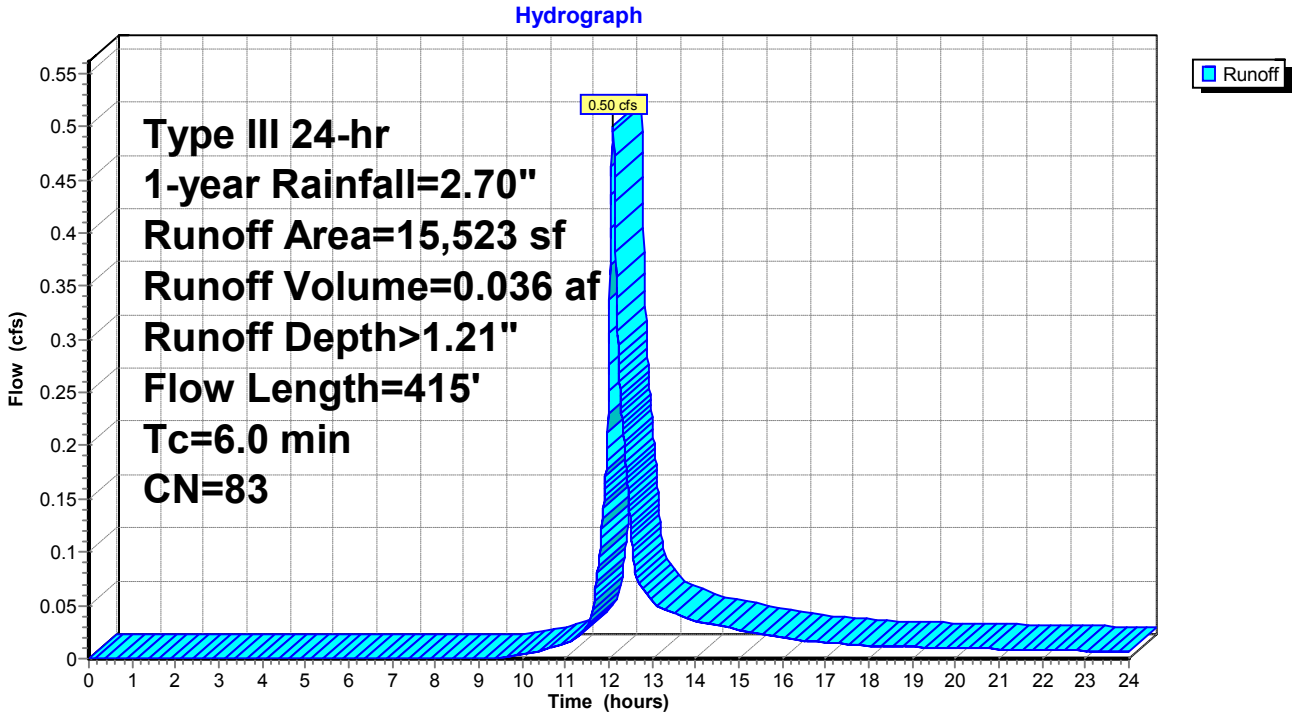
Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth> 1.21"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
4,132	87	Dirt roads, HSG C
11,391	82	Woods/grass comb., Poor, HSG C
15,523	83	Weighted Average
15,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.32		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 3.00"
1.0	315	0.0690	5.33		**Shallow Concentrated Flow, Shallow Flow** Paved Kv= 20.3 fps
1.7	415	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE-WS1: PRE-WS1



Summary for Subcatchment PRE-WS2: PRE-WS2

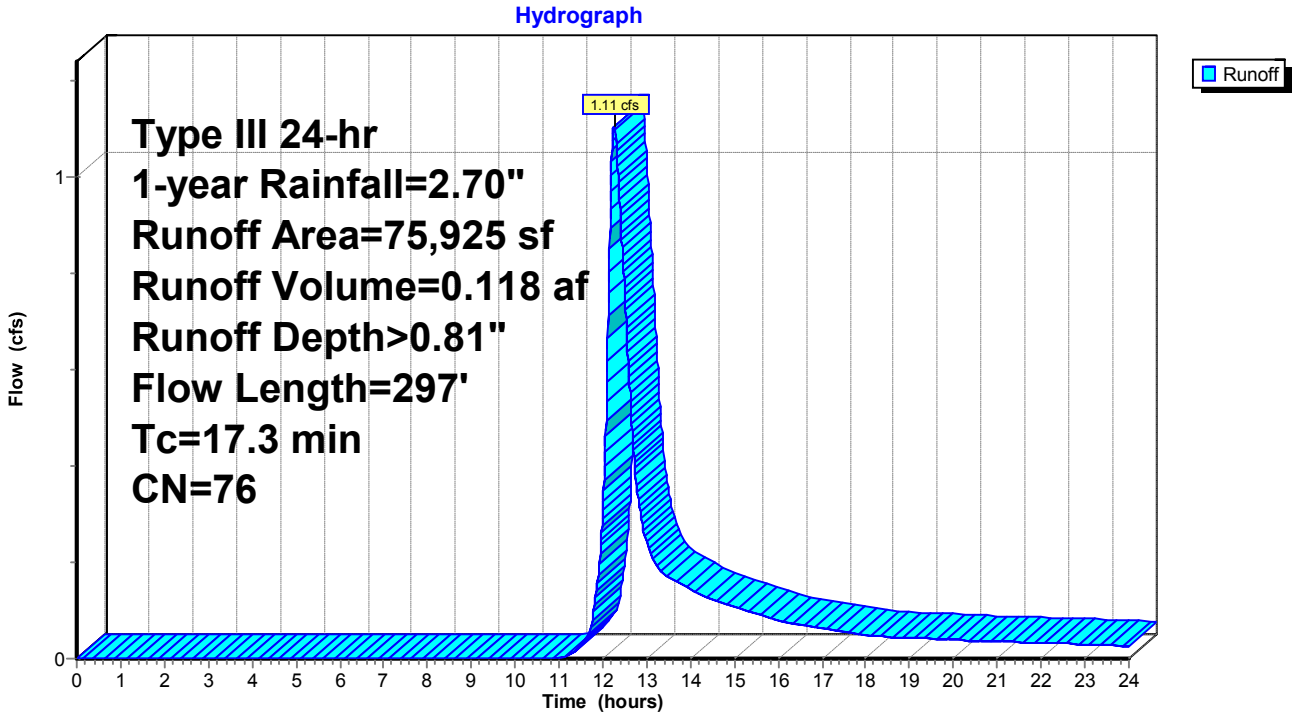
Runoff = 1.11 cfs @ 12.26 hrs, Volume= 0.118 af, Depth> 0.81"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
70,848	76	Woods/grass comb., Fair, HSG C
5,077	74	>75% Grass cover, Good, HSG C
75,925	76	Weighted Average
75,925		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0600	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
3.0	197	0.0480	1.10		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.3	297	Total			

Subcatchment PRE-WS2: PRE-WS2



Summary for Subcatchment PRE-WS3: PRE-WS3

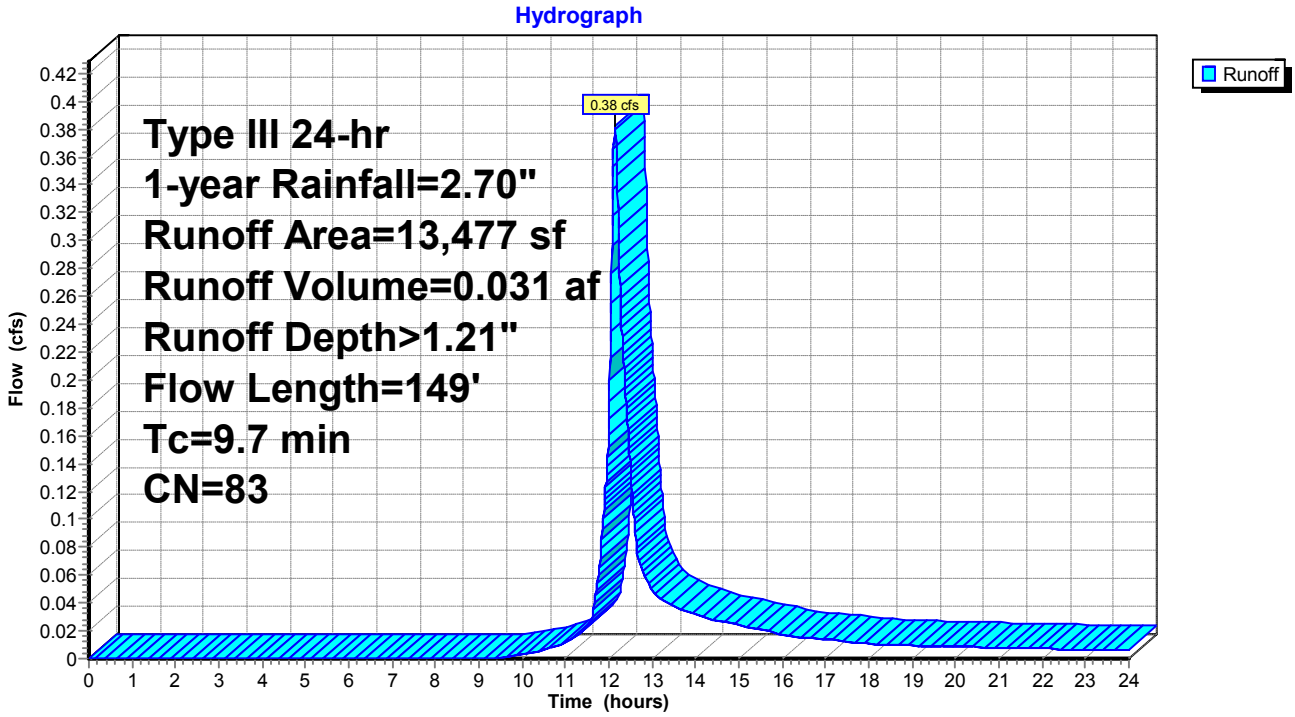
Runoff = 0.38 cfs @ 12.14 hrs, Volume= 0.031 af, Depth> 1.21"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
10,322	82	Woods/grass comb., Poor, HSG C
3,155	86	Pasture/grassland/range, Poor, HSG C
13,477	83	Weighted Average
13,477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	80	0.1250	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.8	69	0.0800	1.41		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
9.7	149	Total			

Subcatchment PRE-WS3: PRE-WS3



Summary for Subcatchment PRE-WS4: PRE-WS4

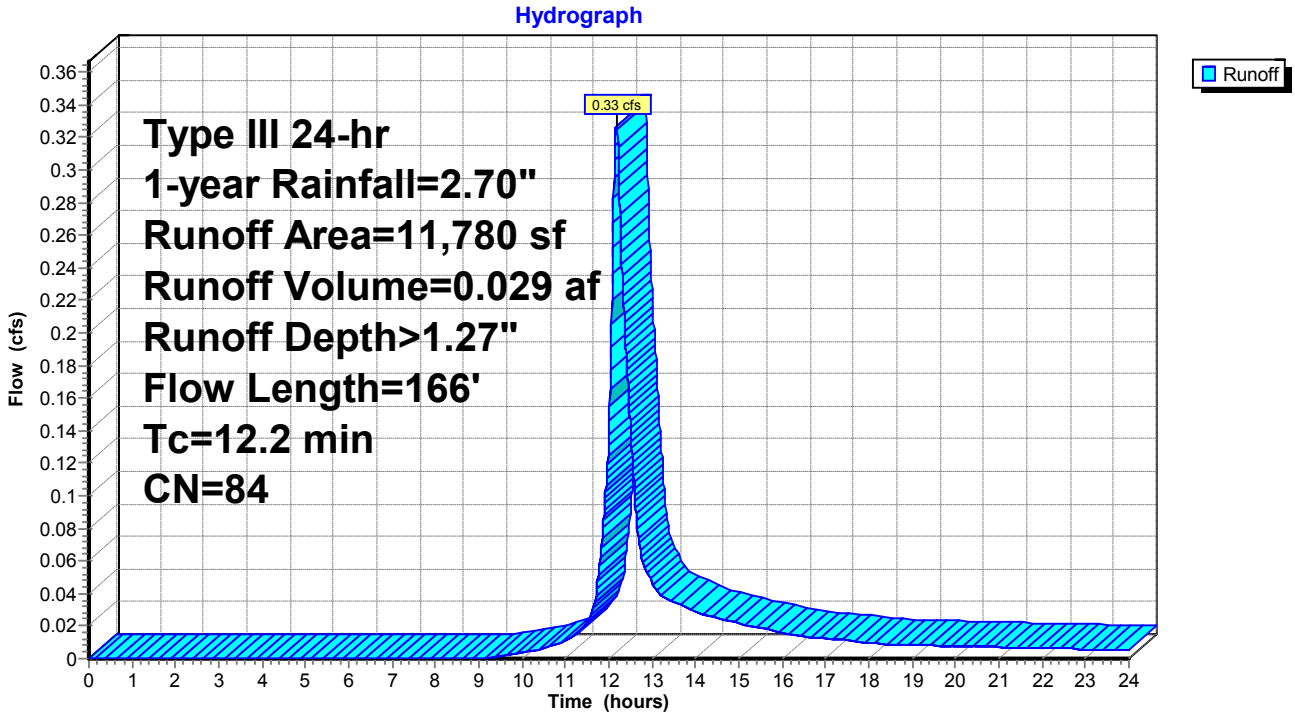
Runoff = 0.33 cfs @ 12.17 hrs, Volume= 0.029 af, Depth> 1.27"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
5,612	82	Woods/grass comb., Poor, HSG C
6,168	86	<50% Grass cover, Poor, HSG C
11,780	84	Weighted Average
11,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1100	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
1.0	66	0.0450	1.06		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
12.2	166	Total			

Subcatchment PRE-WS4: PRE-WS4



Summary for Subcatchment PRE-WS5: PRE-WS5

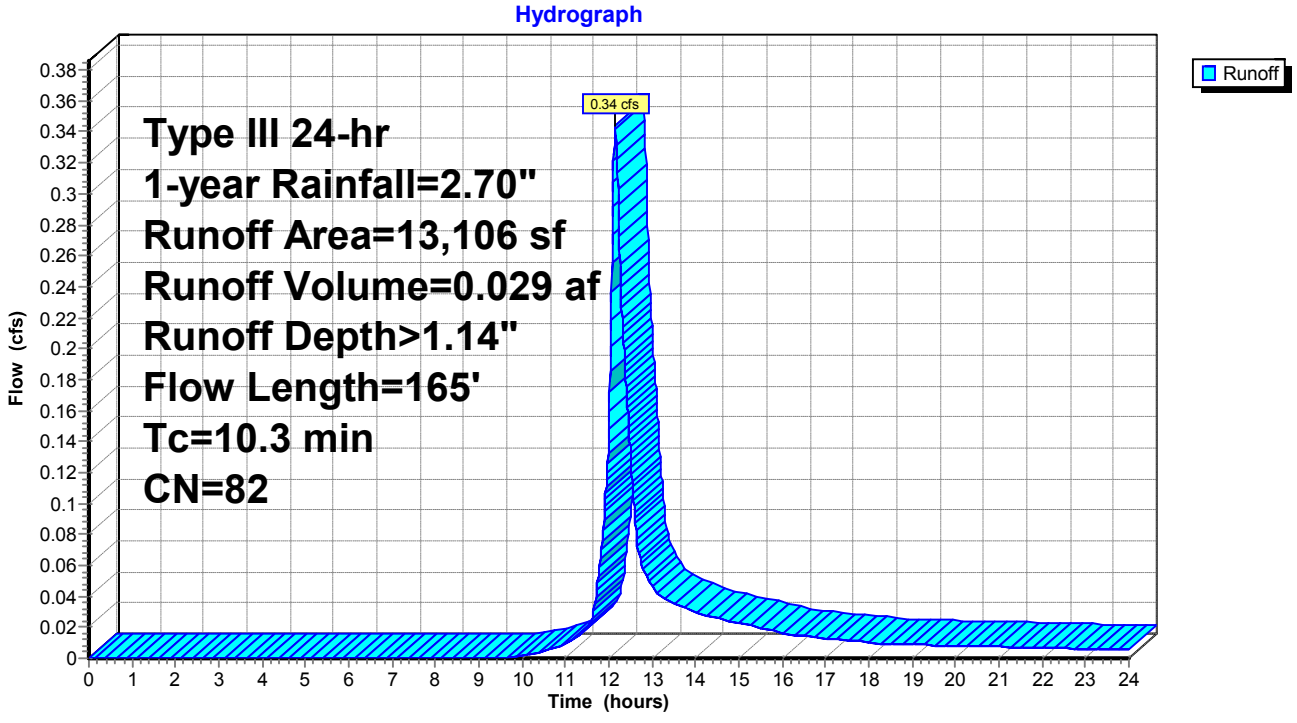
Runoff = 0.34 cfs @ 12.15 hrs, Volume= 0.029 af, Depth> 1.14"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
13,106	82	Woods/grass comb., Poor, HSG C
13,106		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	90	0.1250	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	25	0.0550	1.17		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
0.1	50	0.0500	10.14	40.57	**Channel Flow, Ditch Flow** Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.025 Earth, clean & winding
10.3	165	Total			

Subcatchment PRE-WS5: PRE-WS5



Summary for Subcatchment PRE-WS6: PRE-WS6

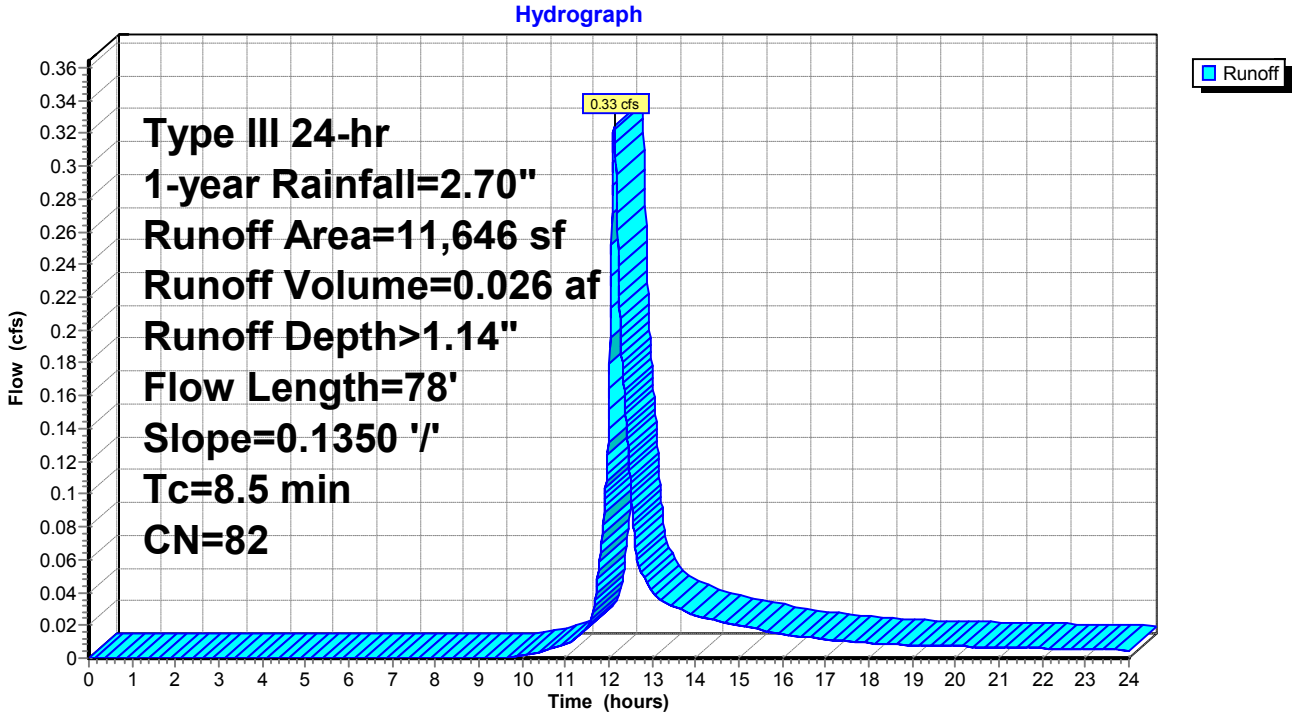
Runoff = 0.33 cfs @ 12.12 hrs, Volume= 0.026 af, Depth> 1.14"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
11,646	82	Woods/grass comb., Poor, HSG C
11,646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	78	0.1350	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"

Subcatchment PRE-WS6: PRE-WS6



Summary for Subcatchment PRE-WS7: PRE-WS7

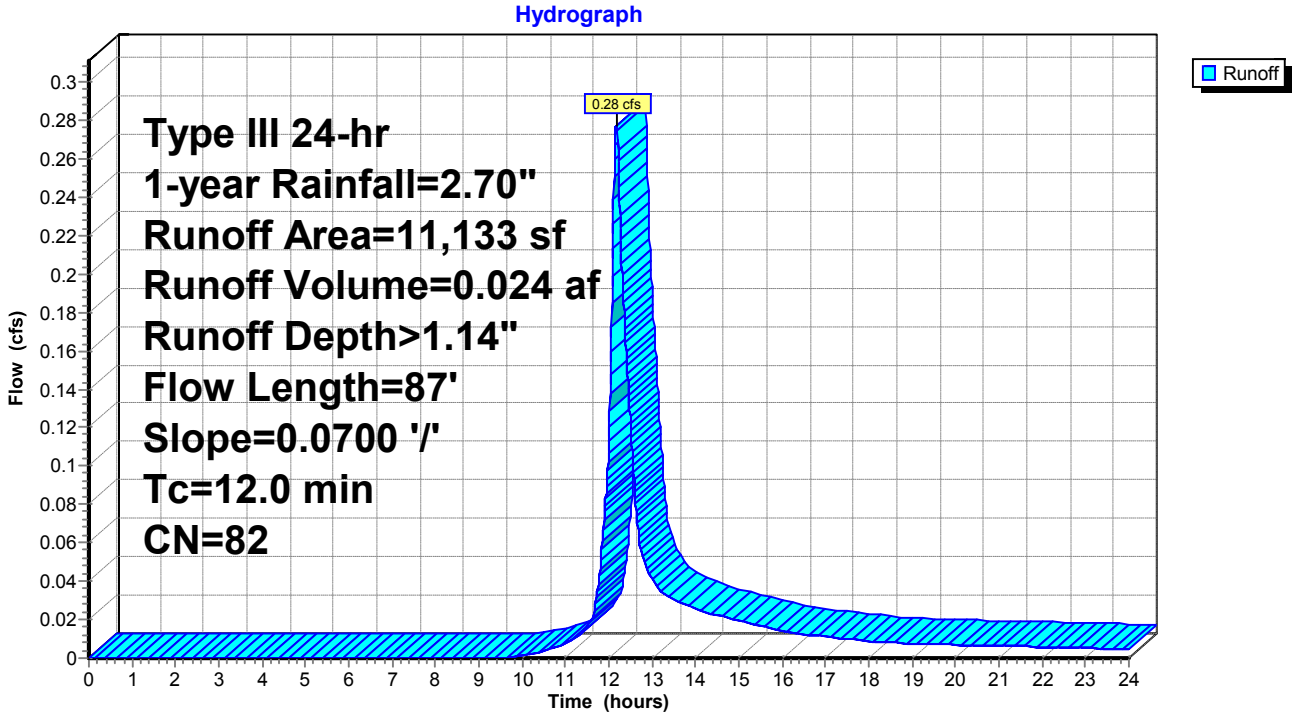
Runoff = 0.28 cfs @ 12.17 hrs, Volume= 0.024 af, Depth> 1.14"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
11,133	82	Woods/grass comb., Poor, HSG C
11,133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	87	0.0700	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"

Subcatchment PRE-WS7: PRE-WS7



Summary for Subcatchment PRE-WS8: PRE-WS8

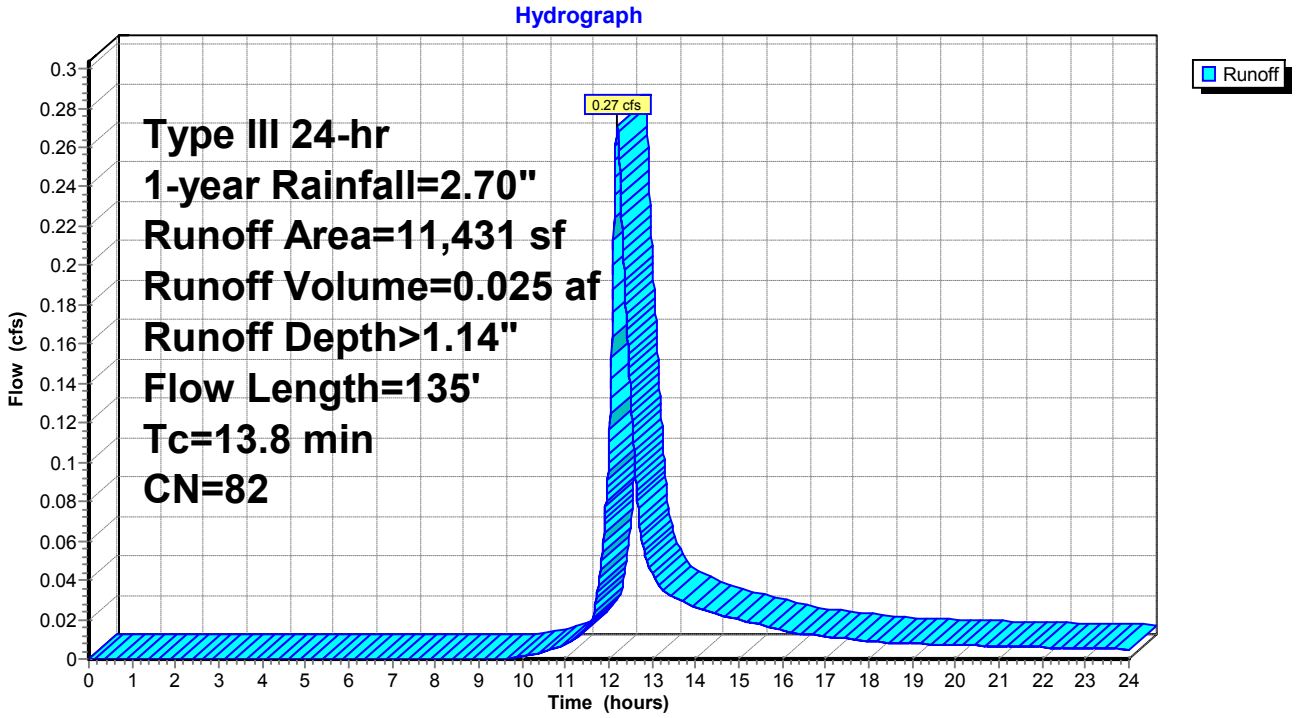
Runoff = 0.27 cfs @ 12.19 hrs, Volume= 0.025 af, Depth> 1.14"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-year Rainfall=2.70"

Area (sf)	CN	Description
11,431	82	Woods/grass comb., Poor, HSG C
11,431		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0700	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	35	0.0900	1.50		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
13.8	135	Total			

Subcatchment PRE-WS8: PRE-WS8



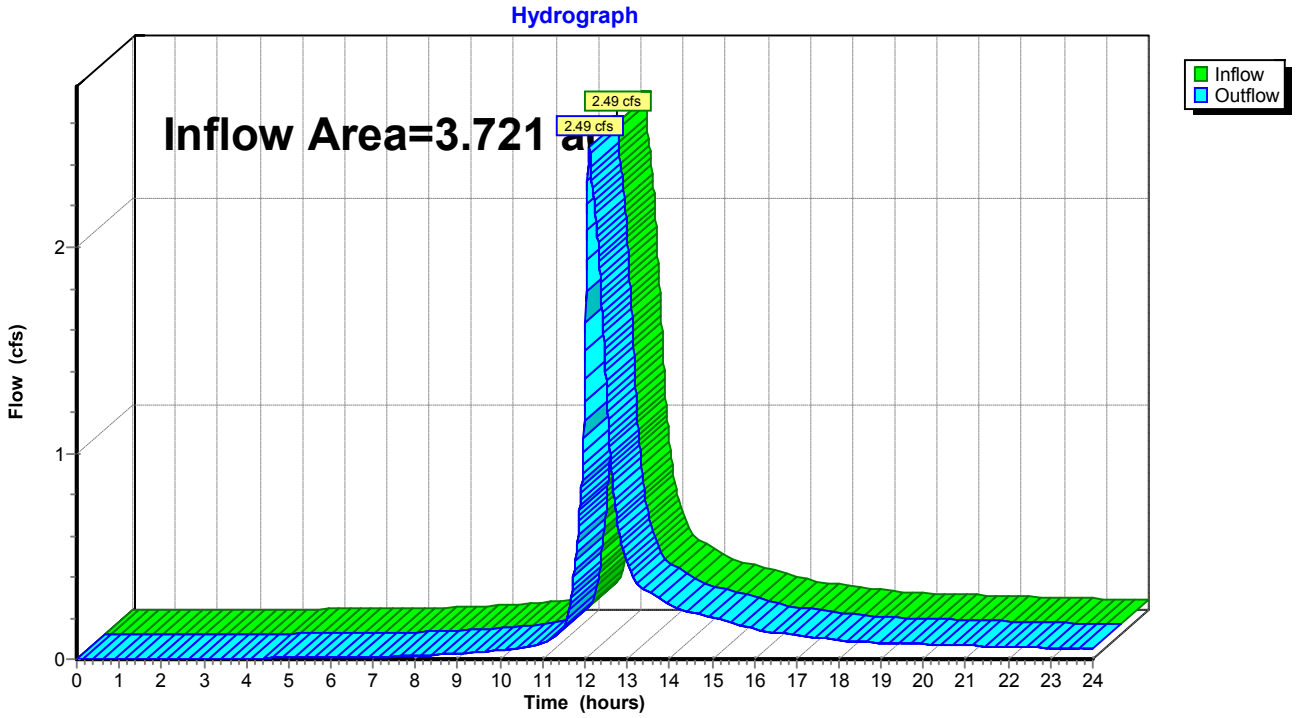
Summary for Reach POST: POST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.721 ac, 30.49% Impervious, Inflow Depth > 0.85" for 1-year event
Inflow = 2.49 cfs @ 12.10 hrs, Volume= 0.265 af
Outflow = 2.49 cfs @ 12.10 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach POST: POST



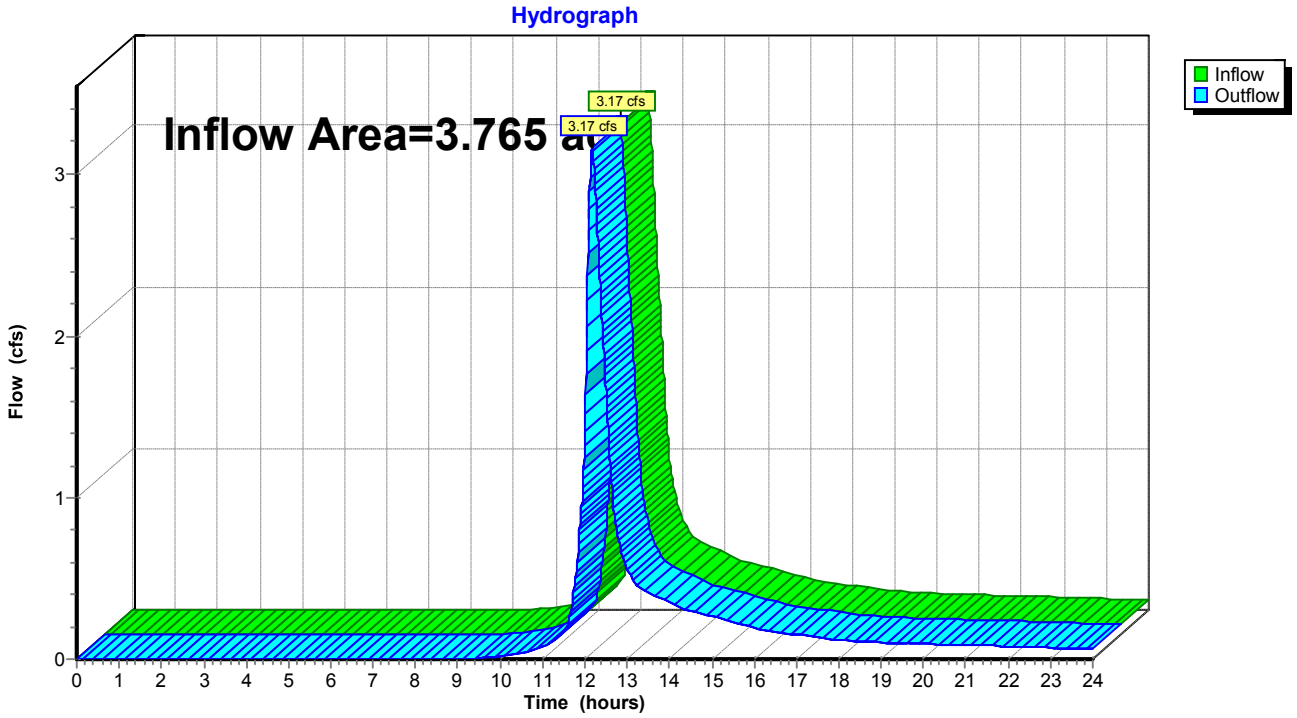
Summary for Reach PRE: PRE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.765 ac, 0.00% Impervious, Inflow Depth > 1.01" for 1-year event
Inflow = 3.17 cfs @ 12.17 hrs, Volume= 0.317 af
Outflow = 3.17 cfs @ 12.17 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach PRE: PRE



Summary for Pond ADS-#1: ADS-#1

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.30 cfs @ 12.08 hrs, Volume= 0.023 af
Outflow = 0.10 cfs @ 12.37 hrs, Volume= 0.023 af, Atten= 67%, Lag= 17.0 min
Discarded = 0.02 cfs @ 12.37 hrs, Volume= 0.019 af
Primary = 0.08 cfs @ 12.37 hrs, Volume= 0.004 af
Routed to Pond SDMH #5 : SDMH #5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 502.22' @ 12.37 hrs Surf.Area= 424 sf Storage= 307 cf
Flood Elev= 508.66' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 80.1 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 79.0 min (838.5 - 759.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	501.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	501.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	501.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 468.00'
#2	Primary	501.50'	**10.0" Round Culvert** L= 13.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 501.50' / 501.37' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	503.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	502.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	502.50'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.37 hrs HW=502.22' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.08 cfs @ 12.37 hrs HW=502.22' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 1.22 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.08 cfs @ 1.77 fps)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Pond ADS-#1: ADS-#1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

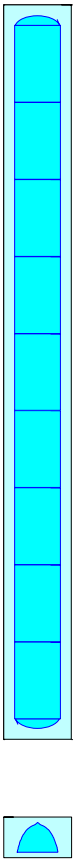
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

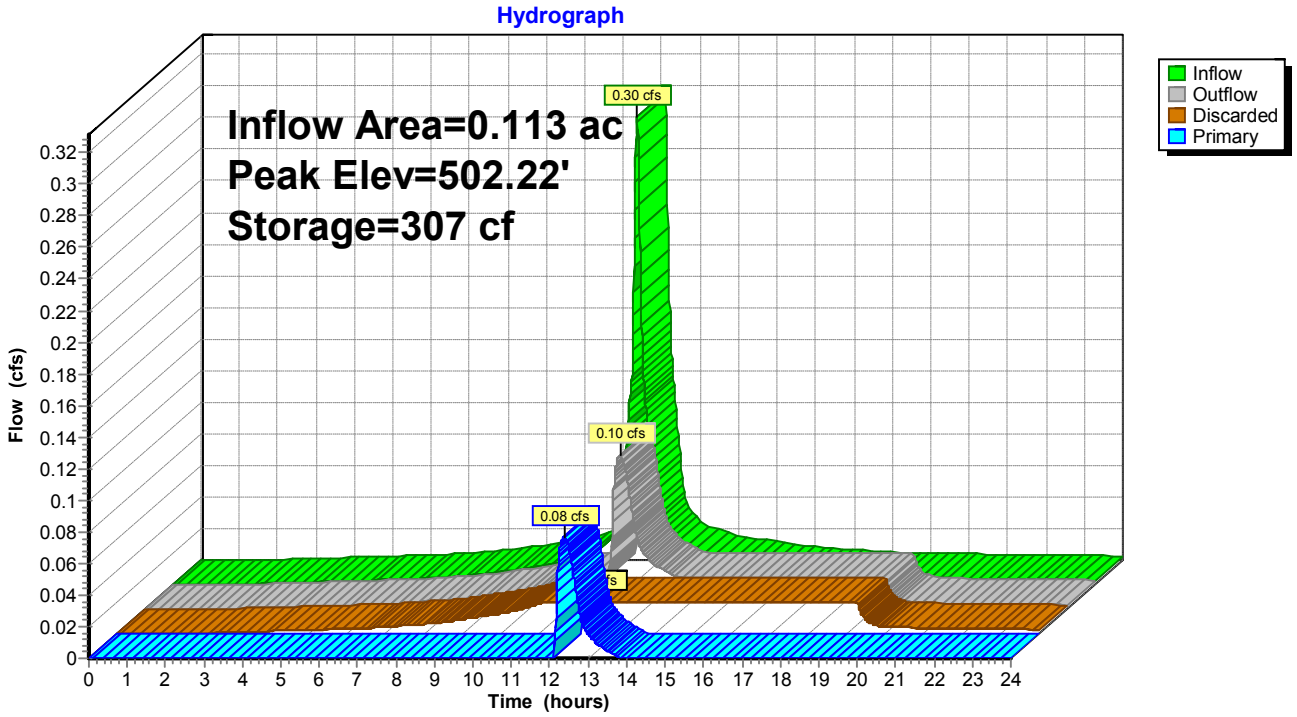
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#1: ADS-#1



Summary for Pond ADS-#2: ADS-#2

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af
Outflow = 0.10 cfs @ 12.37 hrs, Volume= 0.023 af, Atten= 68%, Lag= 17.3 min
Discarded = 0.02 cfs @ 12.37 hrs, Volume= 0.019 af
Primary = 0.07 cfs @ 12.37 hrs, Volume= 0.004 af
Routed to Pond SDMH #6 : SDMH #6

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 502.21' @ 12.37 hrs Surf.Area= 424 sf Storage= 305 cf
Flood Elev= 507.68' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 80.1 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 79.0 min (838.6 - 759.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	501.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	501.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	501.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 468.00'
#2	Primary	501.50'	**10.0" Round Culvert** L= 13.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 501.50' / 501.36' S= 0.0101 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	503.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	502.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	502.50'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.37 hrs HW=502.21' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.07 cfs @ 12.37 hrs HW=502.21' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 1.21 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.72 fps)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Pond ADS-#2: ADS-#2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

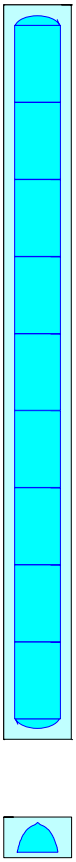
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

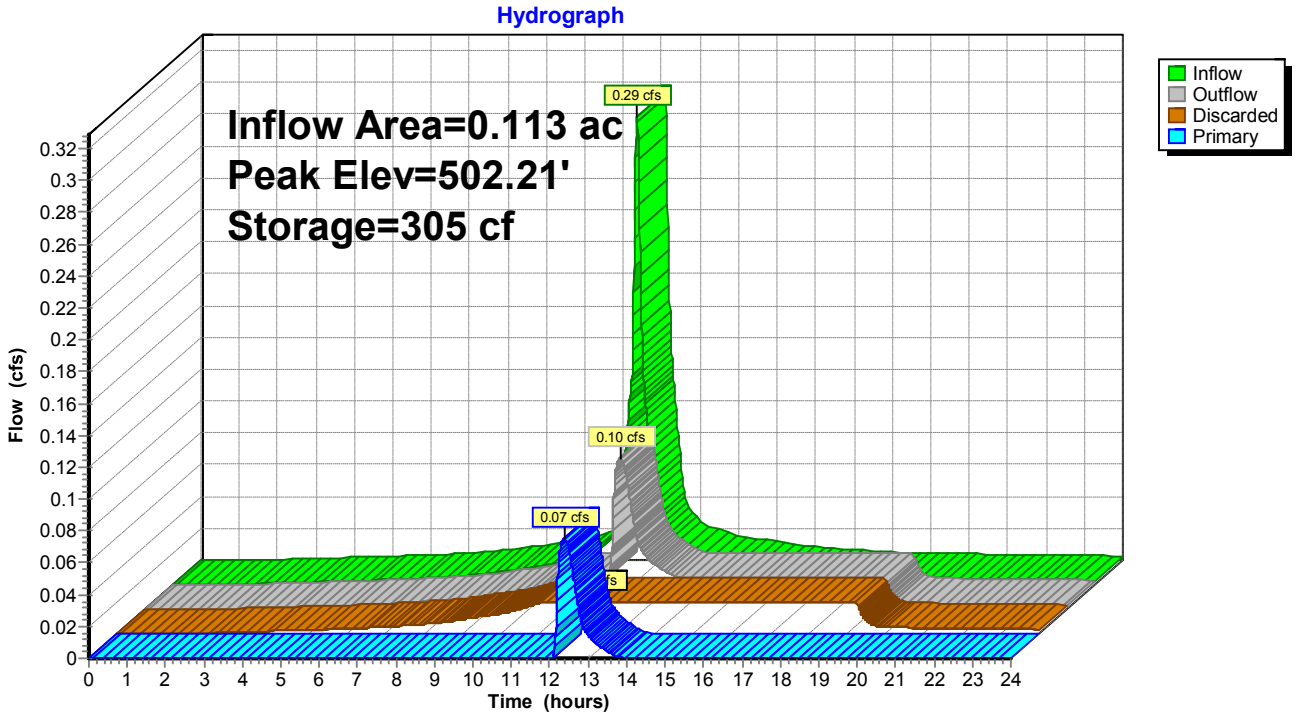
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#2: ADS-#2



Summary for Pond ADS-#3: ADS-#3

Inflow Area = 0.112 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af
Outflow = 0.09 cfs @ 12.38 hrs, Volume= 0.023 af, Atten= 68%, Lag= 17.5 min
Discarded = 0.02 cfs @ 12.38 hrs, Volume= 0.019 af
Primary = 0.07 cfs @ 12.38 hrs, Volume= 0.004 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 501.21' @ 12.38 hrs Surf.Area= 424 sf Storage= 304 cf
Flood Elev= 505.69' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 80.3 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 79.5 min (839.0 - 759.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	500.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	500.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	500.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 467.00'
#2	Primary	500.50'	**10.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.50' / 499.07' S= 0.0681 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	502.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	501.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	501.40'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.38 hrs HW=501.21' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.07 cfs @ 12.38 hrs HW=501.21' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 1.41 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.70 fps)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Pond ADS-#3: ADS-#3 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

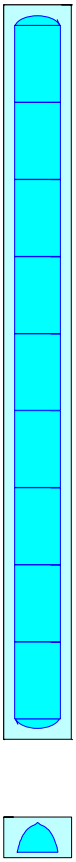
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

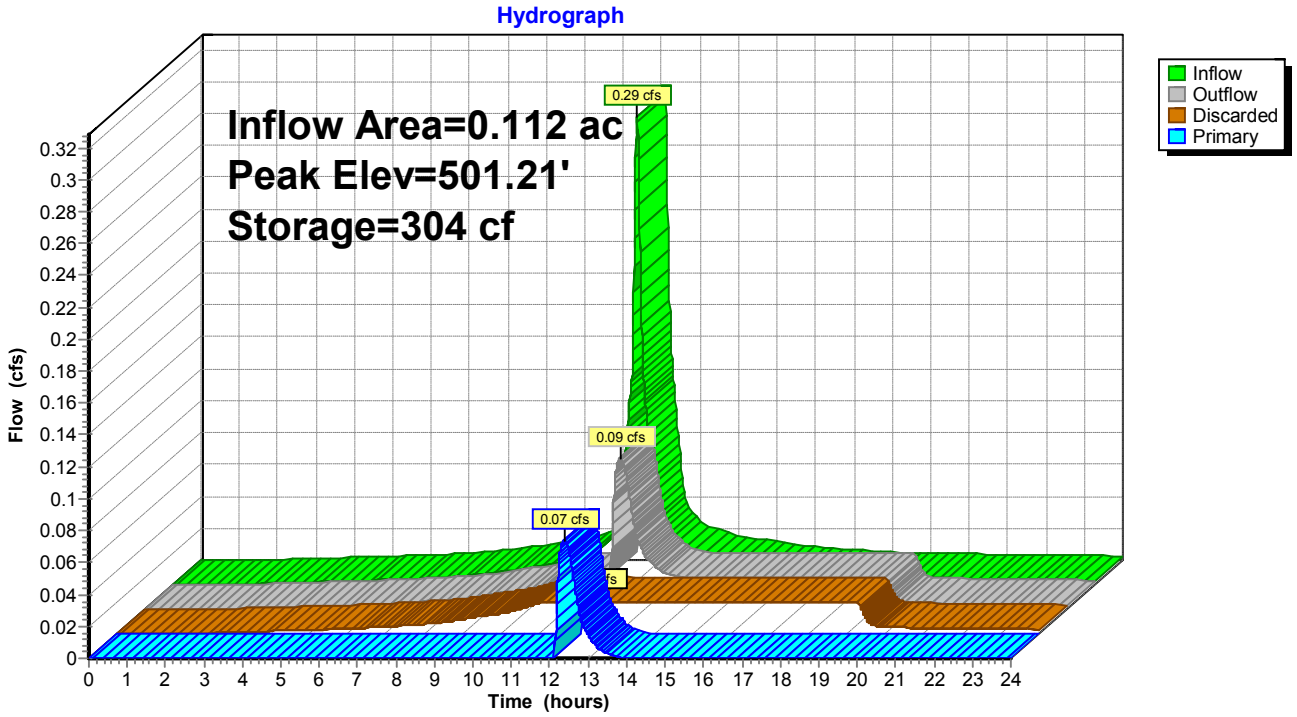
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#3: ADS-#3



Summary for Pond CB-#1: CB-#1

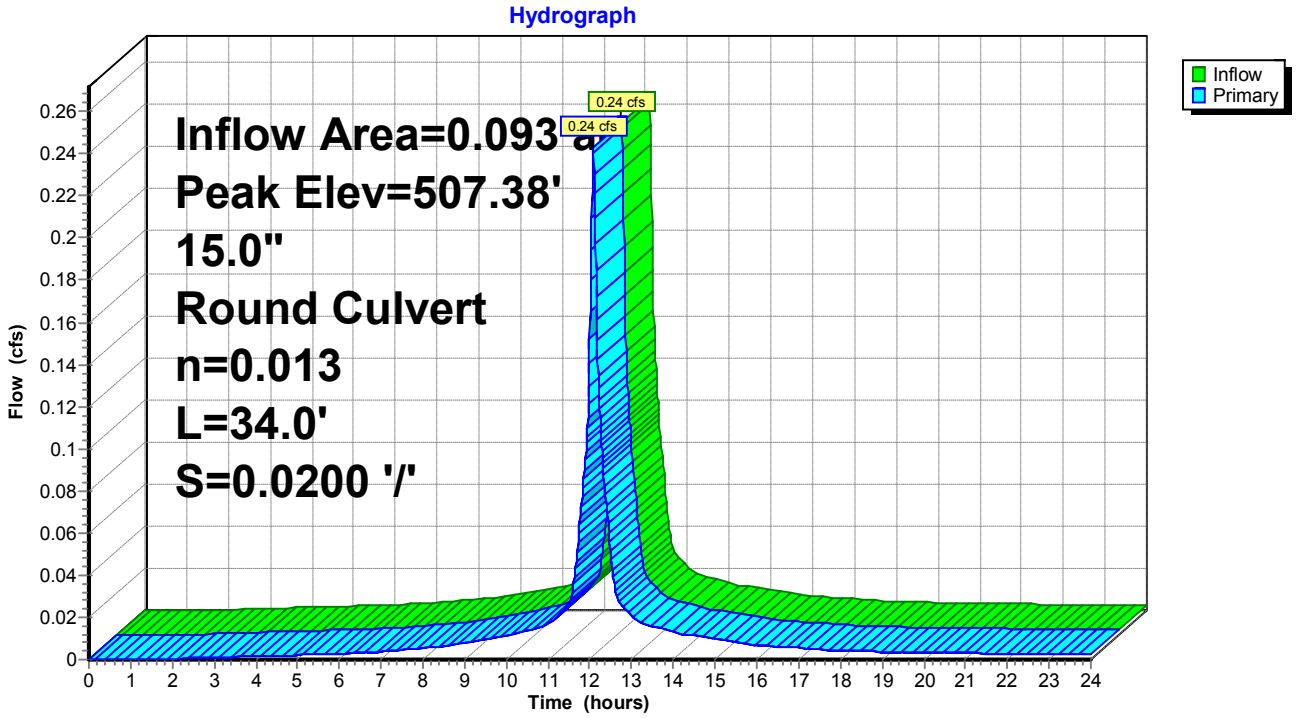
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af
Outflow = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 507.38' @ 12.08 hrs
Flood Elev= 510.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	507.16'	**15.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.16' / 506.48' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.24 cfs @ 12.08 hrs HW=507.38' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 1.61 fps)

Pond CB-#1: CB-#1



Summary for Pond CB-#2: CB-#2

[79] Warning: Submerged Pond CB-#1 Primary device # 1 OUTLET by 0.22'
[79] Warning: Submerged Pond DW-#1 Primary device # 2 OUTLET by 0.22'
[79] Warning: Submerged Pond DW-#2 Primary device # 2 OUTLET by 0.22'
[79] Warning: Submerged Pond DW-#3 Primary device # 2 OUTLET by 0.22'
[81] Warning: Exceeded Pond DW-#4 by 3.76' @ 12.03 hrs

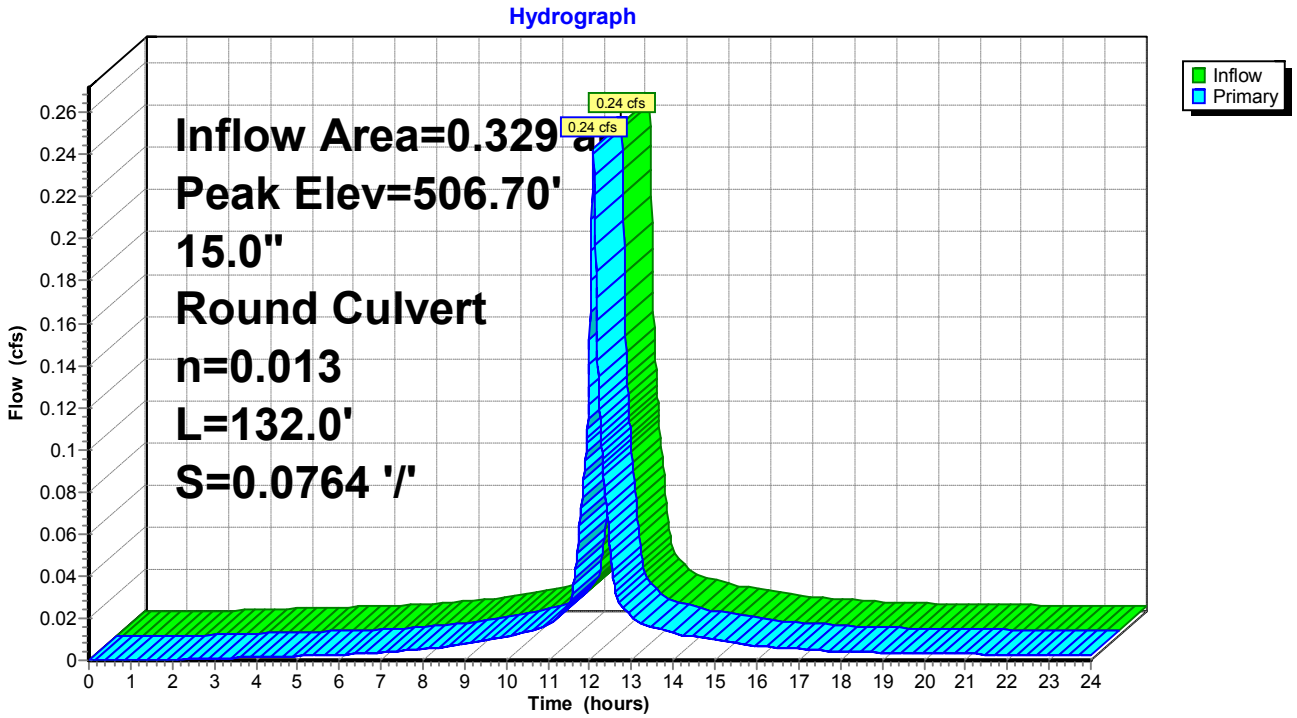
Inflow Area = 0.329 ac,100.00% Impervious, Inflow Depth > 0.70" for 1-year event
Inflow = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af
Outflow = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.08 hrs, Volume= 0.019 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 506.70' @ 12.08 hrs
Flood Elev= 510.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	506.48'	**15.0" Round Culvert** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 506.48' / 496.40' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.24 cfs @ 12.08 hrs HW=506.70' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 1.61 fps)

Pond CB-#2: CB-#2



Summary for Pond CB-#3: CB-#3

[79] Warning: Submerged Pond CB-#2 Primary device # 1 OUTLET by 0.35'

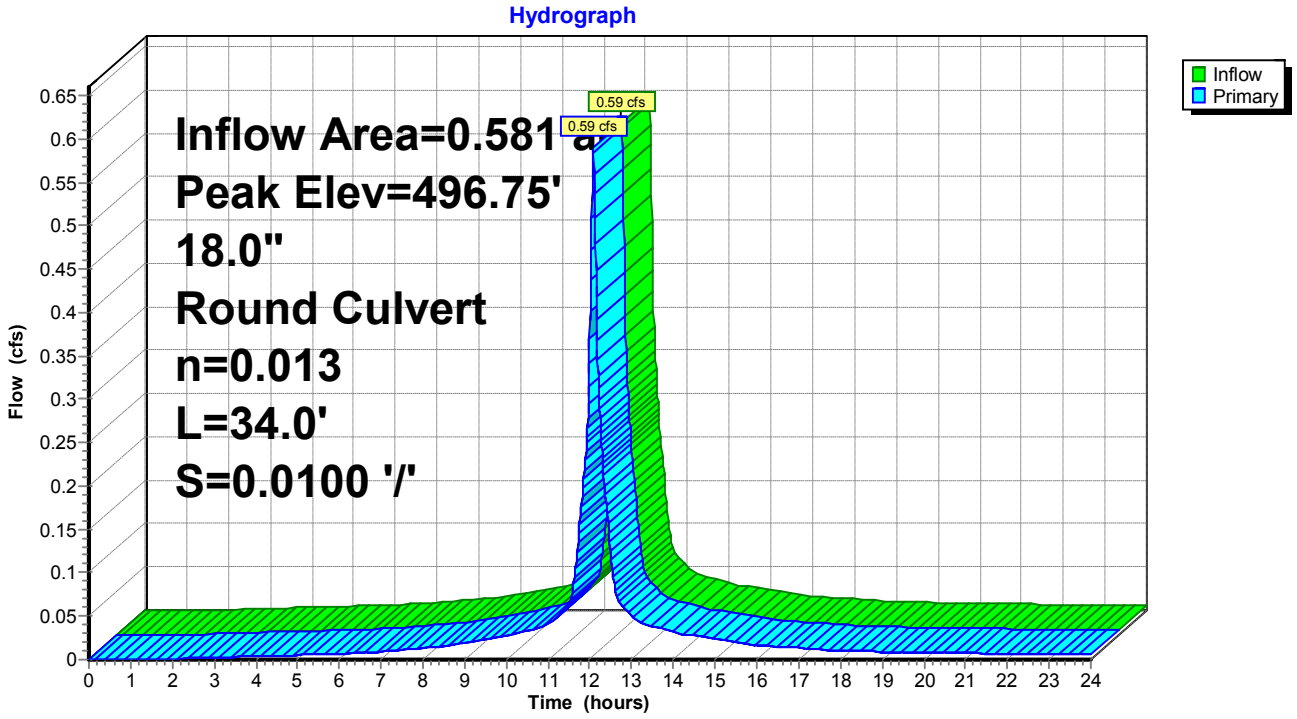
Inflow Area = 0.581 ac,100.00% Impervious, Inflow Depth > 0.96" for 1-year event
Inflow = 0.59 cfs @ 12.08 hrs, Volume= 0.046 af
Outflow = 0.59 cfs @ 12.08 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.08 hrs, Volume= 0.046 af
Routed to Pond CB-#4 : CB-#4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.75' @ 12.08 hrs
Flood Elev= 499.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.40'	**18.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.40' / 496.06' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.59 cfs @ 12.08 hrs HW=496.75' (Free Discharge)
1=Culvert (Barrel Controls 0.59 cfs @ 2.83 fps)

Pond CB-#3: CB-#3



Summary for Pond CB-#4: CB-#4

[79] Warning: Submerged Pond CB-#3 Primary device # 1 OUTLET by 0.31'

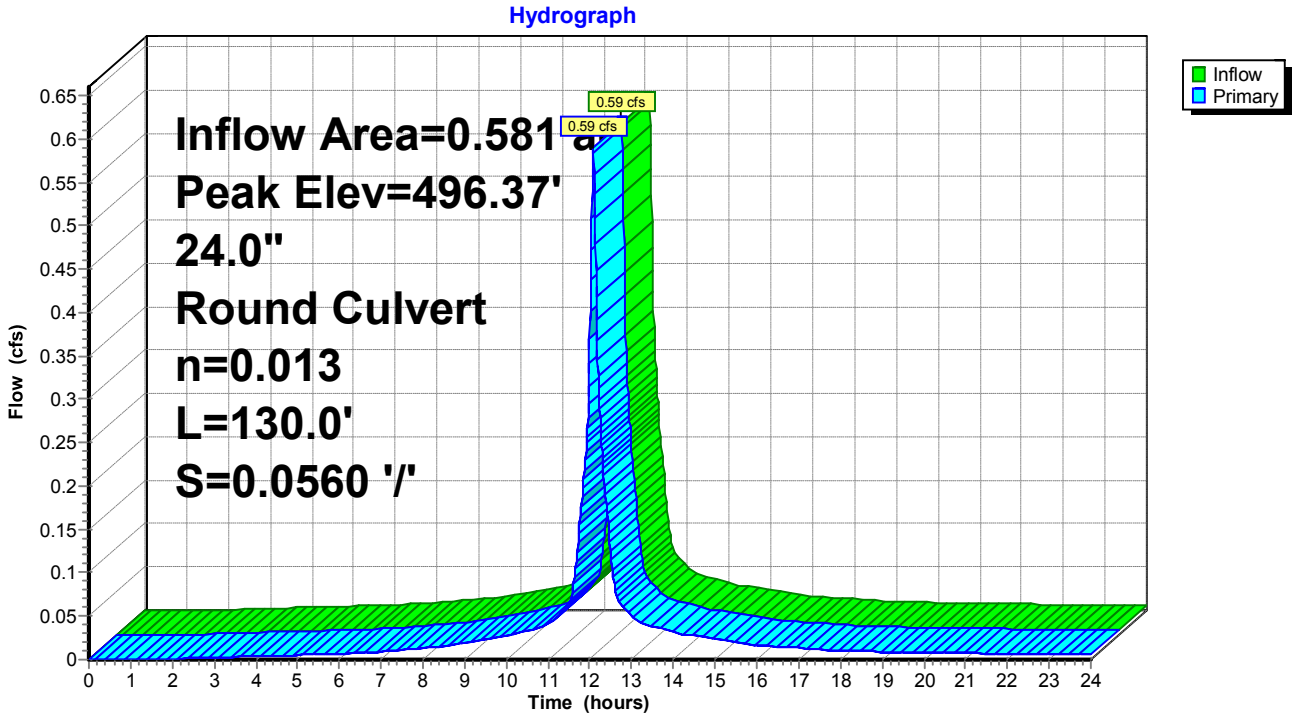
Inflow Area = 0.581 ac,100.00% Impervious, Inflow Depth > 0.96" for 1-year event
Inflow = 0.59 cfs @ 12.08 hrs, Volume= 0.046 af
Outflow = 0.59 cfs @ 12.08 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.08 hrs, Volume= 0.046 af
Routed to Pond CB-#5 : CB-#5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.37' @ 12.08 hrs
Flood Elev= 499.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.06'	**24.0" Round Culvert** L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.06' / 488.78' S= 0.0560 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.59 cfs @ 12.08 hrs HW=496.37' (Free Discharge)
1=Culvert (Inlet Controls 0.59 cfs @ 1.90 fps)

Pond CB-#4: CB-#4



Summary for Pond CB-#5: CB-#5

[79] Warning: Submerged Pond CB-#4 Primary device # 1 OUTLET by 0.54'

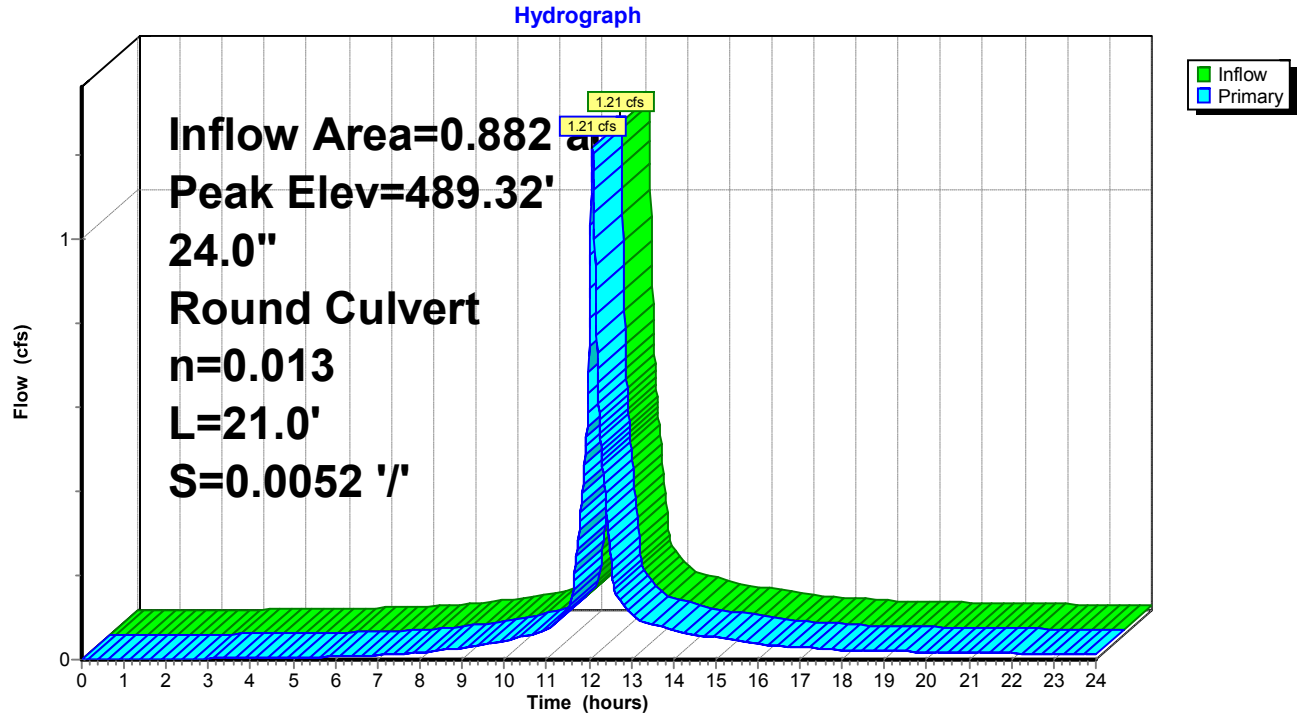
Inflow Area = 0.882 ac, 90.31% Impervious, Inflow Depth > 1.24" for 1-year event
Inflow = 1.21 cfs @ 12.09 hrs, Volume= 0.091 af
Outflow = 1.21 cfs @ 12.09 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.09 hrs, Volume= 0.091 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 489.32' @ 12.09 hrs
Flood Elev= 492.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	488.78'	**24.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 488.78' / 488.67' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.21 cfs @ 12.09 hrs HW=489.32' (Free Discharge)
1=Culvert (Barrel Controls 1.21 cfs @ 2.68 fps)

Pond CB-#5: CB-#5



Summary for Pond DW-#1: DW-#1

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.03 cfs @ 12.54 hrs, Volume= 0.012 af, Atten= 82%, Lag= 27.1 min
Discarded = 0.03 cfs @ 12.54 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 511.84' @ 12.54 hrs Surf.Area= 463 sf Storage= 150 cf
Flood Elev= 515.35' Storage= 1,157 cf

Plug-Flow detention time= 35.7 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 34.5 min (794.1 - 759.6)

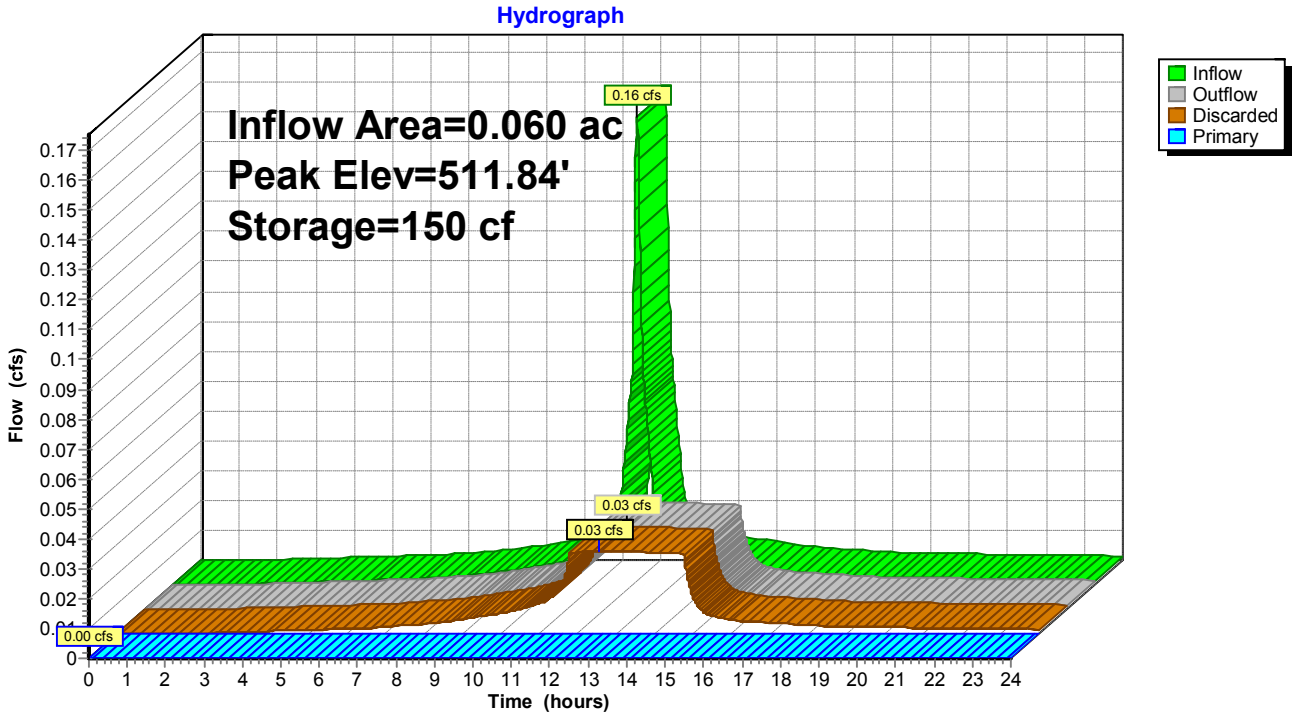
Volume	Invert	Avail.Storage	Storage Description
#1	511.52'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	511.52'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 497.00'
#2	Primary	513.02'	**4.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 513.02' / 506.48' S= 0.0798 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.54 hrs HW=511.84' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=511.52' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond DW-#1: DW-#1


Hydrograph
Inflow Area=0.060 ac
Peak Elev=511.84'
Storage=150 cf
0.16 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#2: DW-#2

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.03 cfs @ 12.54 hrs, Volume= 0.012 af, Atten= 83%, Lag= 27.2 min
Discarded = 0.03 cfs @ 12.54 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 511.01' @ 12.54 hrs Surf.Area= 463 sf Storage= 150 cf
Flood Elev= 514.52' Storage= 1,157 cf

Plug-Flow detention time= 36.0 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 34.8 min (794.4 - 759.6)

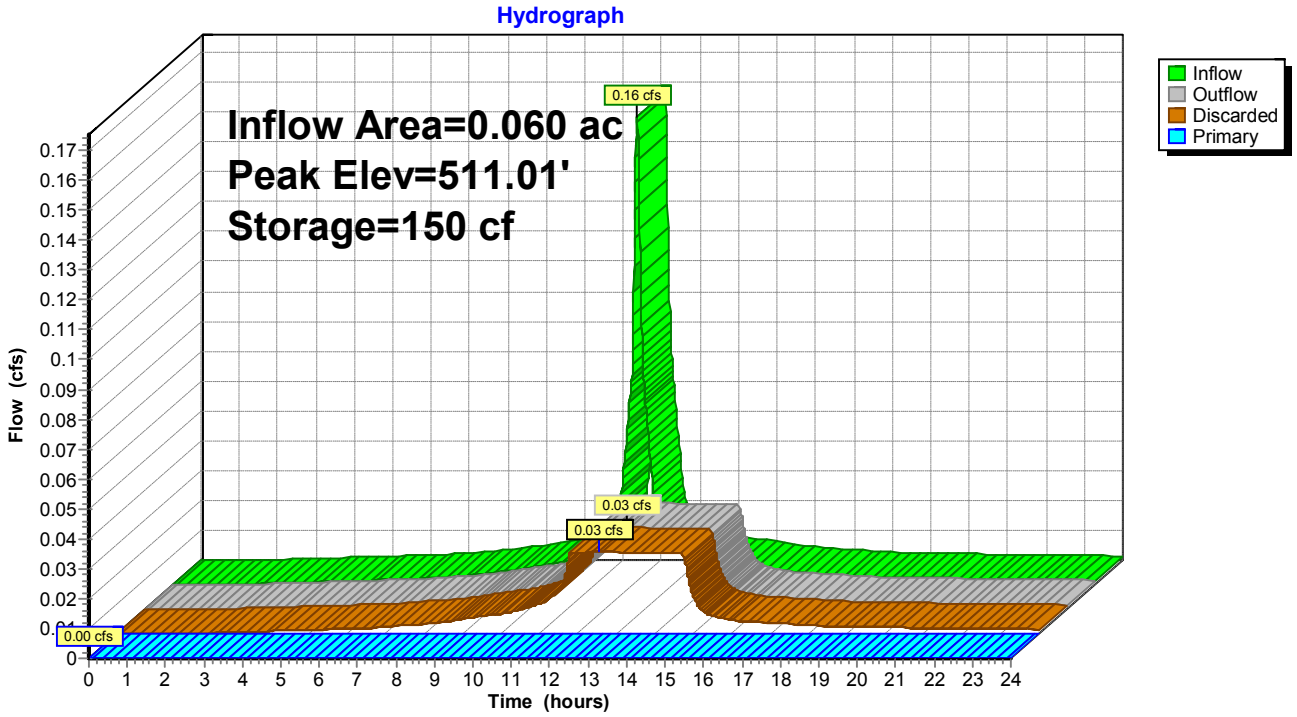
Volume	Invert	Avail.Storage	Storage Description
#1	510.69'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	510.69'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 489.00'
#2	Primary	512.19'	**4.0" Round Culvert** L= 39.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 512.19' / 506.48' S= 0.1464 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.54 hrs HW=511.01' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=510.69' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#2: DW-#2


Hydrograph
Inflow Area=0.060 ac
Peak Elev=511.01'
Storage=150 cf
0.16 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#3: DW-#3

Inflow Area = 0.058 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.01 cfs @ 13.53 hrs, Volume= 0.012 af, Atten= 94%, Lag= 87.1 min
Discarded = 0.01 cfs @ 13.53 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 506.65' @ 13.53 hrs Surf.Area= 153 sf Storage= 219 cf
Flood Elev= 509.29' Storage= 386 cf

Plug-Flow detention time= 186.0 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 184.5 min (944.1 - 759.6)

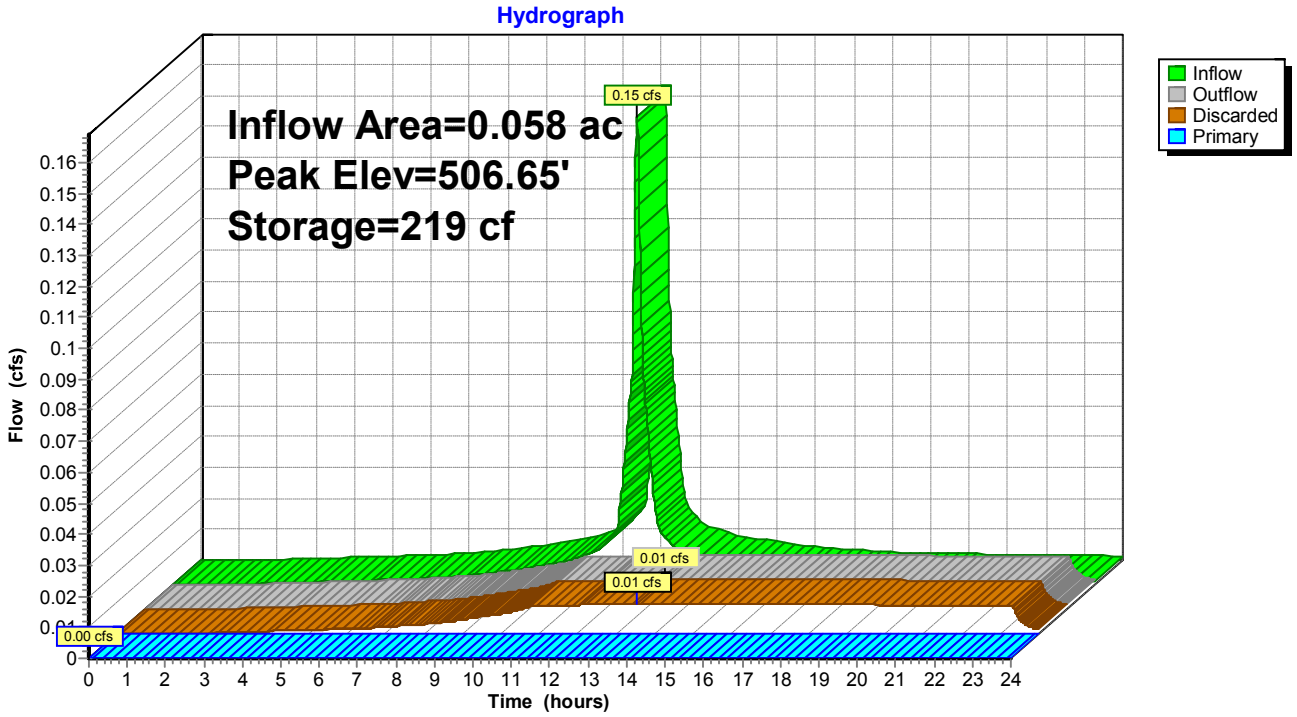
Volume	Invert	Avail.Storage	Storage Description
#1	505.24'	386 cf	**Shea Dry Well 1000gal** x 3 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	505.24'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 489.00'
#2	Primary	506.74'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 506.74' / 506.48' S= 0.0153 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.01 cfs @ 13.53 hrs HW=506.65' (Free Discharge)
└**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=505.24' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond DW-#3: DW-#3


Hydrograph
Inflow Area=0.058 ac
Peak Elev=506.65'
Storage=219 cf
0.15 cfs
0.01 cfs
0.01 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#4: DW-#4

Inflow Area = 0.058 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.03 cfs @ 12.53 hrs, Volume= 0.012 af, Atten= 82%, Lag= 26.7 min
Discarded = 0.03 cfs @ 12.53 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 503.11' @ 12.53 hrs Surf.Area= 463 sf Storage= 145 cf
Flood Elev= 507.74' Storage= 1,157 cf

Plug-Flow detention time= 36.4 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 34.9 min (794.4 - 759.6)

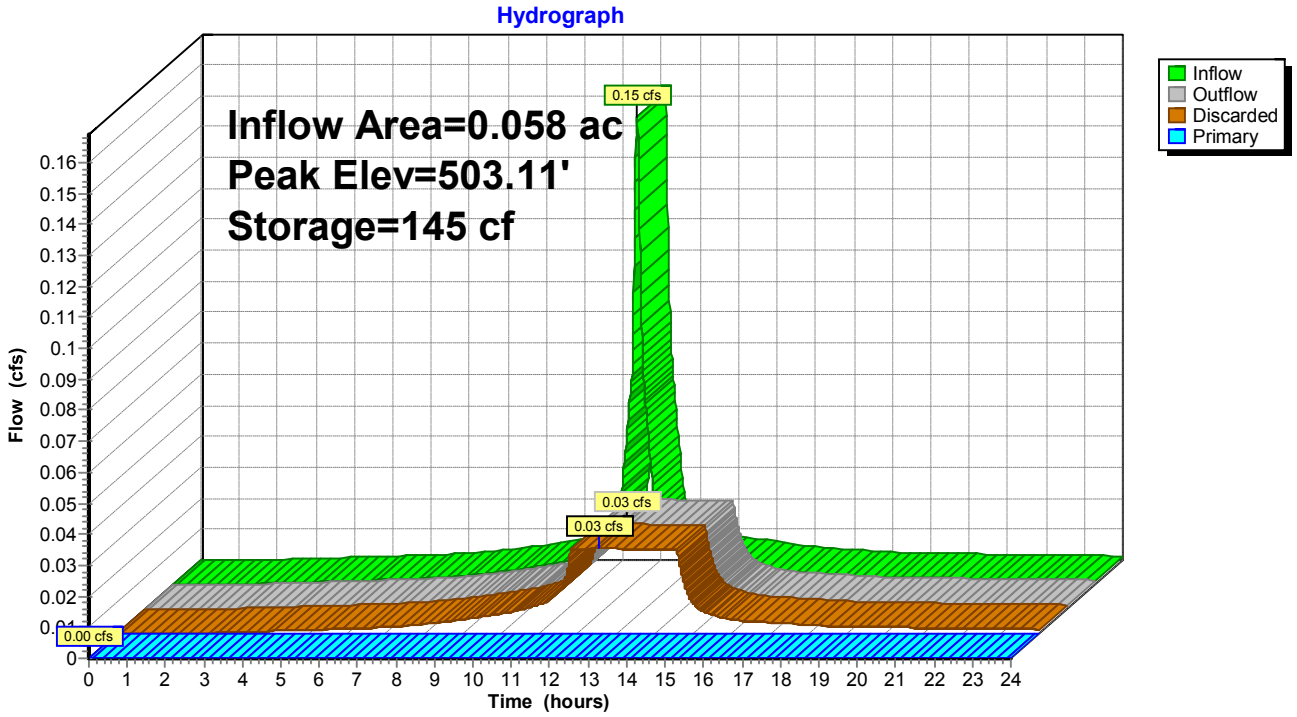
Volume	Invert	Avail.Storage	Storage Description
#1	502.80'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	502.80'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 488.00'
#2	Primary	504.30'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 504.30' / 503.03' S= 0.0747 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.53 hrs HW=503.11' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=502.80' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#4: DW-#4


Hydrograph
Inflow Area=0.058 ac
Peak Elev=503.11'
Storage=145 cf
0.15 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#5: DW-#5

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.03 cfs @ 12.54 hrs, Volume= 0.012 af, Atten= 82%, Lag= 27.1 min
Discarded = 0.03 cfs @ 12.54 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 499.69' @ 12.54 hrs Surf.Area= 463 sf Storage= 153 cf
Flood Elev= 504.23' Storage= 1,157 cf

Plug-Flow detention time= 38.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 36.6 min (796.1 - 759.6)

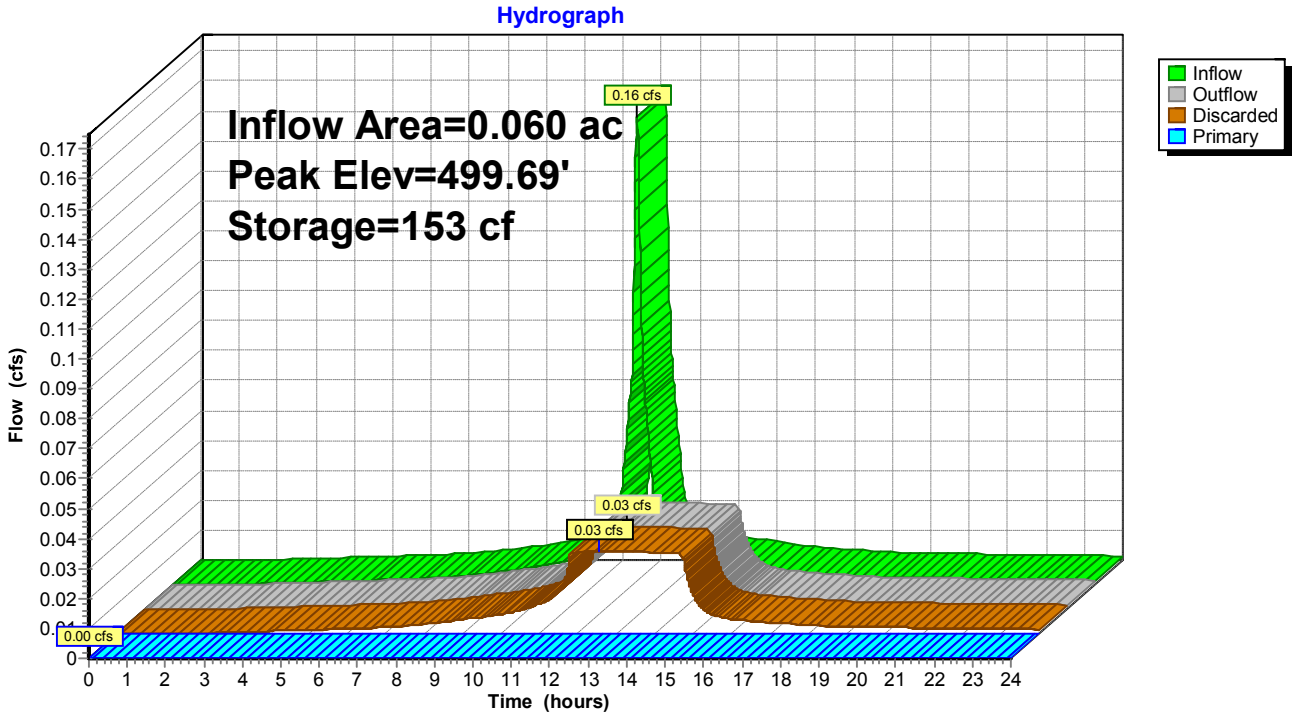
Volume	Invert	Avail.Storage	Storage Description
#1	499.36'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	499.36'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 483.00'
#2	Primary	500.86'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.86' / 500.35' S= 0.0300 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.54 hrs HW=499.69' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=499.36' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#5: DW-#5


Hydrograph
Inflow Area=0.060 ac
Peak Elev=499.69'
Storage=153 cf
0.16 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#6: DW-#6

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 2.47" for 1-year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.03 cfs @ 12.53 hrs, Volume= 0.012 af, Atten= 82%, Lag= 26.8 min
Discarded = 0.03 cfs @ 12.53 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 498.19' @ 12.53 hrs Surf.Area= 463 sf Storage= 151 cf
Flood Elev= 502.70' Storage= 1,157 cf

Plug-Flow detention time= 37.2 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 35.7 min (795.3 - 759.6)

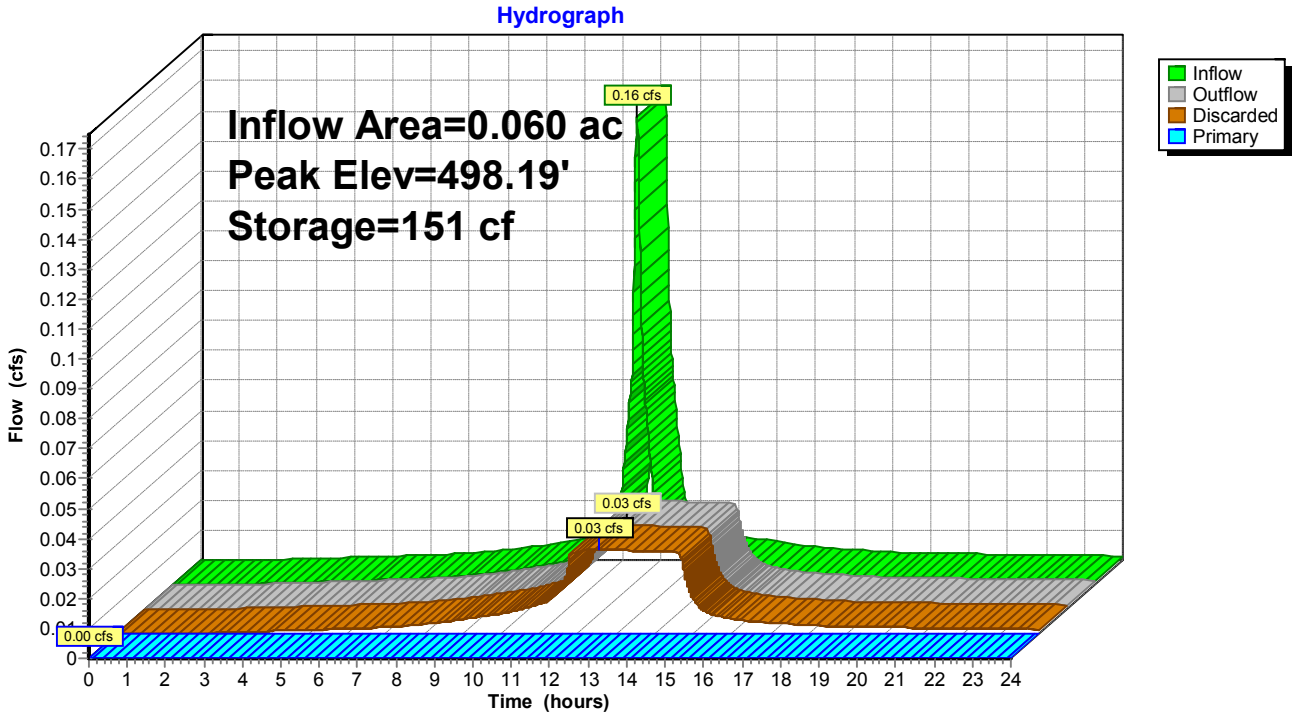
Volume	Invert	Avail.Storage	Storage Description
#1	497.87'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	497.87'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 490.00'
#2	Primary	499.37'	**4.0" Round Culvert** L= 13.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 499.37' / 496.88' S= 0.1791 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.53 hrs HW=498.19' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=497.87' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#6: DW-#6


Hydrograph
Inflow Area=0.060 ac
Peak Elev=498.19'
Storage=151 cf
0.16 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond SDMH #5: SDMH #5

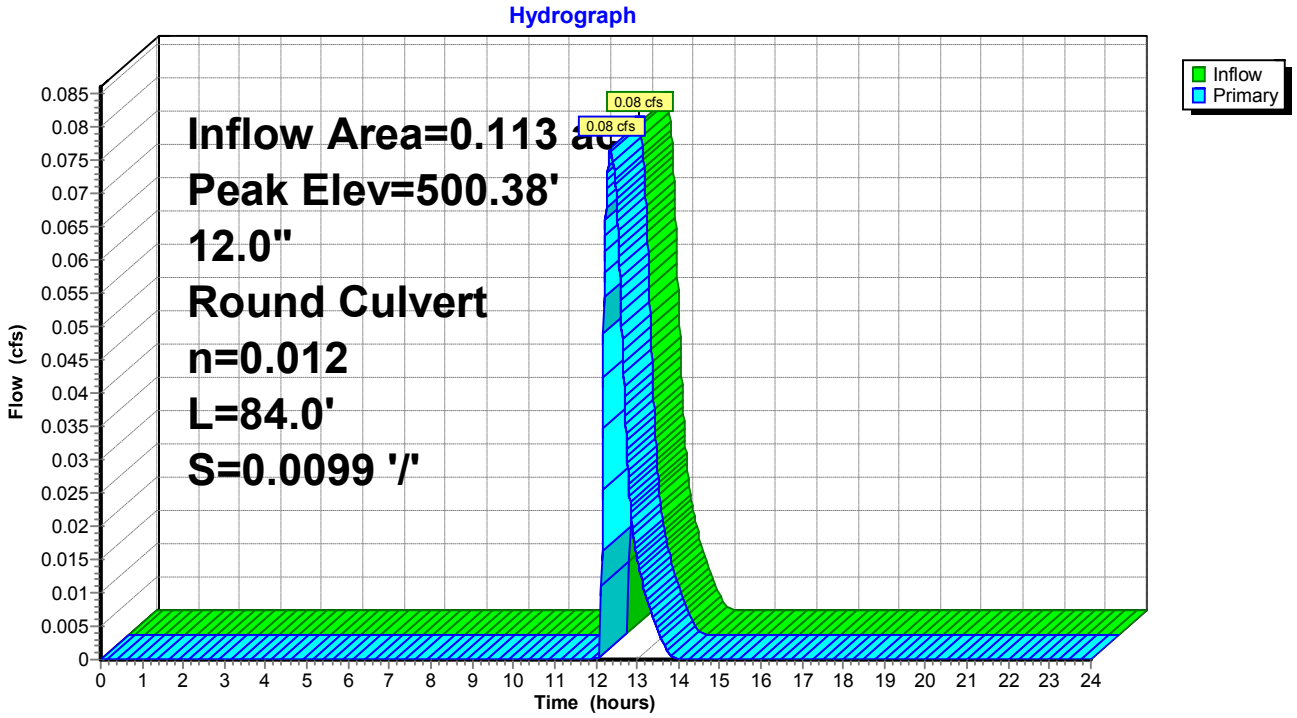
Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 0.41" for 1-year event
Inflow = 0.08 cfs @ 12.37 hrs, Volume= 0.004 af
Outflow = 0.08 cfs @ 12.37 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.08 cfs @ 12.37 hrs, Volume= 0.004 af
Routed to Pond SDMH #6 : SDMH #6

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 500.38' @ 12.37 hrs
Flood Elev= 505.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	500.25'	**12.0" Round Culvert** L= 84.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.25' / 499.42' S= 0.0099 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.07 cfs @ 12.37 hrs HW=500.38' (Free Discharge)
1=Culvert (Barrel Controls 0.07 cfs @ 1.88 fps)

Pond SDMH #5: SDMH #5



Summary for Pond SDMH #6: SDMH #6

[79] Warning: Submerged Pond SDMH #5 Primary device # 1 OUTLET by 0.19'

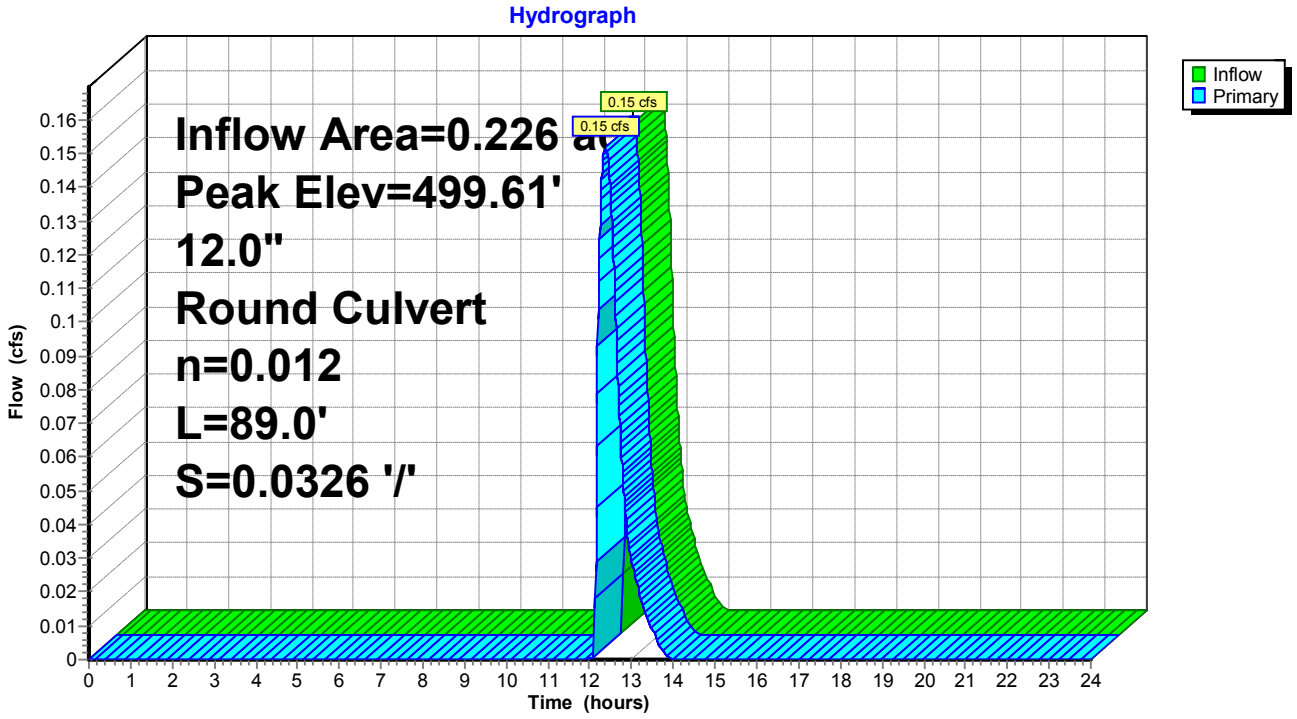
Inflow Area = 0.226 ac,100.00% Impervious, Inflow Depth = 0.40" for 1-year event
Inflow = 0.15 cfs @ 12.37 hrs, Volume= 0.008 af
Outflow = 0.15 cfs @ 12.37 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.37 hrs, Volume= 0.008 af
Routed to Pond SDMH #7 : SDMH #7

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 499.61' @ 12.37 hrs
Flood Elev= 505.89'

Device	Routing	Invert	Outlet Devices
#1	Primary	499.42'	**12.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 499.42' / 496.52' S= 0.0326 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.37 hrs HW=499.61' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.47 fps)

Pond SDMH #6: SDMH #6



Summary for Pond SDMH #7: SDMH #7

[79] Warning: Submerged Pond SDMH #6 Primary device # 1 OUTLET by 0.14'

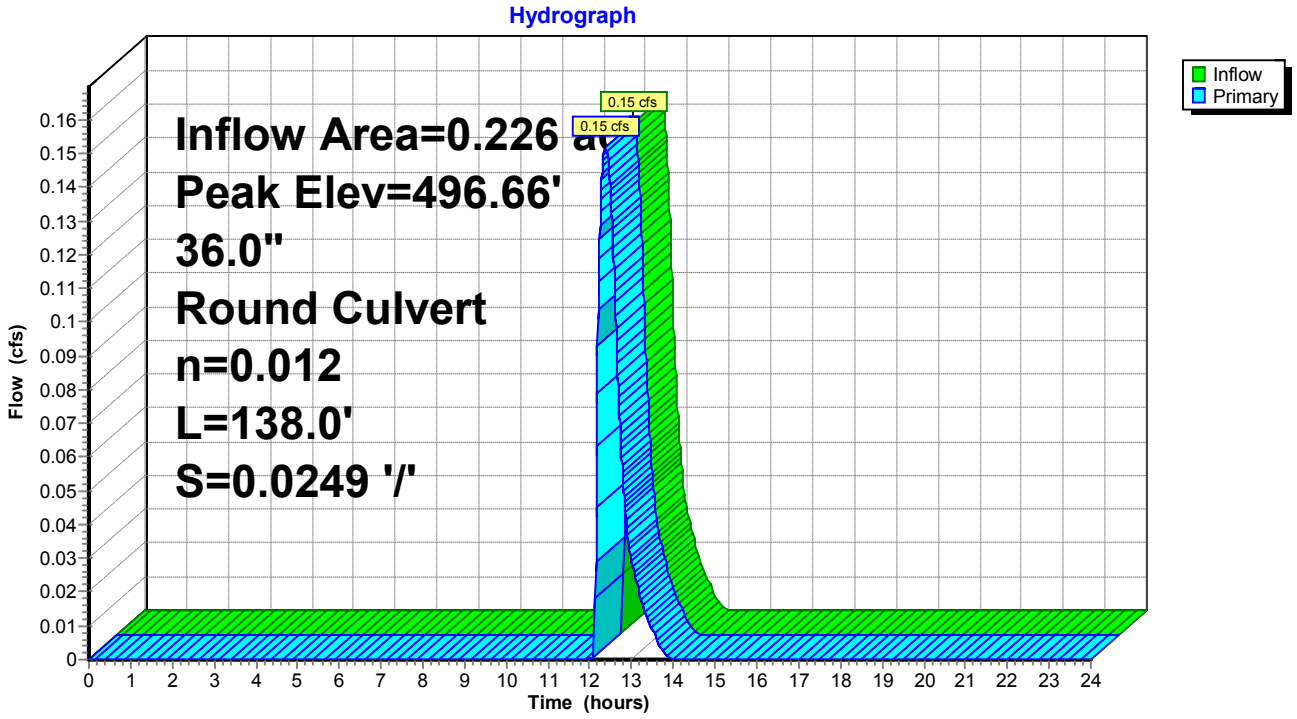
Inflow Area = 0.226 ac,100.00% Impervious, Inflow Depth = 0.40" for 1-year event
Inflow = 0.15 cfs @ 12.37 hrs, Volume= 0.008 af
Outflow = 0.15 cfs @ 12.37 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.37 hrs, Volume= 0.008 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.66' @ 12.37 hrs
Flood Elev= 503.74'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.52'	**36.0" Round Culvert** L= 138.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.52' / 493.08' S= 0.0249 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=0.15 cfs @ 12.37 hrs HW=496.66' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.27 fps)

Pond SDMH #7: SDMH #7



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment POST-WS1: POST-WS1A Runoff Area=13,077 sf 71.55% Impervious Runoff Depth>3.98"
Flow Length=212' Tc=6.0 min CN=91 Runoff=1.34 cfs 0.100 af

Subcatchment POST-WS1B: POST-WS1B Runoff Area=5,790 sf 100.00% Impervious Runoff Depth>4.76"
Flow Length=212' Tc=6.0 min CN=98 Runoff=0.65 cfs 0.053 af

Subcatchment POST-WS1C: POST-WS1C Runoff Area=4,054 sf 100.00% Impervious Runoff Depth>4.76"
Flow Length=98' Slope=0.0750 '/' Tc=6.0 min CN=98 Runoff=0.46 cfs 0.037 af

Subcatchment POST-WS2: POST-WS2 Runoff Area=66,602 sf 0.00% Impervious Runoff Depth>2.53"
Flow Length=297' Tc=17.3 min CN=76 Runoff=3.24 cfs 0.322 af

Subcatchment POST-WS3A: POST-WS3A Runoff Area=8,533 sf 0.00% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=74 Runoff=0.54 cfs 0.039 af

Subcatchment POST-WS3B-1: POST-WS3B Runoff Area=4,943 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.56 cfs 0.045 af

Subcatchment POST-WS4A: POST-WS4A Runoff Area=6,873 sf 0.00% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=74 Runoff=0.44 cfs 0.031 af

Subcatchment POST-WS4B-1: Runoff Area=4,904 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.55 cfs 0.045 af

Subcatchment POST-WS5A: POST-WS5A Runoff Area=8,212 sf 0.00% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=74 Runoff=0.52 cfs 0.037 af

Subcatchment POST-WS5B-1: Runoff Area=4,895 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.55 cfs 0.045 af

Subcatchment POST-WS6A: POST-WS6A Runoff Area=6,416 sf 0.00% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=74 Runoff=0.41 cfs 0.029 af

Subcatchment POST-WS6B-1: Runoff Area=2,615 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment POST-WS6B-2: Runoff Area=2,615 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment POST-WS7A: POST-WS7A Runoff Area=6,093 sf 0.00% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=74 Runoff=0.39 cfs 0.028 af

Subcatchment POST-WS7B-1: Runoff Area=2,520 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.023 af

Subcatchment POST-WS7B-2: Runoff Area=2,520 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.023 af

Subcatchment POST-WS8A: POST-WS8A Runoff Area=6,216 sf 0.00% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=74 Runoff=0.39 cfs 0.028 af

Subcatchment POST-WS8B-1: Runoff Area=2,608 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment POST-WS8B-2: Runoff Area=2,608 sf 100.00% Impervious Runoff Depth>4.76"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment PRE-WS1: PRE-WS1 Runoff Area=15,523 sf 0.00% Impervious Runoff Depth>3.17"
Flow Length=415' Tc=6.0 min CN=83 Runoff=1.32 cfs 0.094 af

Subcatchment PRE-WS2: PRE-WS2 Runoff Area=75,925 sf 0.00% Impervious Runoff Depth>2.53"
Flow Length=297' Tc=17.3 min CN=76 Runoff=3.70 cfs 0.367 af

Subcatchment PRE-WS3: PRE-WS3 Runoff Area=13,477 sf 0.00% Impervious Runoff Depth>3.17"
Flow Length=149' Tc=9.7 min CN=83 Runoff=1.01 cfs 0.082 af

Subcatchment PRE-WS4: PRE-WS4 Runoff Area=11,780 sf 0.00% Impervious Runoff Depth>3.26"
Flow Length=166' Tc=12.2 min CN=84 Runoff=0.84 cfs 0.074 af

Subcatchment PRE-WS5: PRE-WS5 Runoff Area=13,106 sf 0.00% Impervious Runoff Depth>3.07"
Flow Length=165' Tc=10.3 min CN=82 Runoff=0.94 cfs 0.077 af

Subcatchment PRE-WS6: PRE-WS6 Runoff Area=11,646 sf 0.00% Impervious Runoff Depth>3.07"
Flow Length=78' Slope=0.1350 '/' Tc=8.5 min CN=82 Runoff=0.88 cfs 0.068 af

Subcatchment PRE-WS7: PRE-WS7 Runoff Area=11,133 sf 0.00% Impervious Runoff Depth>3.07"
Flow Length=87' Slope=0.0700 '/' Tc=12.0 min CN=82 Runoff=0.76 cfs 0.065 af

Subcatchment PRE-WS8: PRE-WS8 Runoff Area=11,431 sf 0.00% Impervious Runoff Depth>3.07"
Flow Length=135' Tc=13.8 min CN=82 Runoff=0.74 cfs 0.067 af

Reach POST: POST Inflow=8.27 cfs 0.762 af
Outflow=8.27 cfs 0.762 af

Reach PRE: PRE Inflow=9.22 cfs 0.894 af
Outflow=9.22 cfs 0.894 af

Pond ADS-#1: ADS-#1 Peak Elev=502.78' Storage=473 cf Inflow=0.56 cfs 0.045 af
Discarded=0.02 cfs 0.027 af Primary=0.36 cfs 0.018 af Outflow=0.38 cfs 0.045 af

Pond ADS-#2: ADS-#2 Peak Elev=502.77' Storage=471 cf Inflow=0.55 cfs 0.045 af
Discarded=0.02 cfs 0.027 af Primary=0.36 cfs 0.018 af Outflow=0.38 cfs 0.045 af

Pond ADS-#3: ADS-#3 Peak Elev=501.71' Storage=454 cf Inflow=0.55 cfs 0.045 af
Discarded=0.02 cfs 0.027 af Primary=0.37 cfs 0.017 af Outflow=0.39 cfs 0.045 af

Pond CB-#1: CB-#1 Peak Elev=507.47' Inflow=0.46 cfs 0.037 af
15.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=0.46 cfs 0.037 af

Pond CB-#2: CB-#2 Peak Elev=506.83' Inflow=0.58 cfs 0.044 af
15.0" Round Culvert n=0.013 L=132.0' S=0.0764 '/' Outflow=0.58 cfs 0.044 af

Pond CB-#3: CB-#3 Peak Elev=496.92' Inflow=1.21 cfs 0.097 af
18.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=1.21 cfs 0.097 af

Pond CB-#4: CB-#4 Peak Elev=496.51' Inflow=1.21 cfs 0.097 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0560 '/' Outflow=1.21 cfs 0.097 af

Pond CB-#5: CB-#5 Peak Elev=489.58' Inflow=2.54 cfs 0.196 af
24.0" Round Culvert n=0.013 L=21.0' S=0.0052 '/' Outflow=2.54 cfs 0.196 af

Pond DW-#1: DW-#1 Peak Elev=512.29' Storage=362 cf Inflow=0.29 cfs 0.024 af
Discarded=0.03 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.024 af

Pond DW-#2: DW-#2 Peak Elev=511.47' Storage=364 cf Inflow=0.29 cfs 0.024 af
Discarded=0.03 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.024 af

Pond DW-#3: DW-#3 Peak Elev=507.09' Storage=287 cf Inflow=0.28 cfs 0.023 af
Discarded=0.01 cfs 0.014 af Primary=0.18 cfs 0.007 af Outflow=0.19 cfs 0.021 af

Pond DW-#4: DW-#4 Peak Elev=503.55' Storage=349 cf Inflow=0.28 cfs 0.023 af
Discarded=0.03 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.023 af

Pond DW-#5: DW-#5 Peak Elev=500.14' Storage=366 cf Inflow=0.29 cfs 0.024 af
Discarded=0.03 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.024 af

Pond DW-#6: DW-#6 Peak Elev=498.64' Storage=362 cf Inflow=0.29 cfs 0.024 af
Discarded=0.03 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.024 af

Pond SDMH #5: SDMH #5 Peak Elev=500.55' Inflow=0.36 cfs 0.018 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0099 '/' Outflow=0.36 cfs 0.018 af

Pond SDMH #6: SDMH #6 Peak Elev=499.85' Inflow=0.72 cfs 0.036 af
12.0" Round Culvert n=0.012 L=89.0' S=0.0326 '/' Outflow=0.72 cfs 0.036 af

Pond SDMH #7: SDMH #7 Peak Elev=496.83' Inflow=0.72 cfs 0.036 af
36.0" Round Culvert n=0.012 L=138.0' S=0.0249 '/' Outflow=0.72 cfs 0.036 af

Total Runoff Area = 7.487 ac Runoff Volume = 1.872 af Average Runoff Depth = 3.00"
84.84% Pervious = 6.352 ac 15.16% Impervious = 1.135 ac

Summary for Subcatchment POST-WS1: POST-WS1A

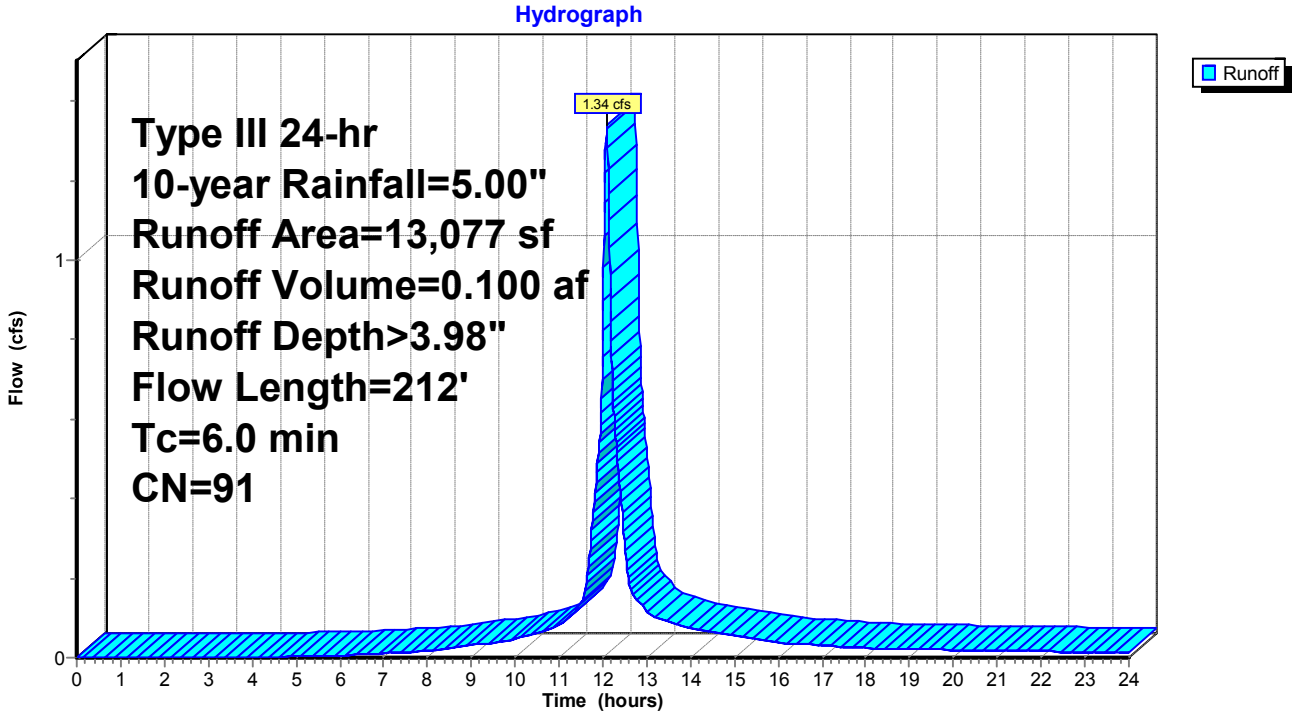
Runoff = 1.34 cfs @ 12.08 hrs, Volume= 0.100 af, Depth> 3.98"
Routed to Pond CB-#5 : CB-#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
9,356	98	Paved parking, HSG C
1,996	72	Woods/grass comb., Good, HSG C
1,725	74	>75% Grass cover, Good, HSG C
13,077	91	Weighted Average
3,721		28.45% Pervious Area
9,356		71.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0698	2.20		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	112	0.0253	2.56		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.5	212	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1: POST-WS1A



Summary for Subcatchment POST-WS1B: POST-WS1B

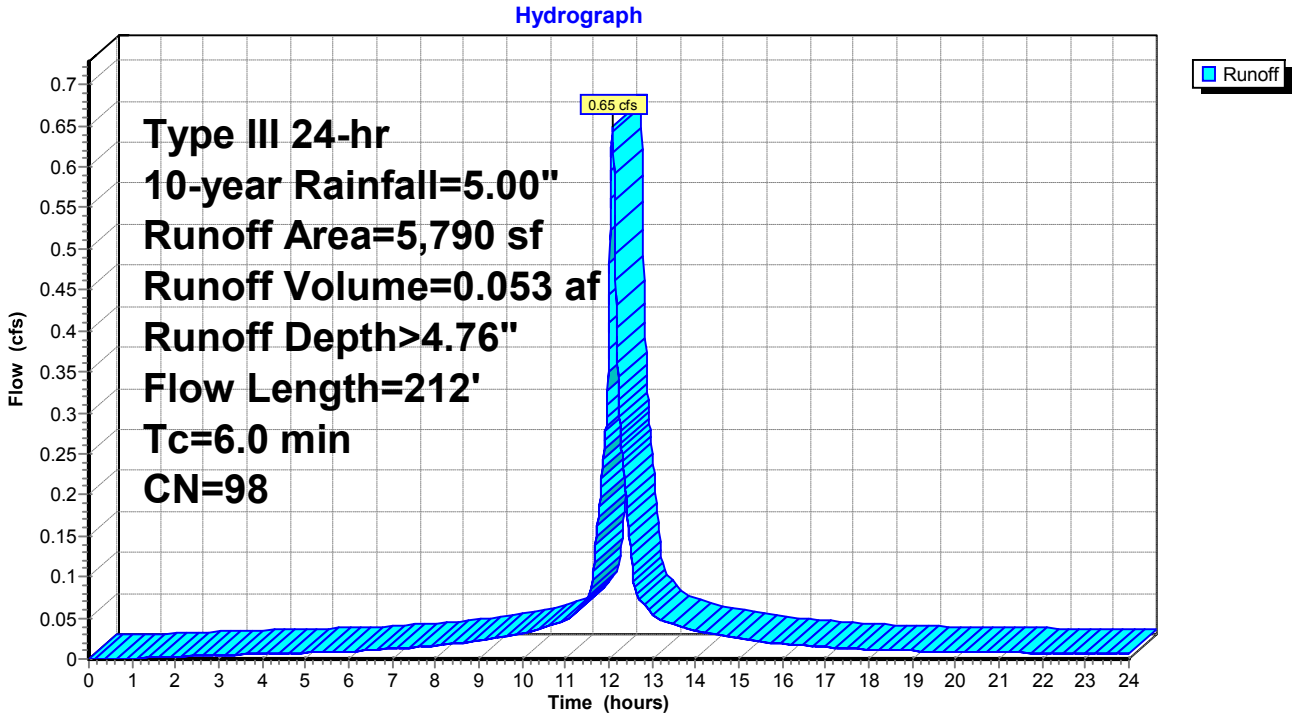
Runoff = 0.65 cfs @ 12.08 hrs, Volume= 0.053 af, Depth> 4.76"
Routed to Pond CB-#3 : CB-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
5,790	98	Paved parking, HSG C
5,790		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0842	2.37		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	112	0.0760	4.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.1	212	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1B: POST-WS1B



Summary for Subcatchment POST-WS1C: POST-WS1C

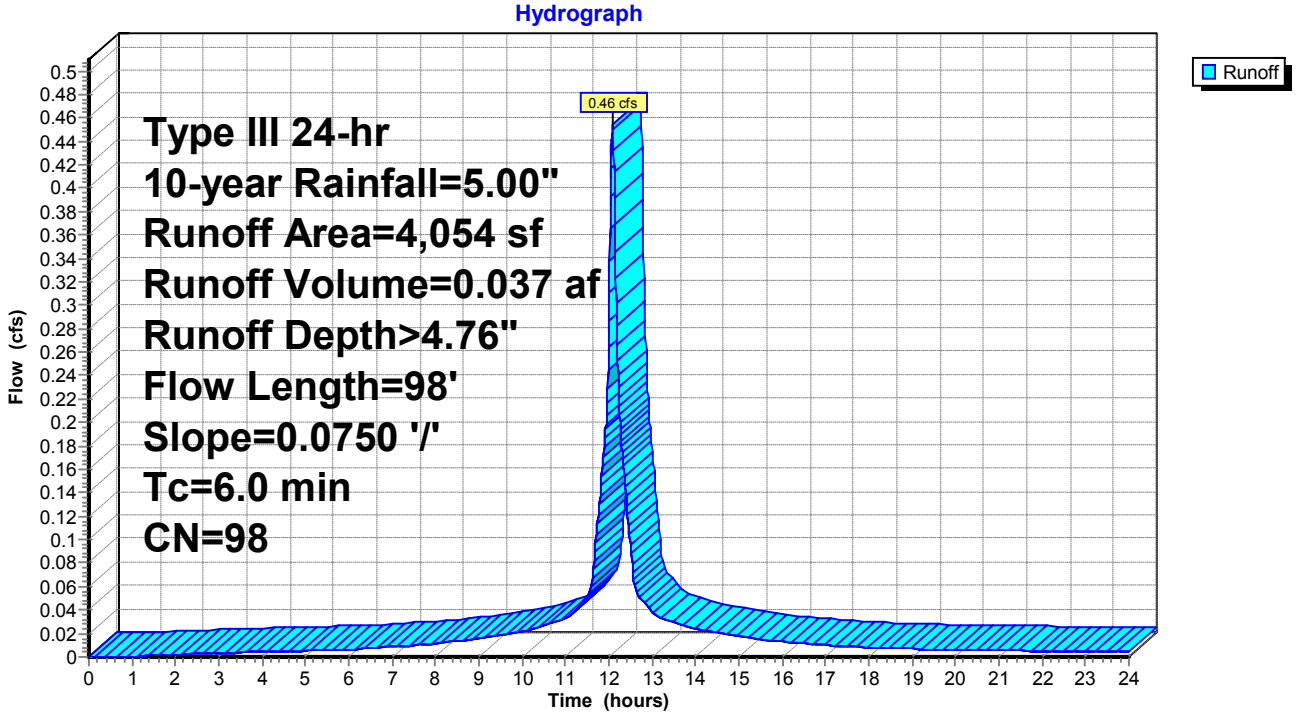
Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.037 af, Depth> 4.76"
Routed to Pond CB-#1 : CB-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
4,054	98	Paved parking, HSG C
4,054		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	98	0.0750	2.25		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	98	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1C: POST-WS1C



Summary for Subcatchment POST-WS2: POST-WS2

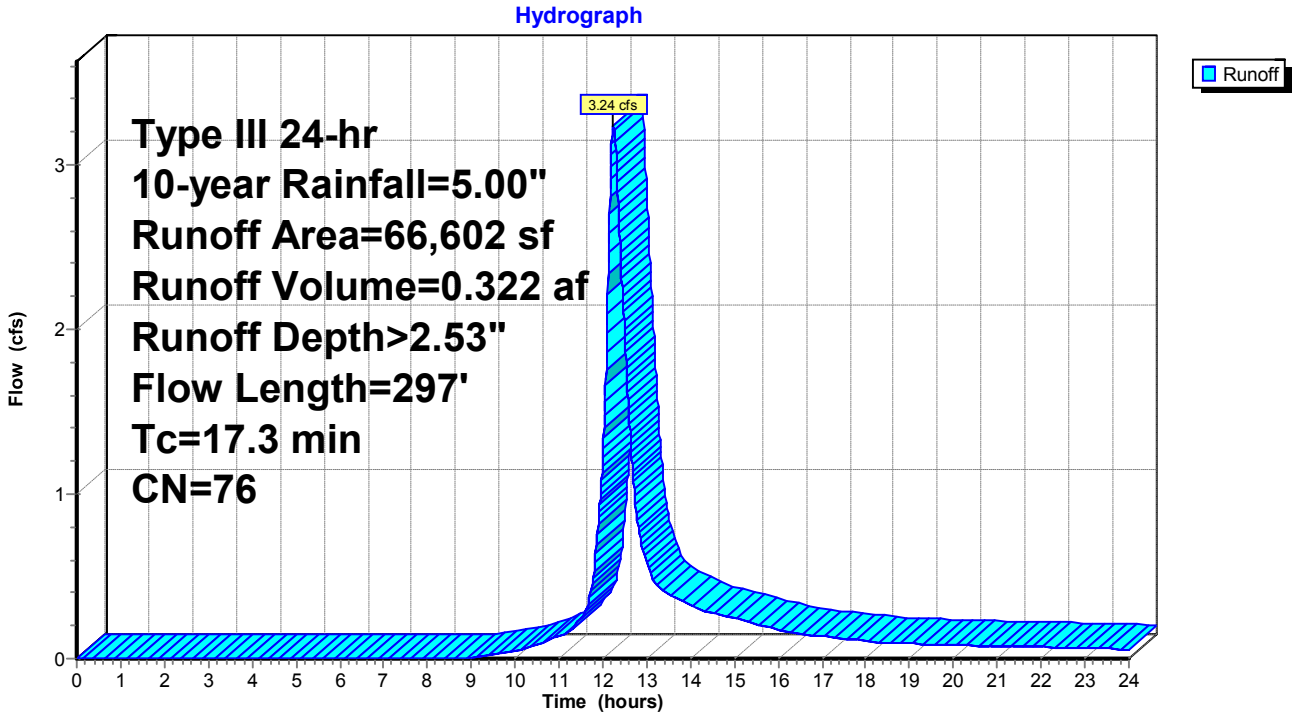
Runoff = 3.24 cfs @ 12.24 hrs, Volume= 0.322 af, Depth> 2.53"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
61,525	76	Woods/grass comb., Fair, HSG C
5,077	74	>75% Grass cover, Good, HSG C
66,602	76	Weighted Average
66,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0600	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
3.0	197	0.0480	1.10		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.3	297	Total			

Subcatchment POST-WS2: POST-WS2



Summary for Subcatchment POST-WS3A: POST-WS3A

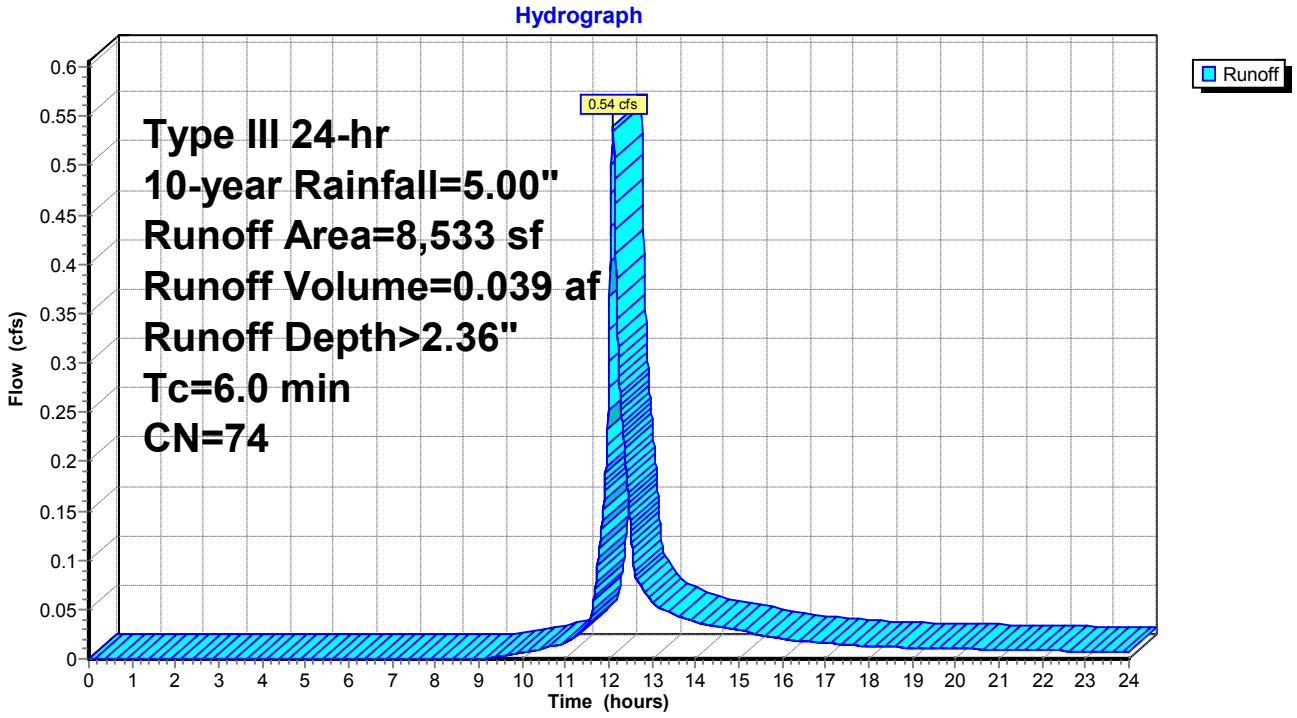
Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Depth> 2.36"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
8,533	74	>75% Grass cover, Good, HSG C
8,533		100.00% Pervious Area

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

Subcatchment POST-WS3A: POST-WS3A



Summary for Subcatchment POST-WS3B-1: POST-WS3B

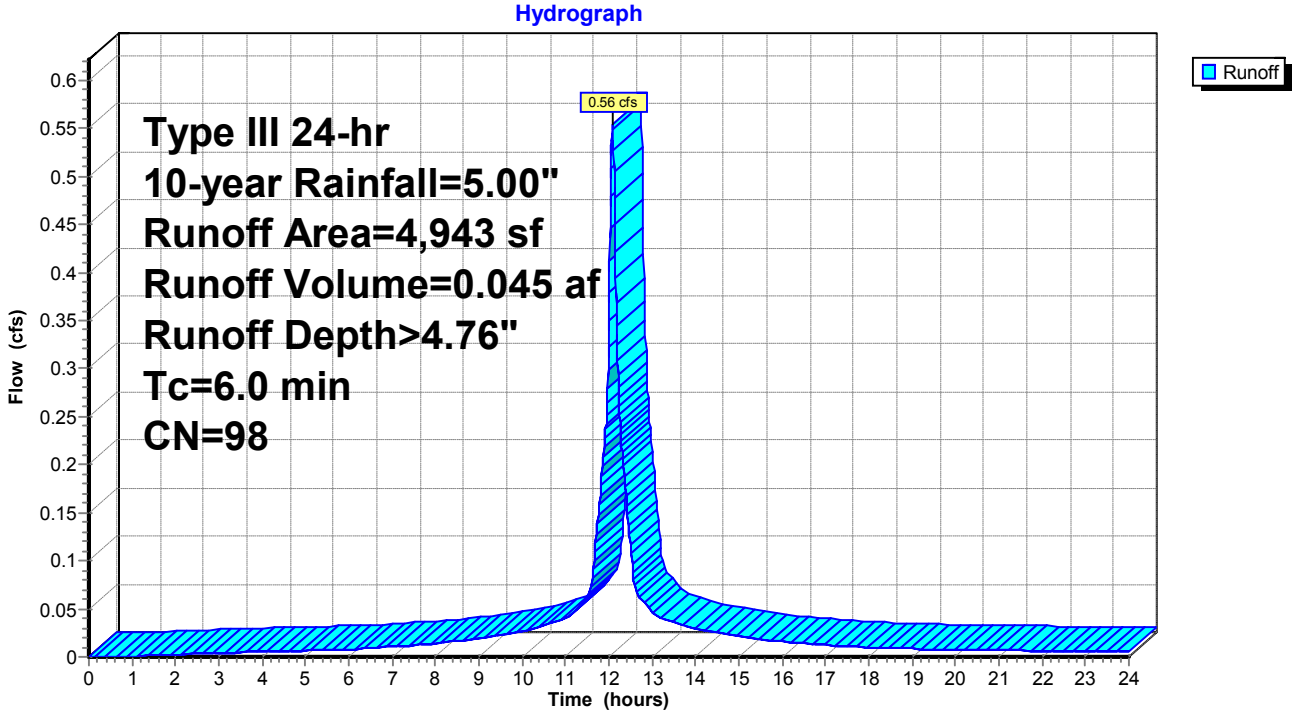
Runoff = 0.56 cfs @ 12.08 hrs, Volume= 0.045 af, Depth> 4.76"
Routed to Pond ADS-#1 : ADS-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
4,943	98	Paved roads w/curbs & sewers, HSG C
4,943		100.00% Impervious Area

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

Subcatchment POST-WS3B-1: POST-WS3B



Summary for Subcatchment POST-WS4A: POST-WS4A

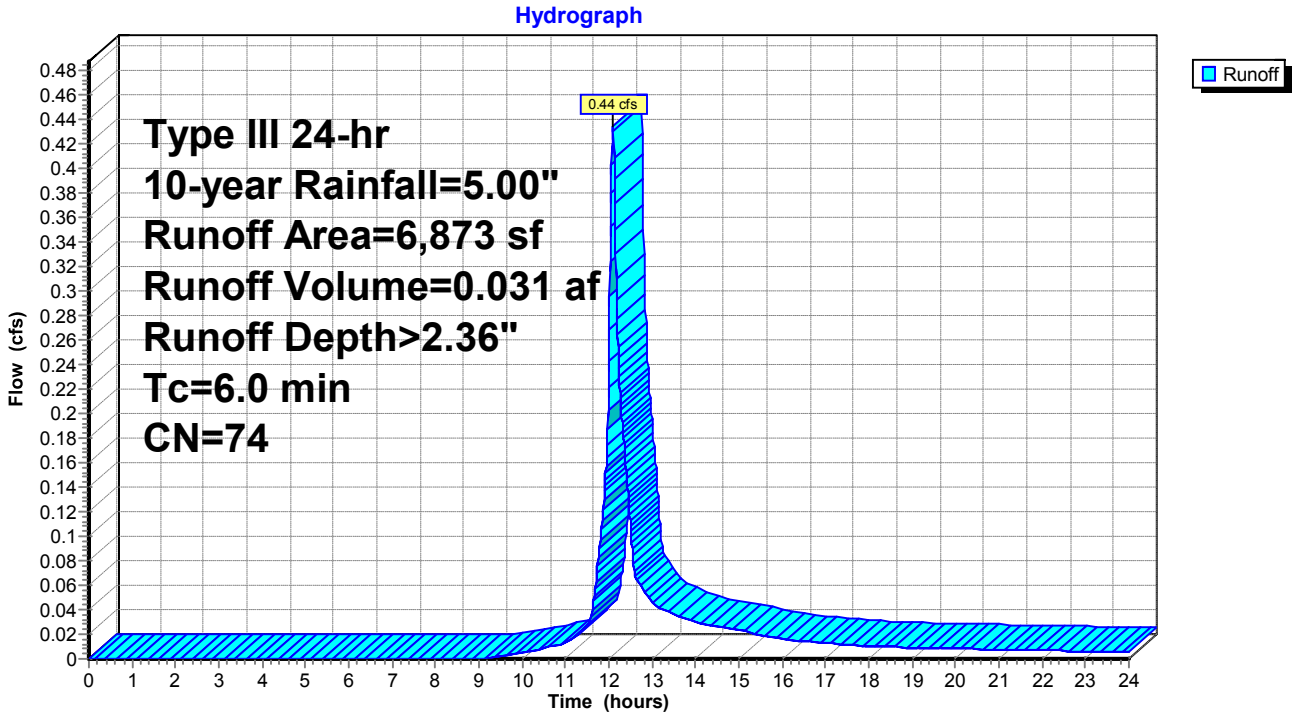
Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 2.36"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
6,873	74	>75% Grass cover, Good, HSG C
6,873		100.00% Pervious Area

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

Subcatchment POST-WS4A: POST-WS4A



Summary for Subcatchment POST-WS4B-1: POST-WS4B-1

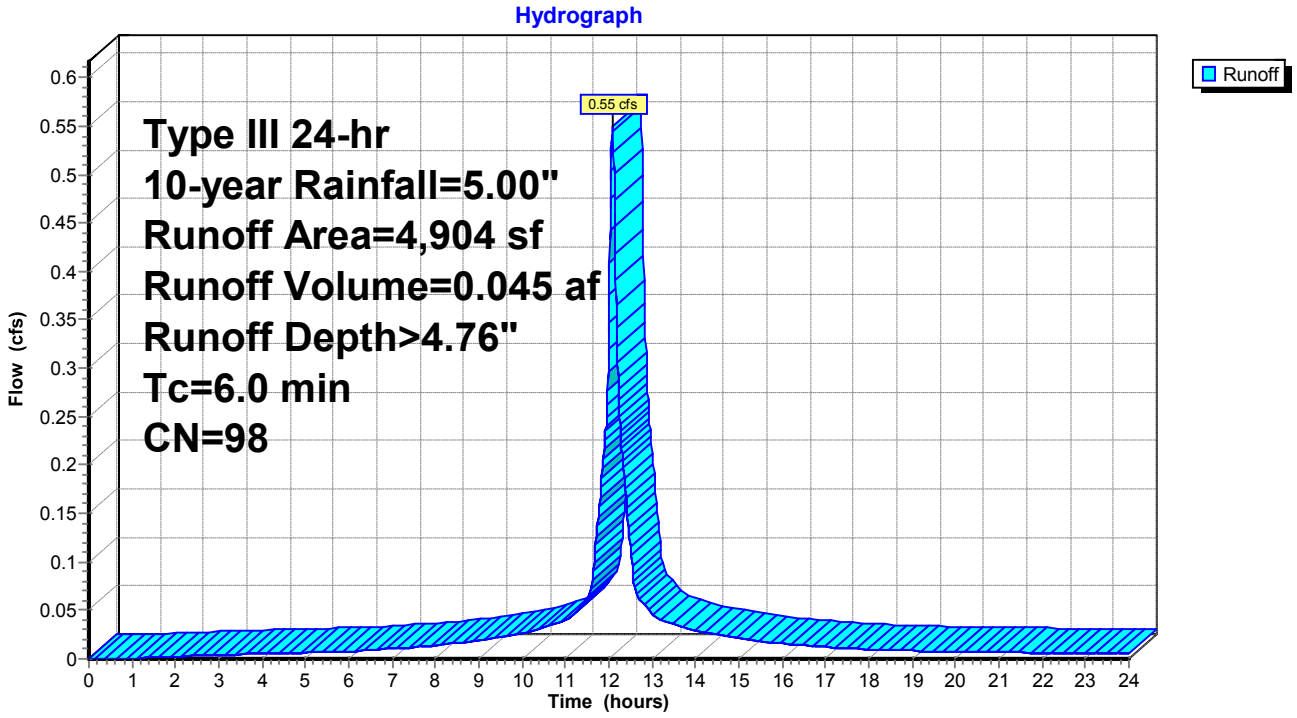
Runoff = 0.55 cfs @ 12.08 hrs, Volume= 0.045 af, Depth> 4.76"
Routed to Pond ADS-#2 : ADS-#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
4,904	98	Paved roads w/curbs & sewers, HSG C
4,904		100.00% Impervious Area

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

Subcatchment POST-WS4B-1: POST-WS4B-1



Summary for Subcatchment POST-WS5A: POST-WS5A

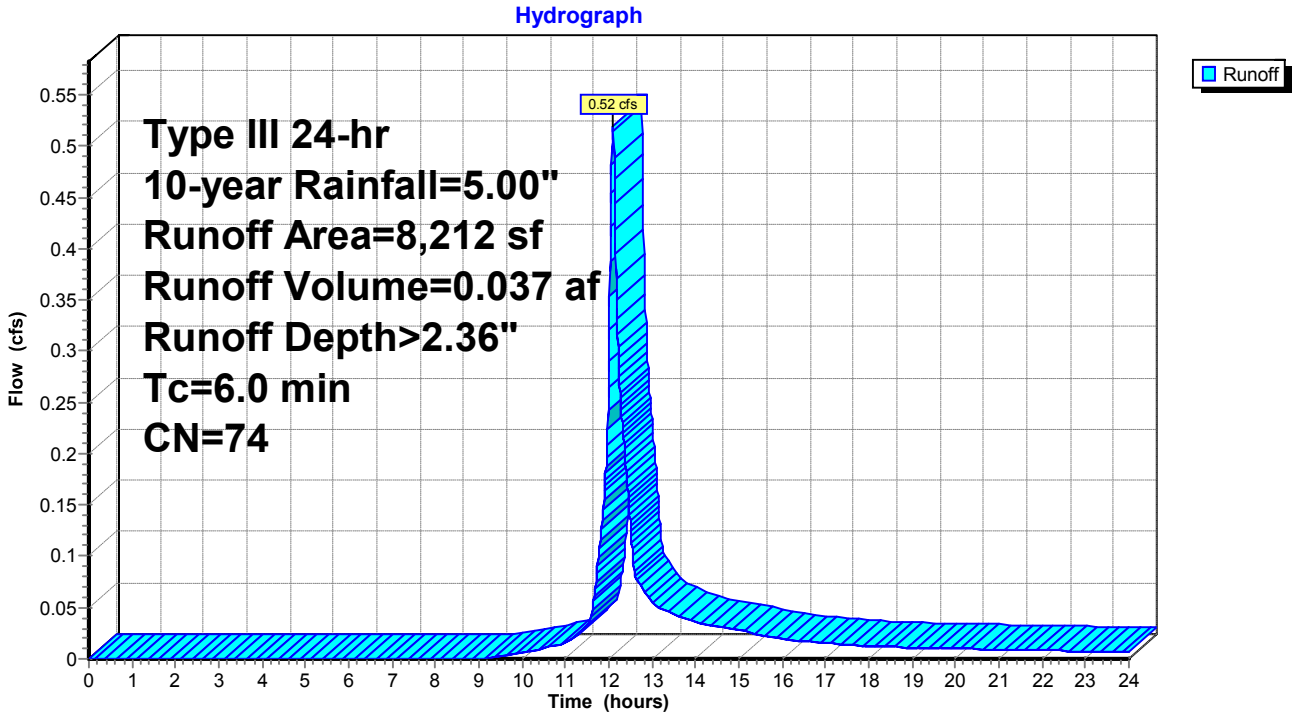
Runoff = 0.52 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 2.36"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
8,212	74	>75% Grass cover, Good, HSG C
8,212		100.00% Pervious Area

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

Subcatchment POST-WS5A: POST-WS5A



Summary for Subcatchment POST-WS5B-1: POST-WS5B-1

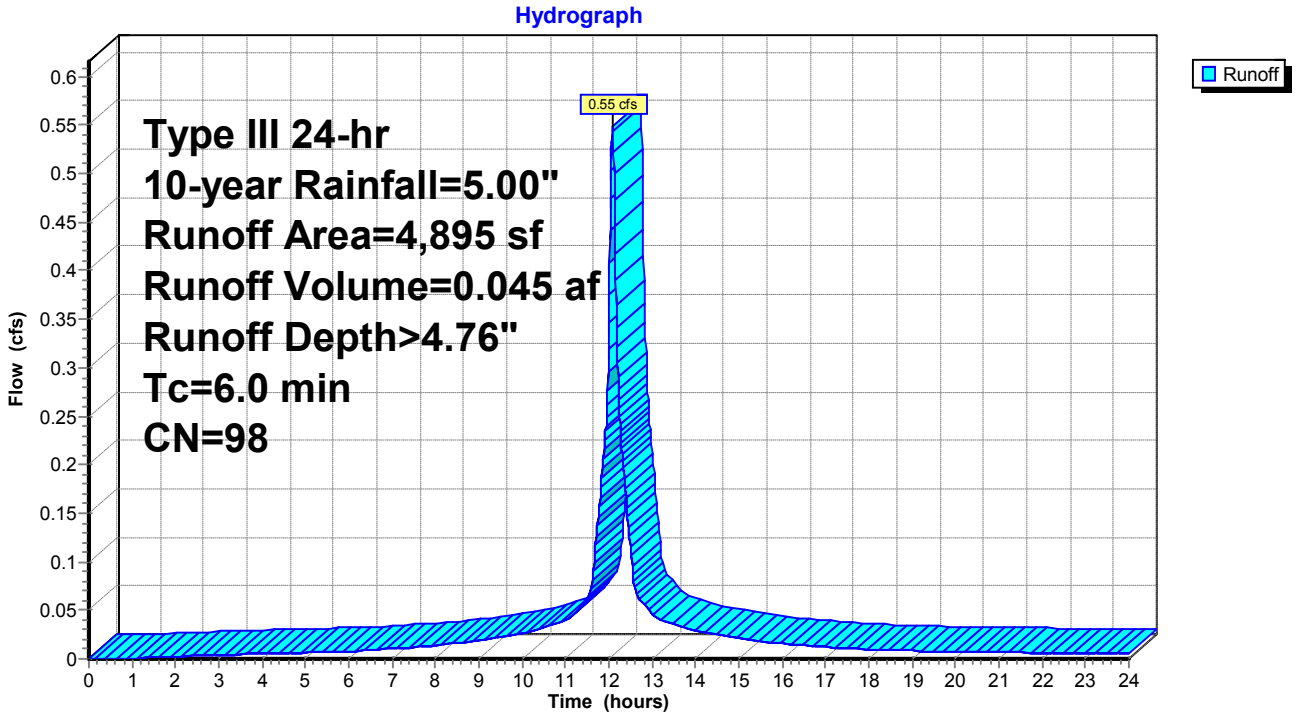
Runoff = 0.55 cfs @ 12.08 hrs, Volume= 0.045 af, Depth> 4.76"
Routed to Pond ADS-#3 : ADS-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
4,895	98	Paved roads w/curbs & sewers, HSG C
4,895		100.00% Impervious Area

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

Subcatchment POST-WS5B-1: POST-WS5B-1



Summary for Subcatchment POST-WS6A: POST-WS6A

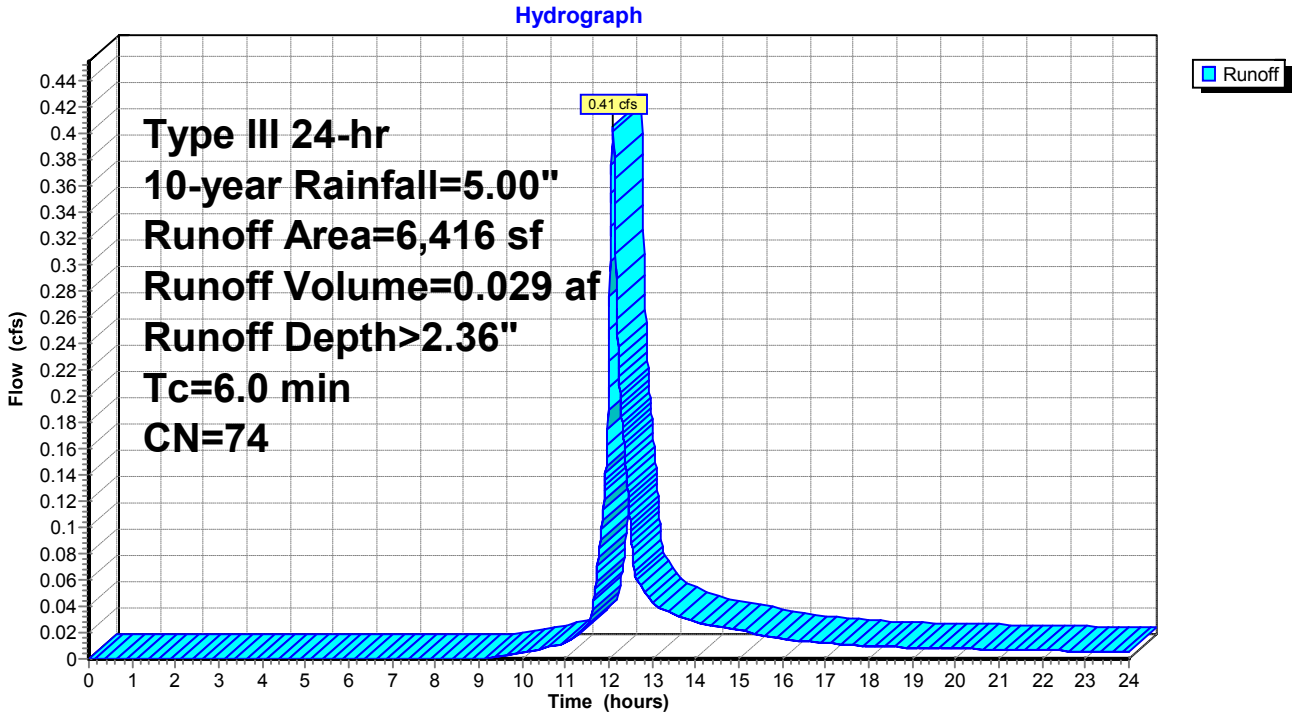
Runoff = 0.41 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.36"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
6,416	74	>75% Grass cover, Good, HSG C
6,416		100.00% Pervious Area

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

Subcatchment POST-WS6A: POST-WS6A



Summary for Subcatchment POST-WS6B-1: POST-WS6B-1

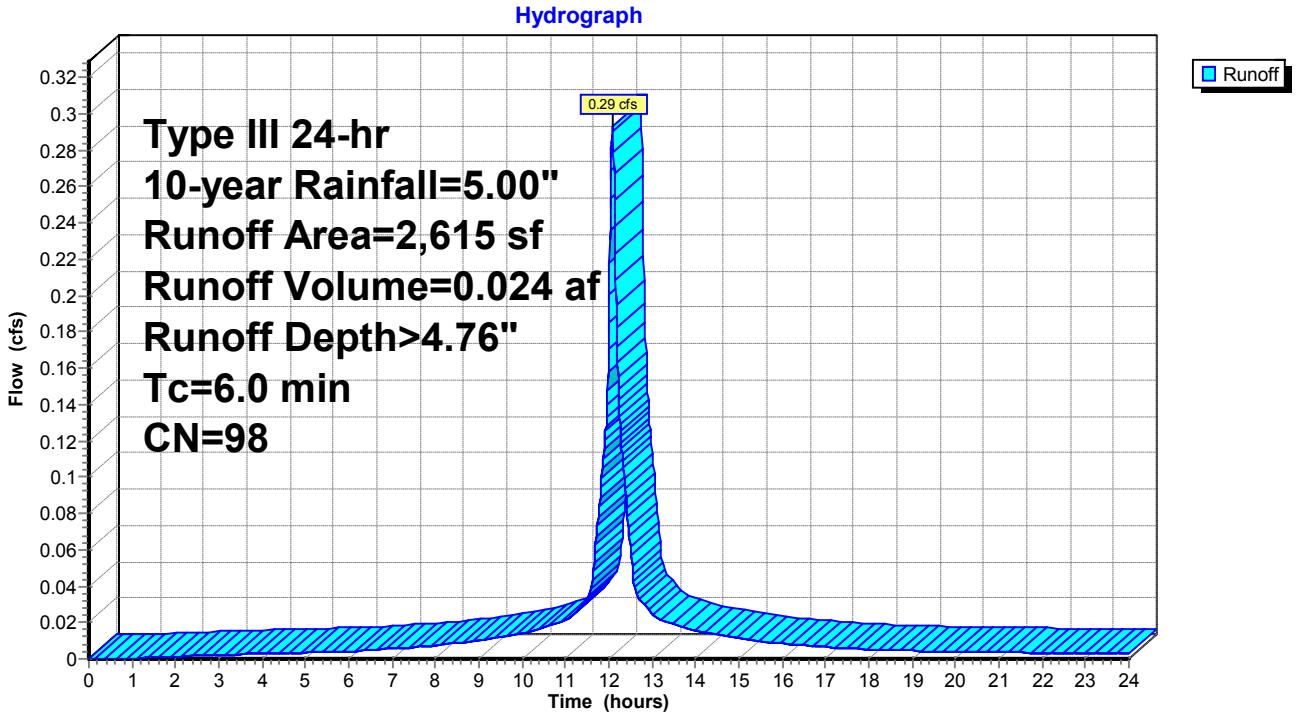
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af, Depth> 4.76"
Routed to Pond DW-#1 : DW-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
2,615	98	Paved parking, HSG C
2,615		100.00% Impervious Area

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

Subcatchment POST-WS6B-1: POST-WS6B-1



Summary for Subcatchment POST-WS6B-2: POST-WS6B-2

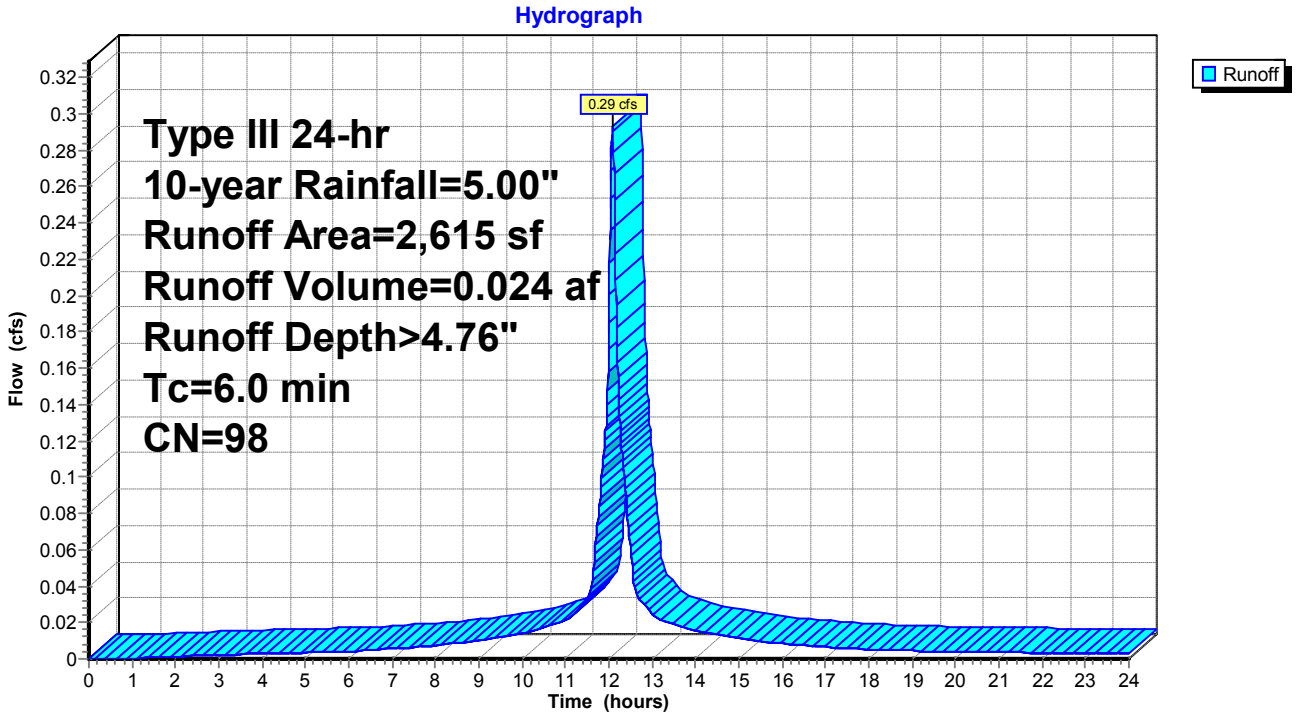
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af, Depth> 4.76"
Routed to Pond DW-#2 : DW-#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
2,615	98	Paved parking, HSG C
2,615		100.00% Impervious Area

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

Subcatchment POST-WS6B-2: POST-WS6B-2



Summary for Subcatchment POST-WS7A: POST-WS7A

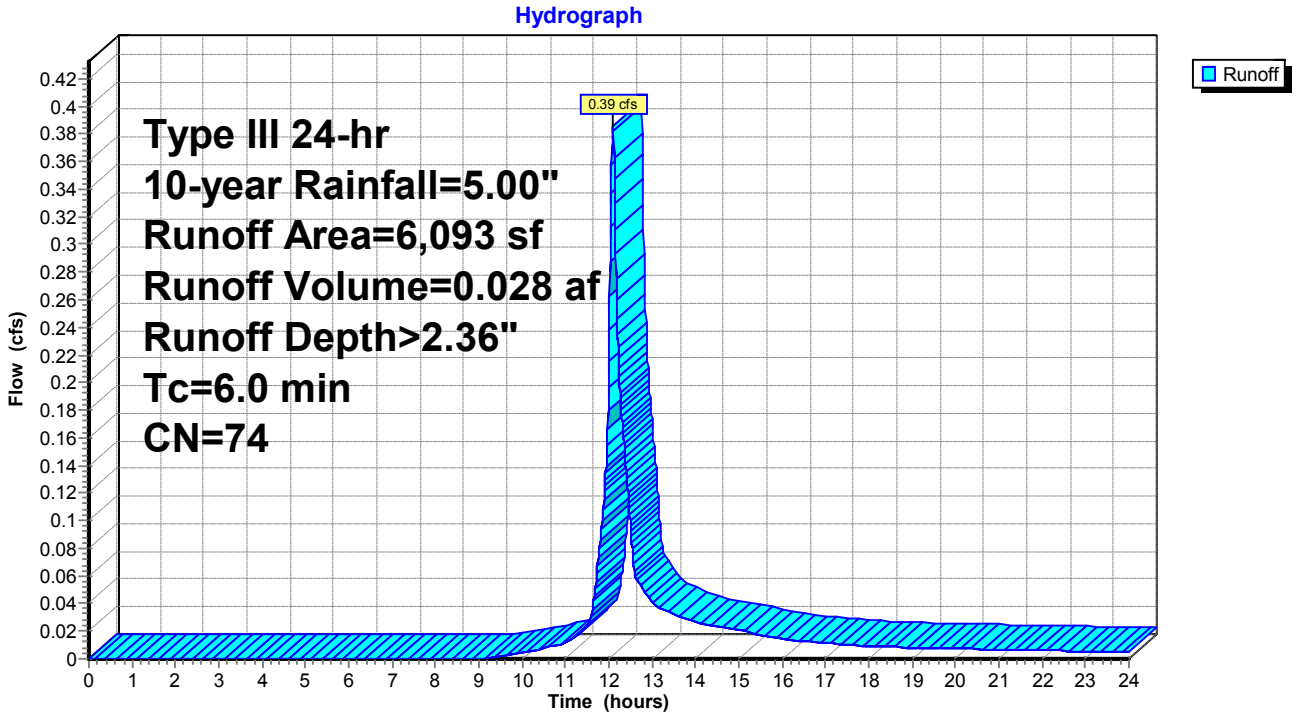
Runoff = 0.39 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 2.36"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
6,093	74	>75% Grass cover, Good, HSG C
6,093		100.00% Pervious Area

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

Subcatchment POST-WS7A: POST-WS7A



Summary for Subcatchment POST-WS7B-1: POST-WS7B-1

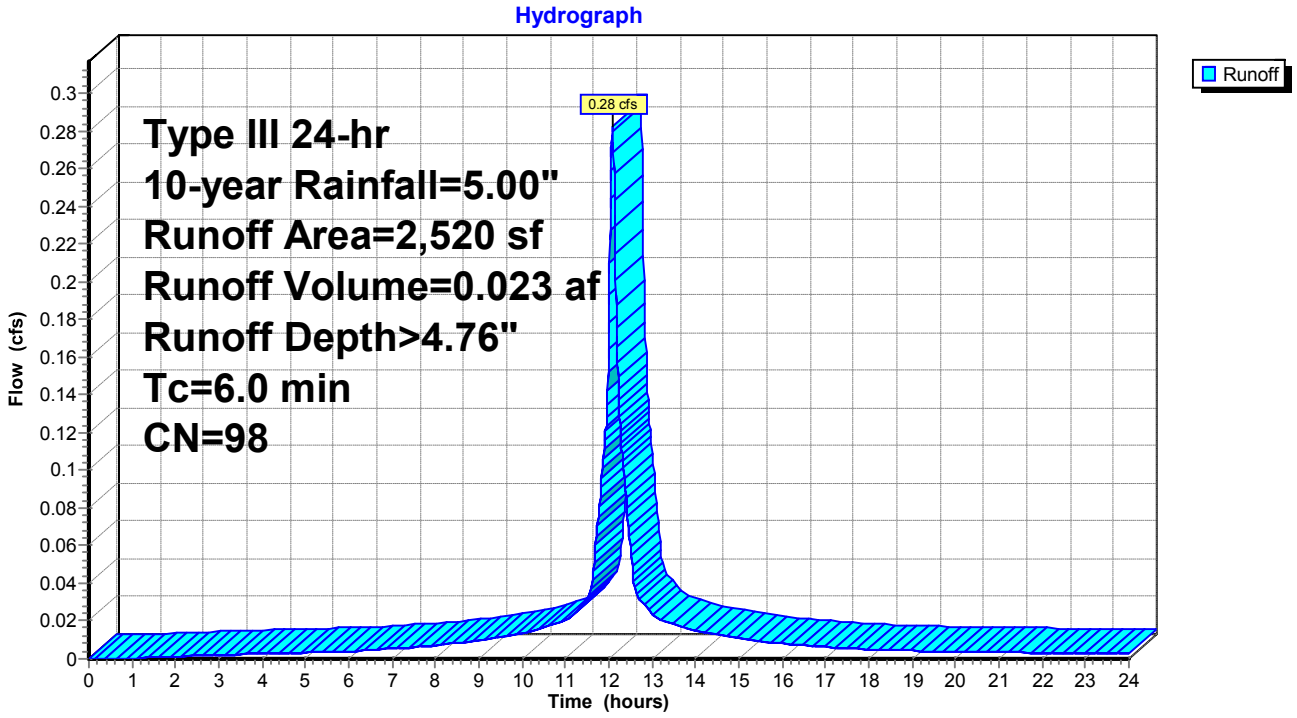
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 4.76"
Routed to Pond DW-#4 : DW-#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
2,520	98	Paved parking, HSG C
2,520		100.00% Impervious Area

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

Subcatchment POST-WS7B-1: POST-WS7B-1



Summary for Subcatchment POST-WS7B-2: POST-WS7B-2

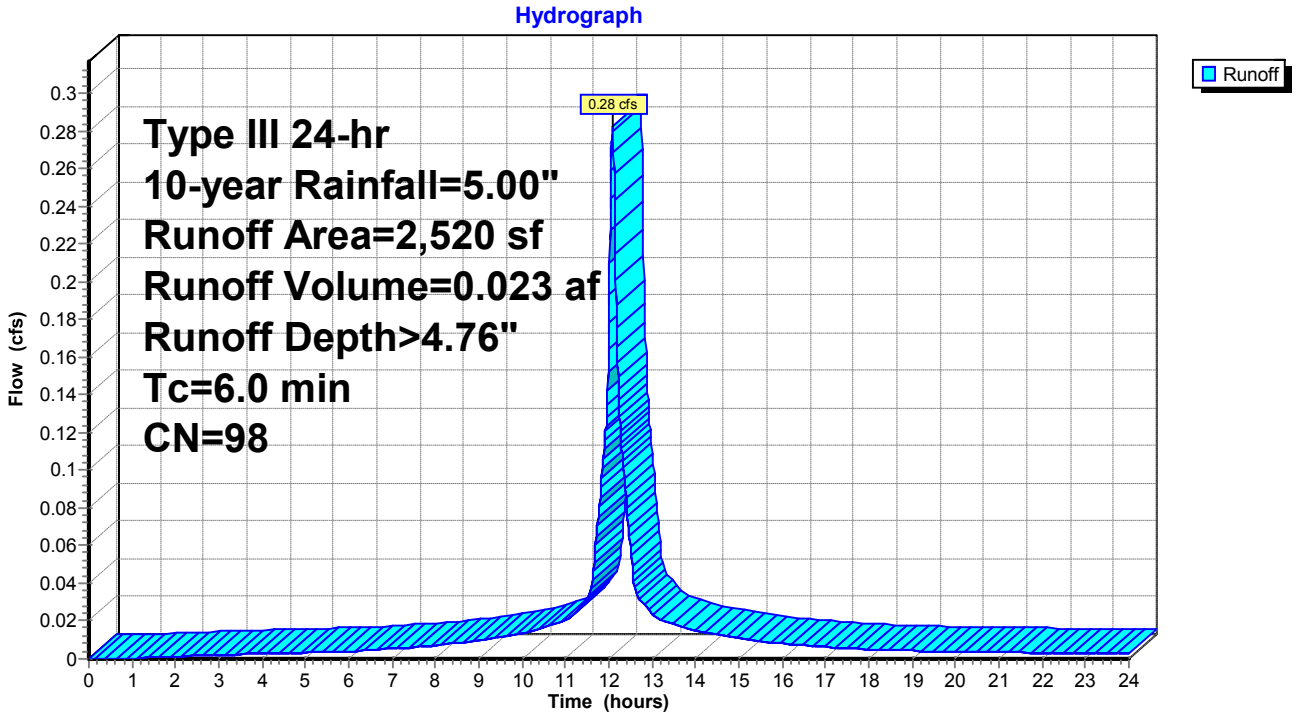
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af, Depth> 4.76"
Routed to Pond DW-#3 : DW-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
2,520	98	Paved parking, HSG C
2,520		100.00% Impervious Area

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

Subcatchment POST-WS7B-2: POST-WS7B-2



Summary for Subcatchment POST-WS8A: POST-WS8A

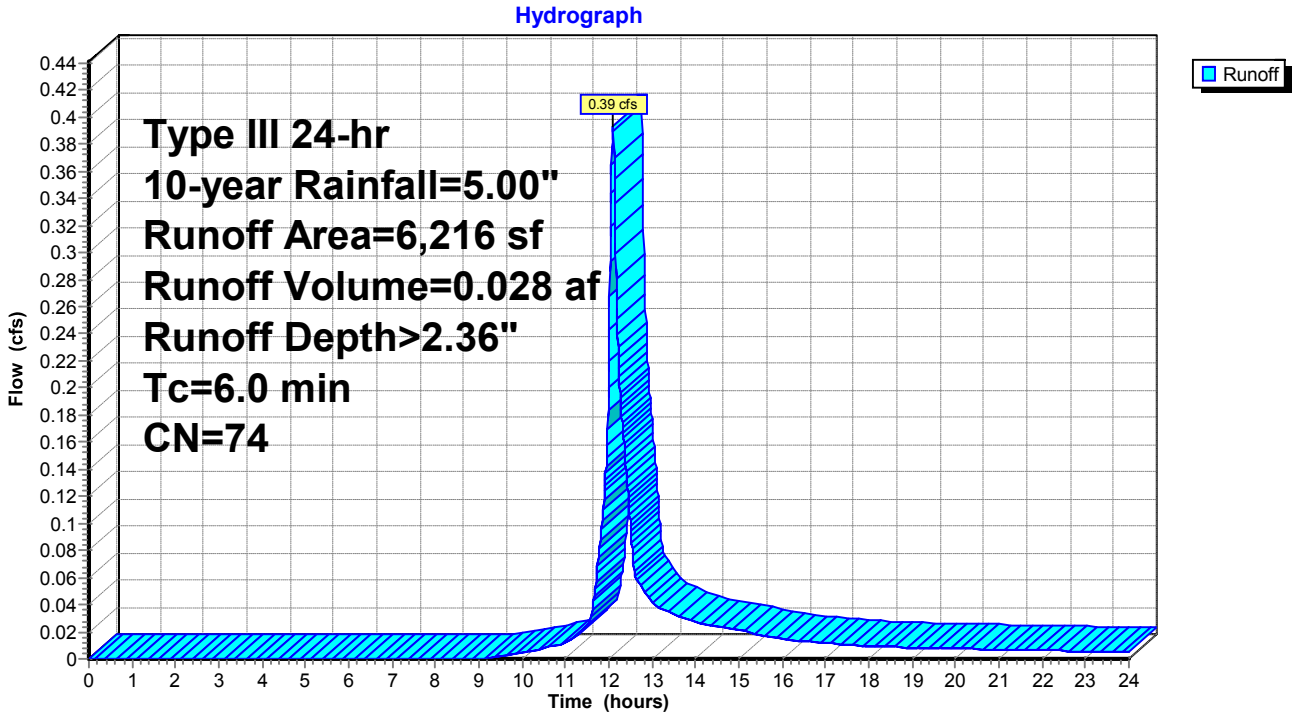
Runoff = 0.39 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 2.36"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
6,216	74	>75% Grass cover, Good, HSG C
6,216		100.00% Pervious Area

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

Subcatchment POST-WS8A: POST-WS8A



Summary for Subcatchment POST-WS8B-1: POST-WS8B-1

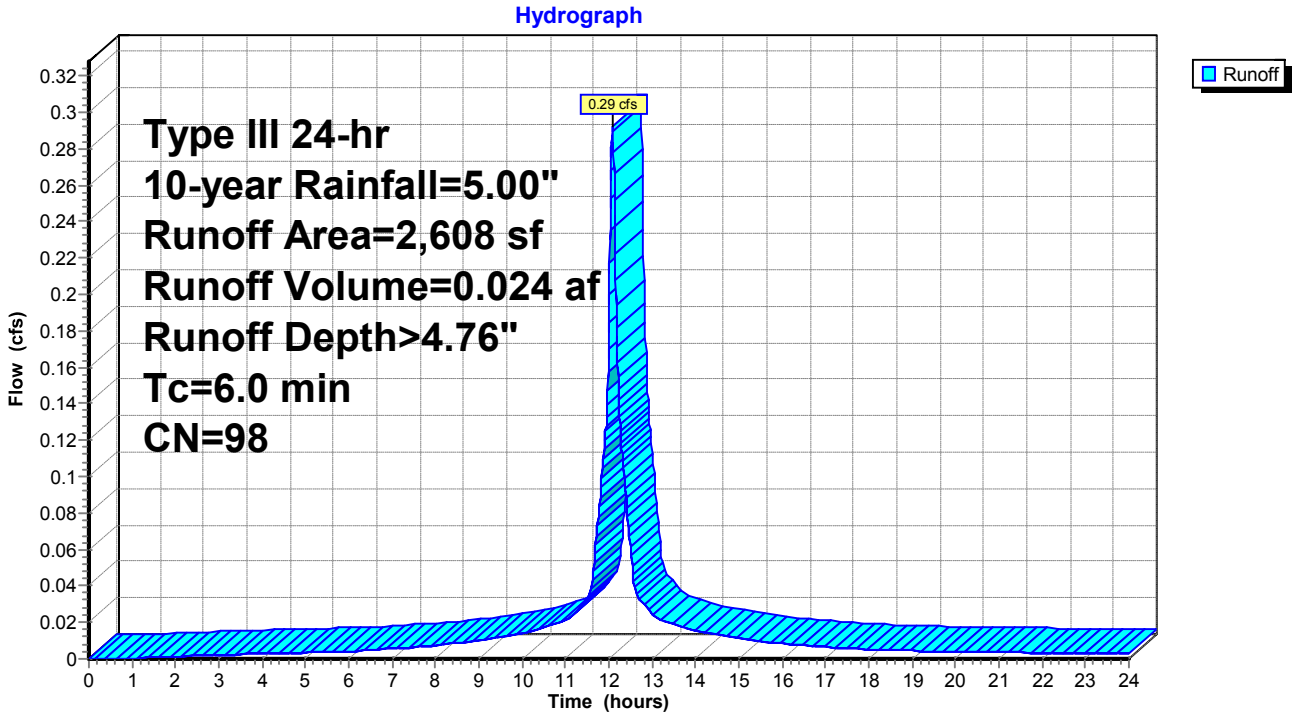
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af, Depth> 4.76"
Routed to Pond DW-#6 : DW-#6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
2,608	98	Paved parking, HSG C
2,608		100.00% Impervious Area

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

Subcatchment POST-WS8B-1: POST-WS8B-1



Summary for Subcatchment POST-WS8B-2: POST-WS8B-2

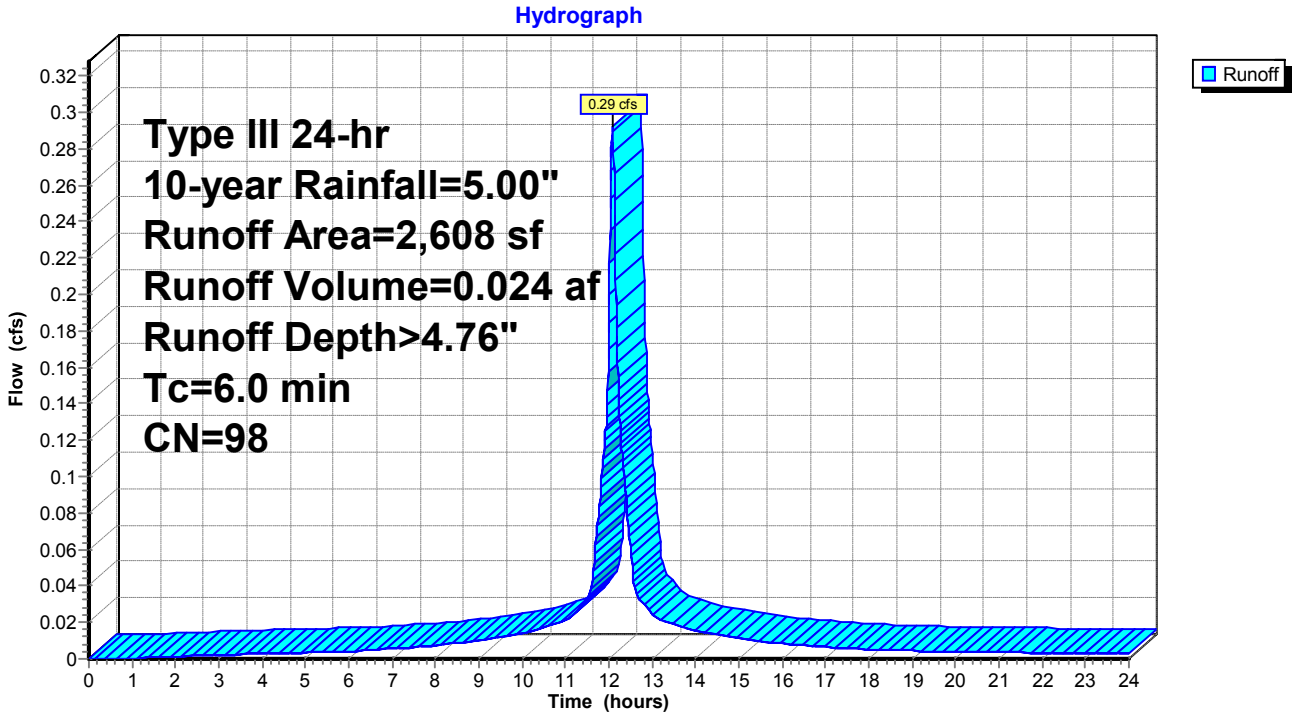
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af, Depth> 4.76"
Routed to Pond DW-#5 : DW-#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
2,608	98	Paved parking, HSG C
2,608		100.00% Impervious Area

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

Subcatchment POST-WS8B-2: POST-WS8B-2



Summary for Subcatchment PRE-WS1: PRE-WS1

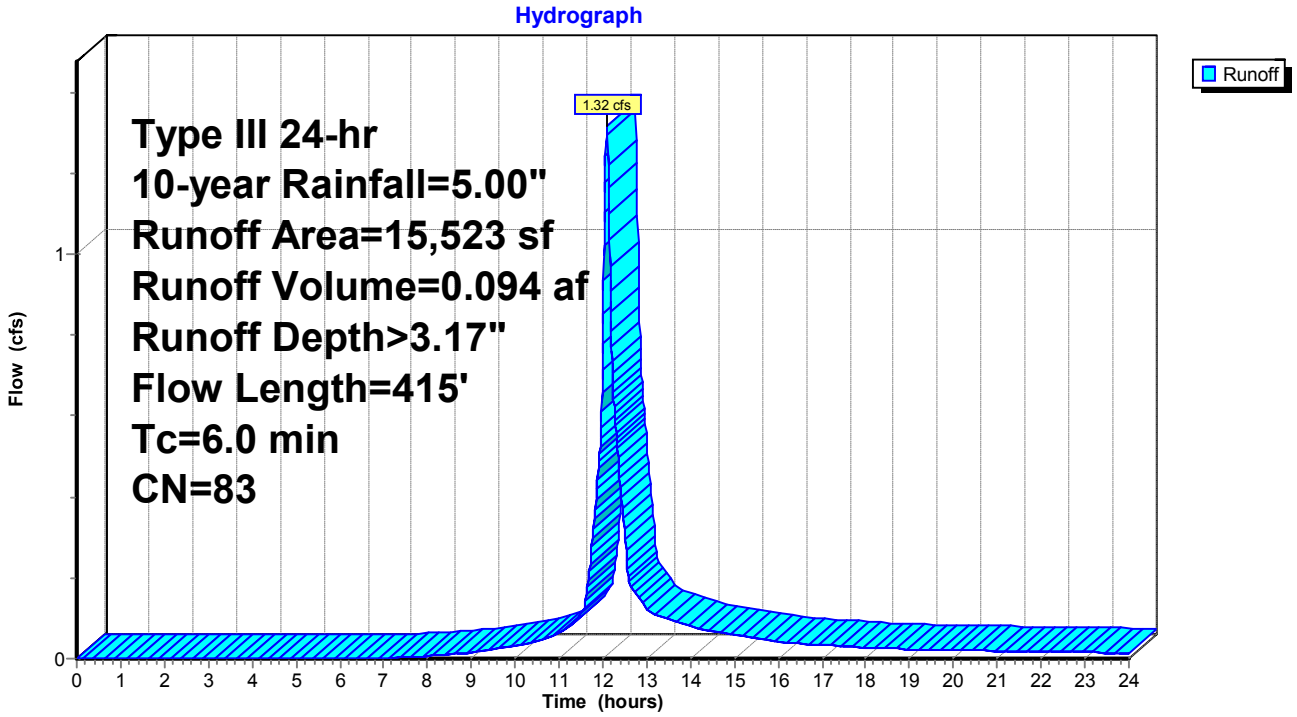
Runoff = 1.32 cfs @ 12.09 hrs, Volume= 0.094 af, Depth> 3.17"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
4,132	87	Dirt roads, HSG C
11,391	82	Woods/grass comb., Poor, HSG C
15,523	83	Weighted Average
15,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.32		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 3.00"
1.0	315	0.0690	5.33		**Shallow Concentrated Flow, Shallow Flow** Paved Kv= 20.3 fps
1.7	415	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE-WS1: PRE-WS1



Summary for Subcatchment PRE-WS2: PRE-WS2

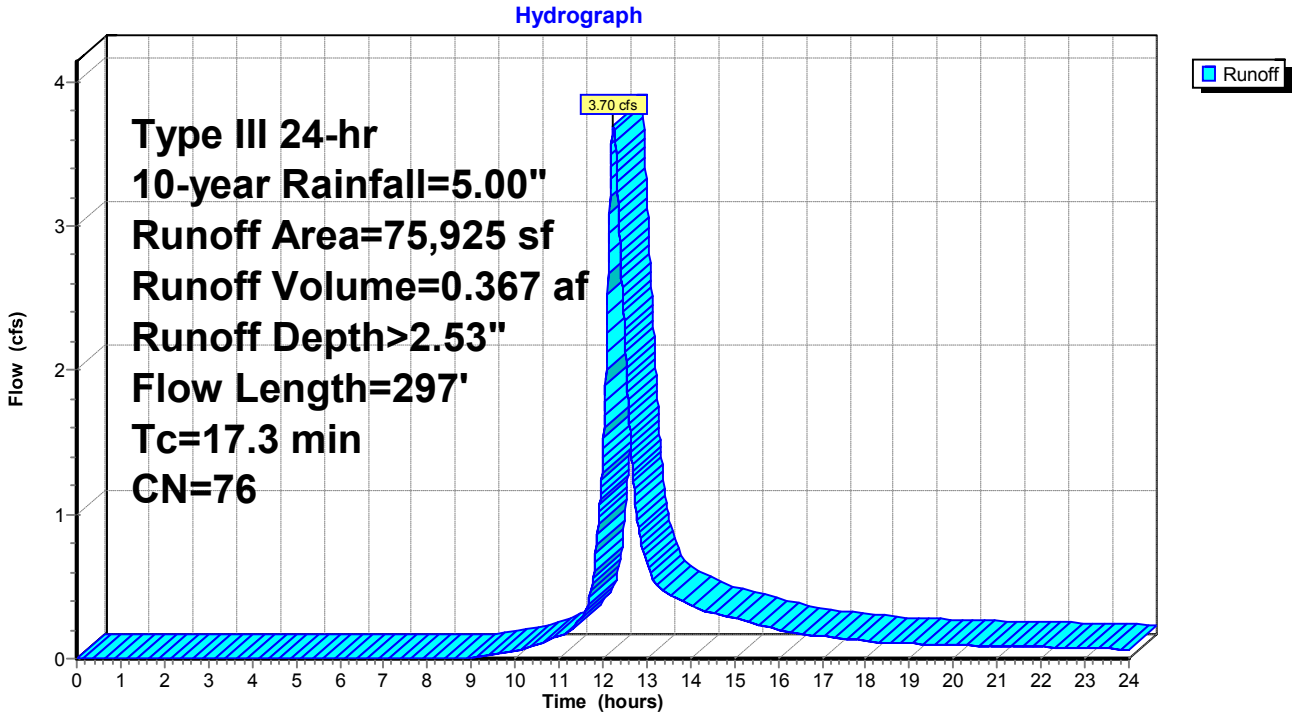
Runoff = 3.70 cfs @ 12.24 hrs, Volume= 0.367 af, Depth> 2.53"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
70,848	76	Woods/grass comb., Fair, HSG C
5,077	74	>75% Grass cover, Good, HSG C
75,925	76	Weighted Average
75,925		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0600	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
3.0	197	0.0480	1.10		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.3	297	Total			

Subcatchment PRE-WS2: PRE-WS2



Summary for Subcatchment PRE-WS3: PRE-WS3

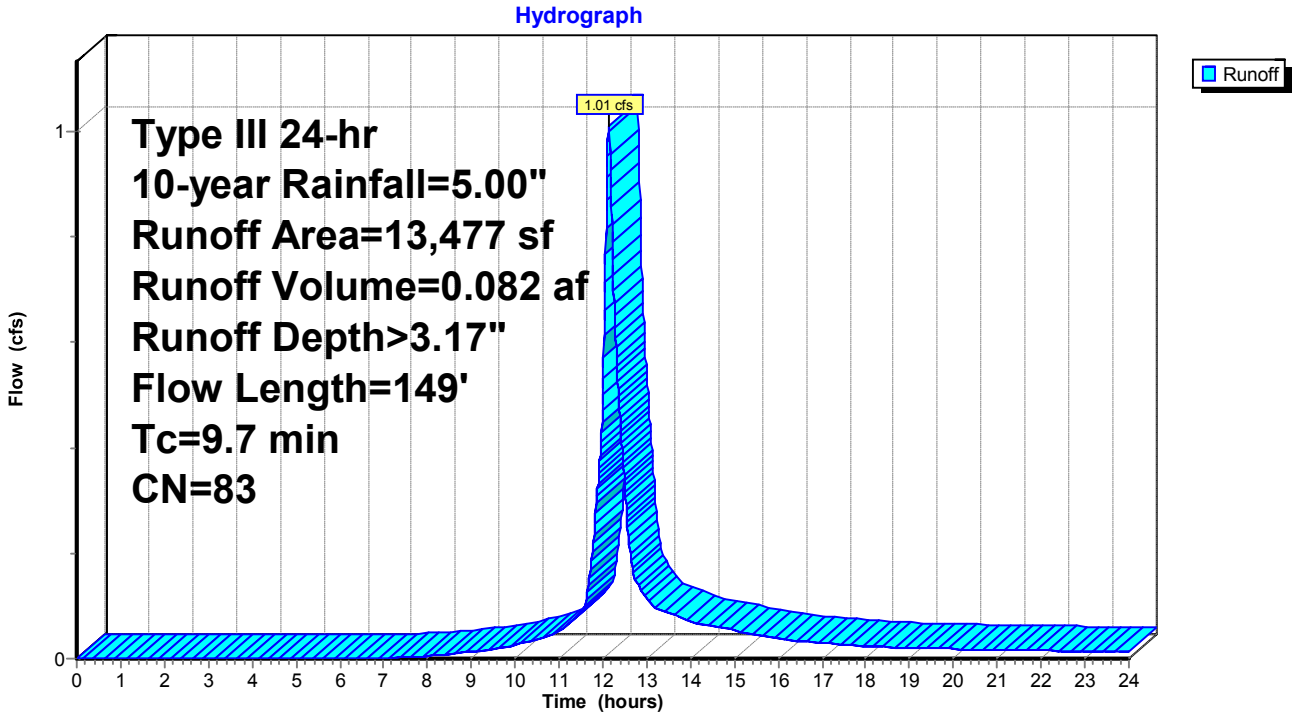
Runoff = 1.01 cfs @ 12.13 hrs, Volume= 0.082 af, Depth> 3.17"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
10,322	82	Woods/grass comb., Poor, HSG C
3,155	86	Pasture/grassland/range, Poor, HSG C
13,477	83	Weighted Average
13,477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	80	0.1250	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.8	69	0.0800	1.41		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
9.7	149	Total			

Subcatchment PRE-WS3: PRE-WS3



Summary for Subcatchment PRE-WS4: PRE-WS4

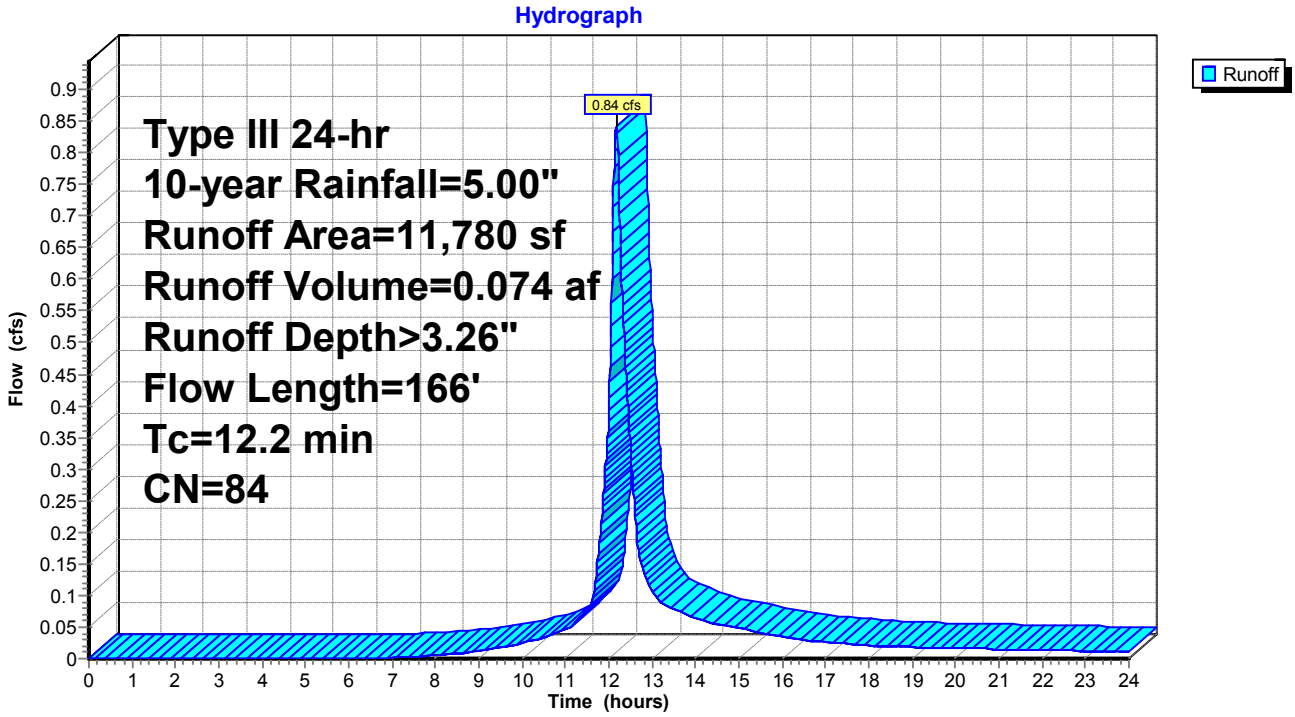
Runoff = 0.84 cfs @ 12.16 hrs, Volume= 0.074 af, Depth> 3.26"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
5,612	82	Woods/grass comb., Poor, HSG C
6,168	86	<50% Grass cover, Poor, HSG C
11,780	84	Weighted Average
11,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1100	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
1.0	66	0.0450	1.06		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
12.2	166	Total			

Subcatchment PRE-WS4: PRE-WS4



Summary for Subcatchment PRE-WS5: PRE-WS5

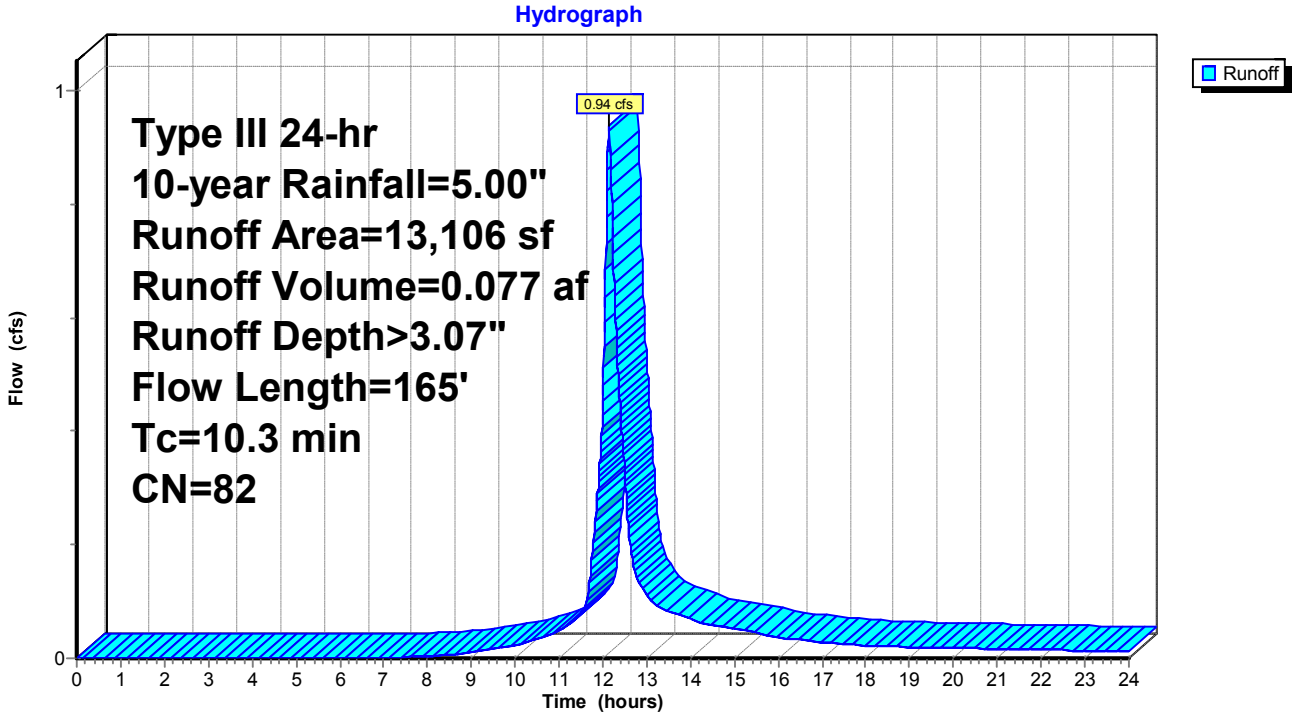
Runoff = 0.94 cfs @ 12.14 hrs, Volume= 0.077 af, Depth> 3.07"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
13,106	82	Woods/grass comb., Poor, HSG C
13,106		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	90	0.1250	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	25	0.0550	1.17		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
0.1	50	0.0500	10.14	40.57	**Channel Flow, Ditch Flow** Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.025 Earth, clean & winding
10.3	165	Total			

Subcatchment PRE-WS5: PRE-WS5



Summary for Subcatchment PRE-WS6: PRE-WS6

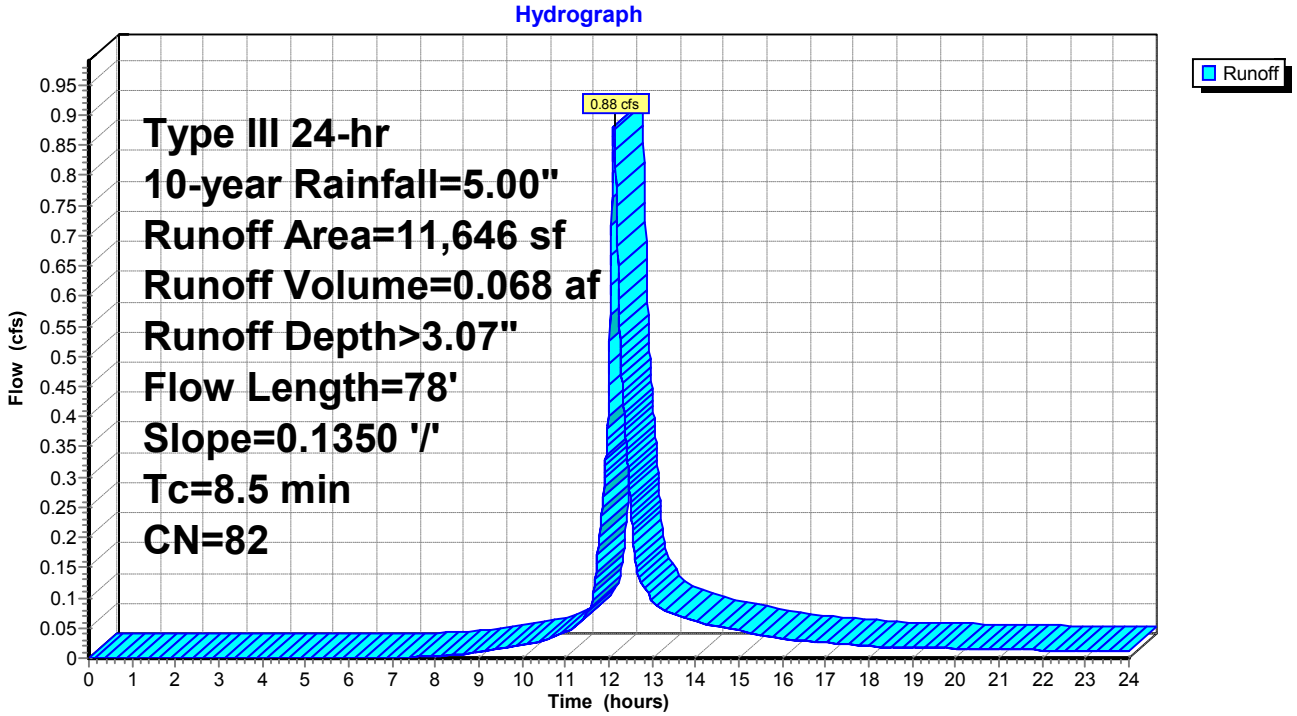
Runoff = 0.88 cfs @ 12.12 hrs, Volume= 0.068 af, Depth> 3.07"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
11,646	82	Woods/grass comb., Poor, HSG C
11,646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	78	0.1350	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"

Subcatchment PRE-WS6: PRE-WS6



Summary for Subcatchment PRE-WS7: PRE-WS7

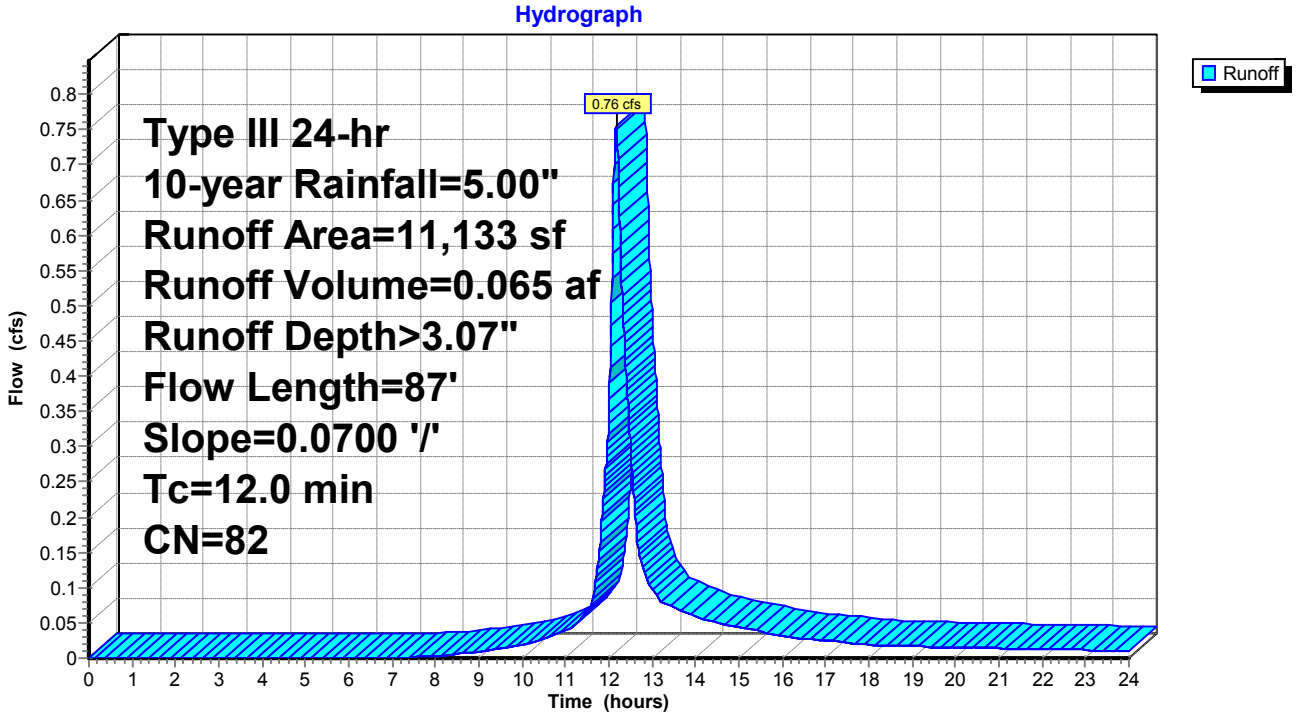
Runoff = 0.76 cfs @ 12.17 hrs, Volume= 0.065 af, Depth> 3.07"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
11,133	82	Woods/grass comb., Poor, HSG C
11,133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	87	0.0700	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"

Subcatchment PRE-WS7: PRE-WS7



Summary for Subcatchment PRE-WS8: PRE-WS8

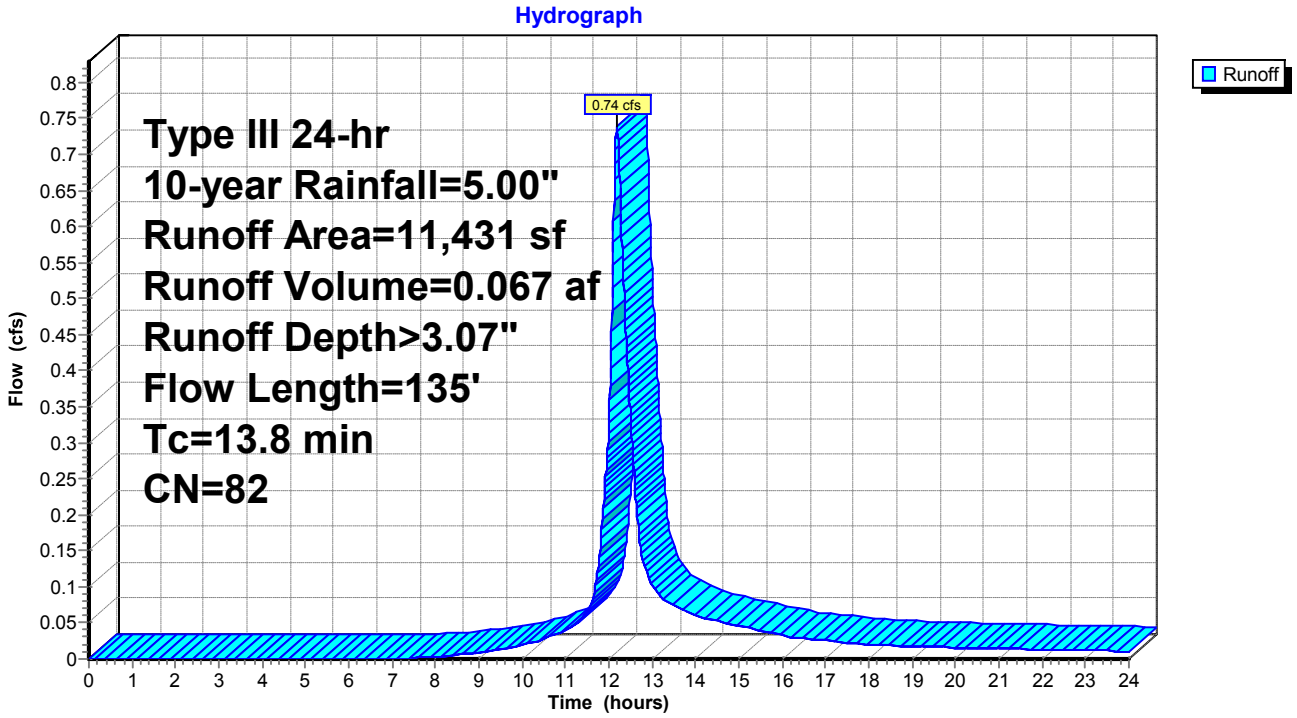
Runoff = 0.74 cfs @ 12.19 hrs, Volume= 0.067 af, Depth> 3.07"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.00"

Area (sf)	CN	Description
11,431	82	Woods/grass comb., Poor, HSG C
11,431		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0700	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	35	0.0900	1.50		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
13.8	135	Total			

Subcatchment PRE-WS8: PRE-WS8



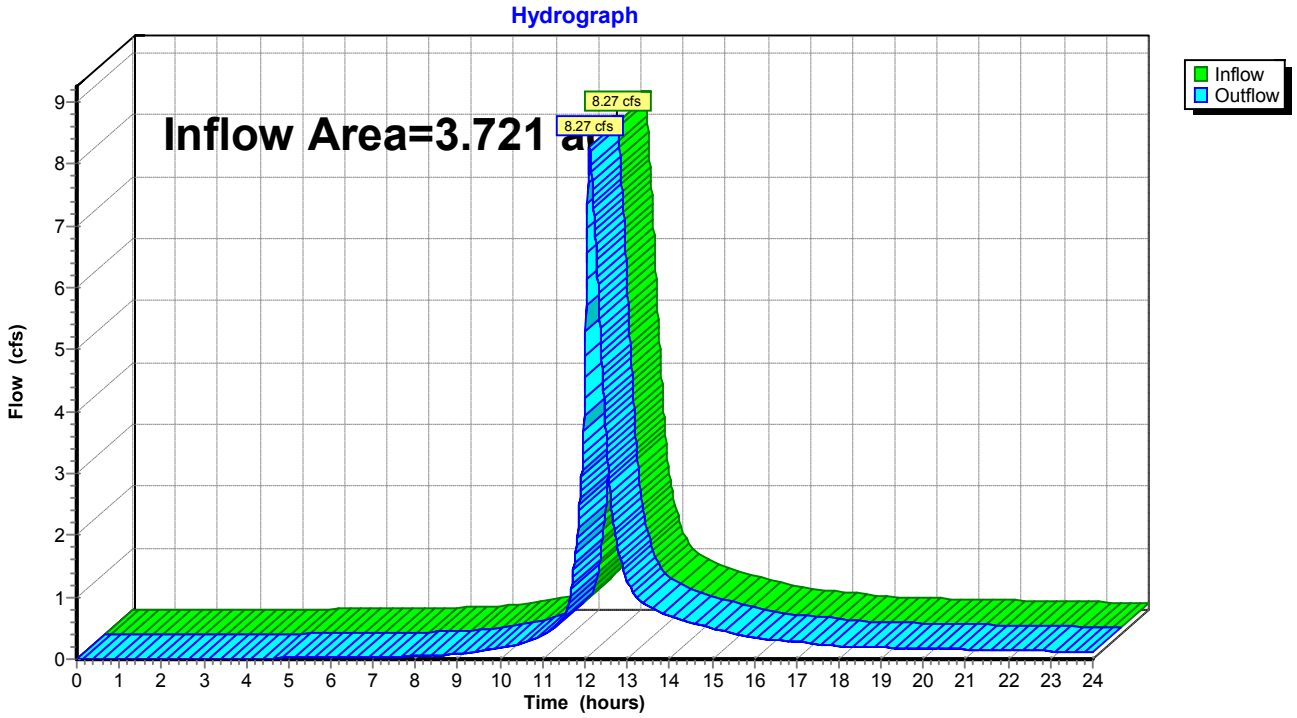
Summary for Reach POST: POST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.721 ac, 30.49% Impervious, Inflow Depth > 2.46" for 10-year event
Inflow = 8.27 cfs @ 12.12 hrs, Volume= 0.762 af
Outflow = 8.27 cfs @ 12.12 hrs, Volume= 0.762 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach POST: POST



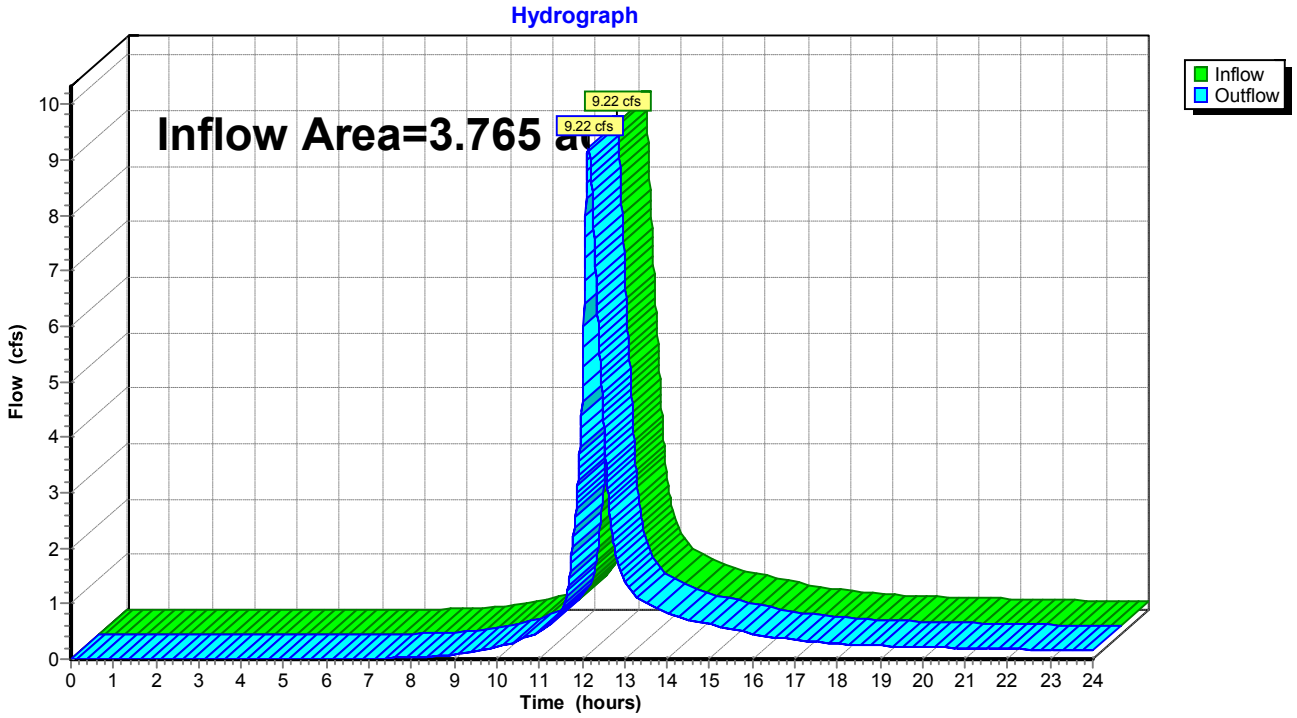
Summary for Reach PRE: PRE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.765 ac, 0.00% Impervious, Inflow Depth > 2.85" for 10-year event
Inflow = 9.22 cfs @ 12.16 hrs, Volume= 0.894 af
Outflow = 9.22 cfs @ 12.16 hrs, Volume= 0.894 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach PRE: PRE



Summary for Pond ADS-#1: ADS-#1

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.56 cfs @ 12.08 hrs, Volume= 0.045 af
Outflow = 0.38 cfs @ 12.16 hrs, Volume= 0.045 af, Atten= 31%, Lag= 4.9 min
Discarded = 0.02 cfs @ 12.16 hrs, Volume= 0.027 af
Primary = 0.36 cfs @ 12.16 hrs, Volume= 0.018 af
Routed to Pond SDMH #5 : SDMH #5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 502.78' @ 12.16 hrs Surf.Area= 424 sf Storage= 473 cf
Flood Elev= 508.66' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 67.6 min calculated for 0.045 af (100% of inflow)
Center-of-Mass det. time= 66.4 min (813.9 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	501.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	501.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	501.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 468.00'
#2	Primary	501.50'	**10.0" Round Culvert** L= 13.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 501.50' / 501.37' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	503.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	502.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	502.50'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.16 hrs HW=502.78' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.36 cfs @ 12.16 hrs HW=502.78' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 2.38 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.18 cfs @ 4.02 fps)
└**5=Orifice/Grate** (Orifice Controls 0.19 cfs @ 1.90 fps)

Pond ADS-#1: ADS-#1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

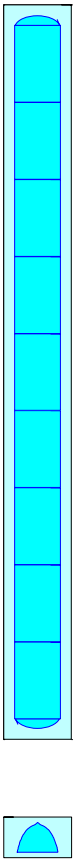
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

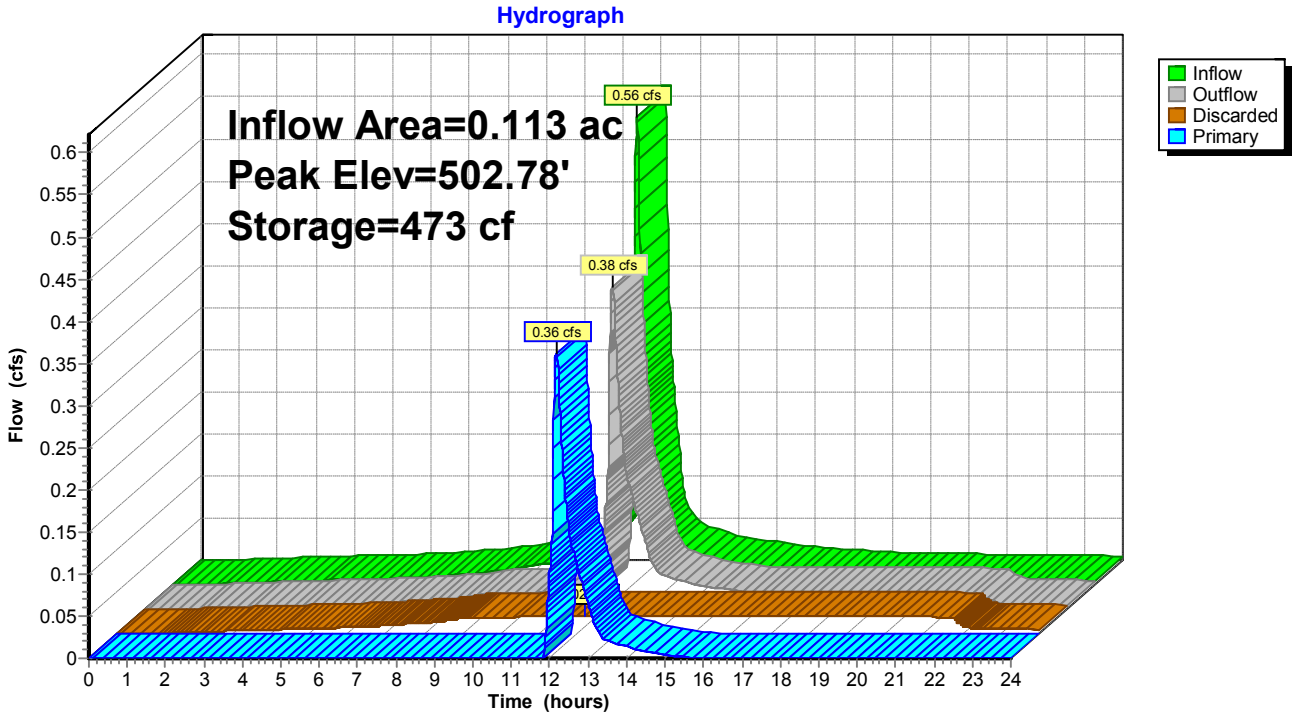
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#1: ADS-#1



Summary for Pond ADS-#2: ADS-#2

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.55 cfs @ 12.08 hrs, Volume= 0.045 af
Outflow = 0.38 cfs @ 12.17 hrs, Volume= 0.045 af, Atten= 32%, Lag= 4.9 min
Discarded = 0.02 cfs @ 12.17 hrs, Volume= 0.027 af
Primary = 0.36 cfs @ 12.17 hrs, Volume= 0.018 af
Routed to Pond SDMH #6 : SDMH #6

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 502.77' @ 12.17 hrs Surf.Area= 424 sf Storage= 471 cf
Flood Elev= 507.68' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 67.5 min calculated for 0.045 af (100% of inflow)
Center-of-Mass det. time= 66.5 min (814.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	501.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	501.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	501.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 468.00'
#2	Primary	501.50'	**10.0" Round Culvert** L= 13.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 501.50' / 501.36' S= 0.0101 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	503.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	502.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	502.50'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.17 hrs HW=502.77' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.36 cfs @ 12.17 hrs HW=502.77' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 2.37 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.17 cfs @ 4.00 fps)
└**5=Orifice/Grate** (Orifice Controls 0.18 cfs @ 1.85 fps)

Pond ADS-#2: ADS-#2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

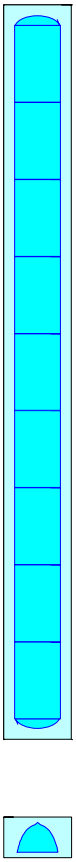
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

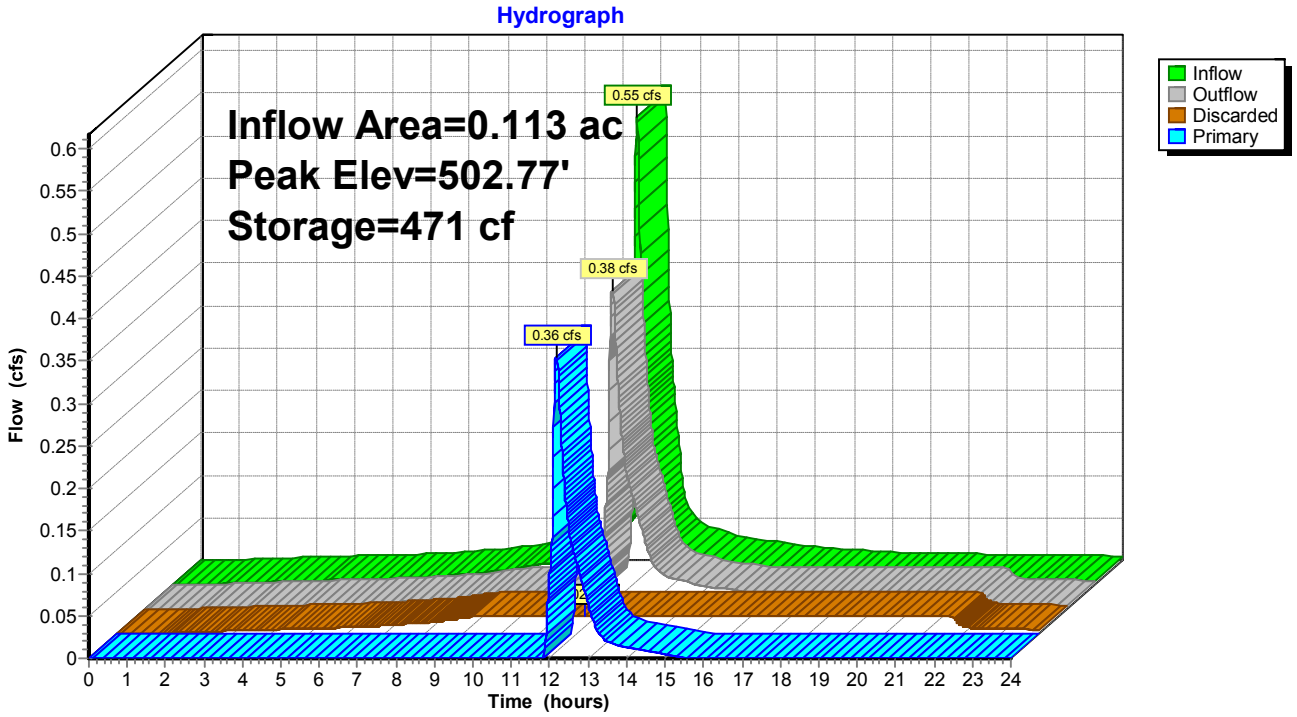
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#2: ADS-#2



Summary for Pond ADS-#3: ADS-#3

Inflow Area = 0.112 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.55 cfs @ 12.08 hrs, Volume= 0.045 af
Outflow = 0.39 cfs @ 12.16 hrs, Volume= 0.045 af, Atten= 29%, Lag= 4.6 min
Discarded = 0.02 cfs @ 12.16 hrs, Volume= 0.027 af
Primary = 0.37 cfs @ 12.16 hrs, Volume= 0.017 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 501.71' @ 12.16 hrs Surf.Area= 424 sf Storage= 454 cf
Flood Elev= 505.69' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 67.2 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 66.3 min (813.8 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	500.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	500.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	500.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 467.00'
#2	Primary	500.50'	**10.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.50' / 499.07' S= 0.0681 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	502.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	501.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	501.40'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.16 hrs HW=501.71' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.37 cfs @ 12.16 hrs HW=501.71' (Free Discharge)
├─**2=Culvert** (Passes 0.00 cfs of 2.34 cfs potential flow)
│ └─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├─**4=Orifice/Grate** (Orifice Controls 0.17 cfs @ 3.82 fps)
└─**5=Orifice/Grate** (Orifice Controls 0.20 cfs @ 2.09 fps)

Pond ADS-#3: ADS-#3 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

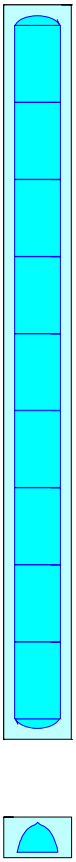
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

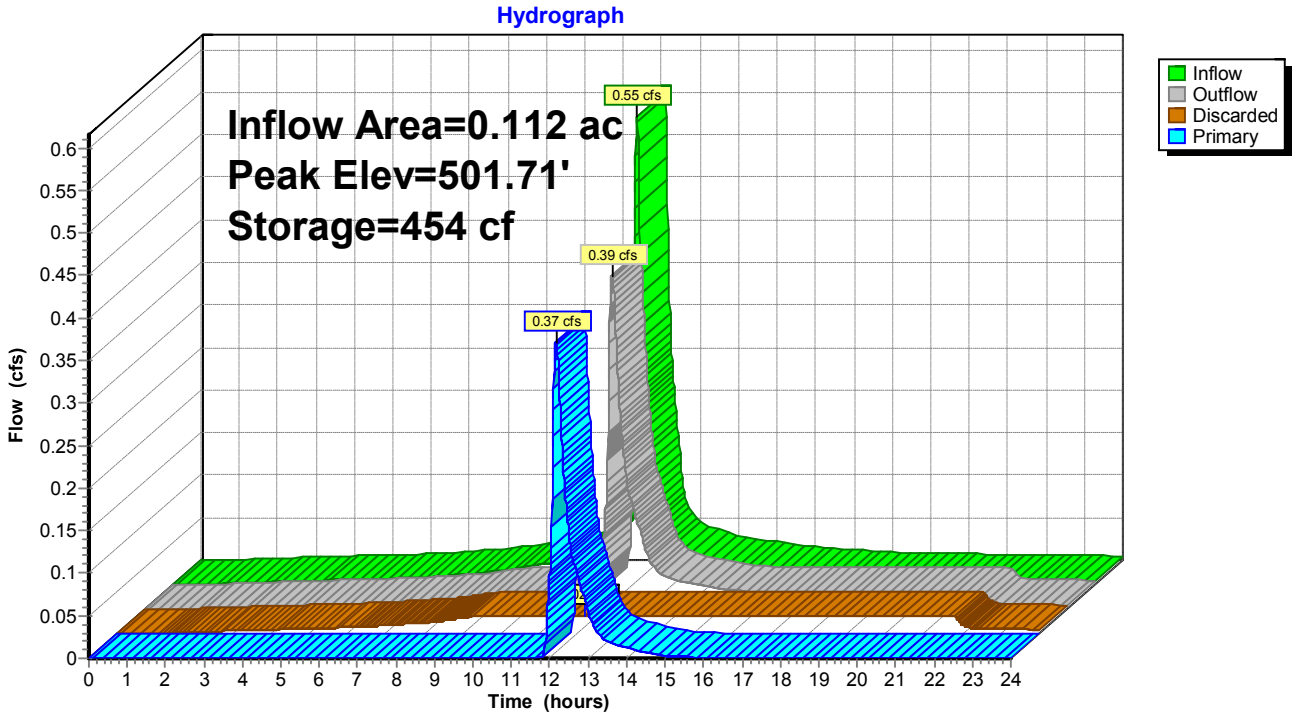
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#3: ADS-#3



Summary for Pond CB-#1: CB-#1

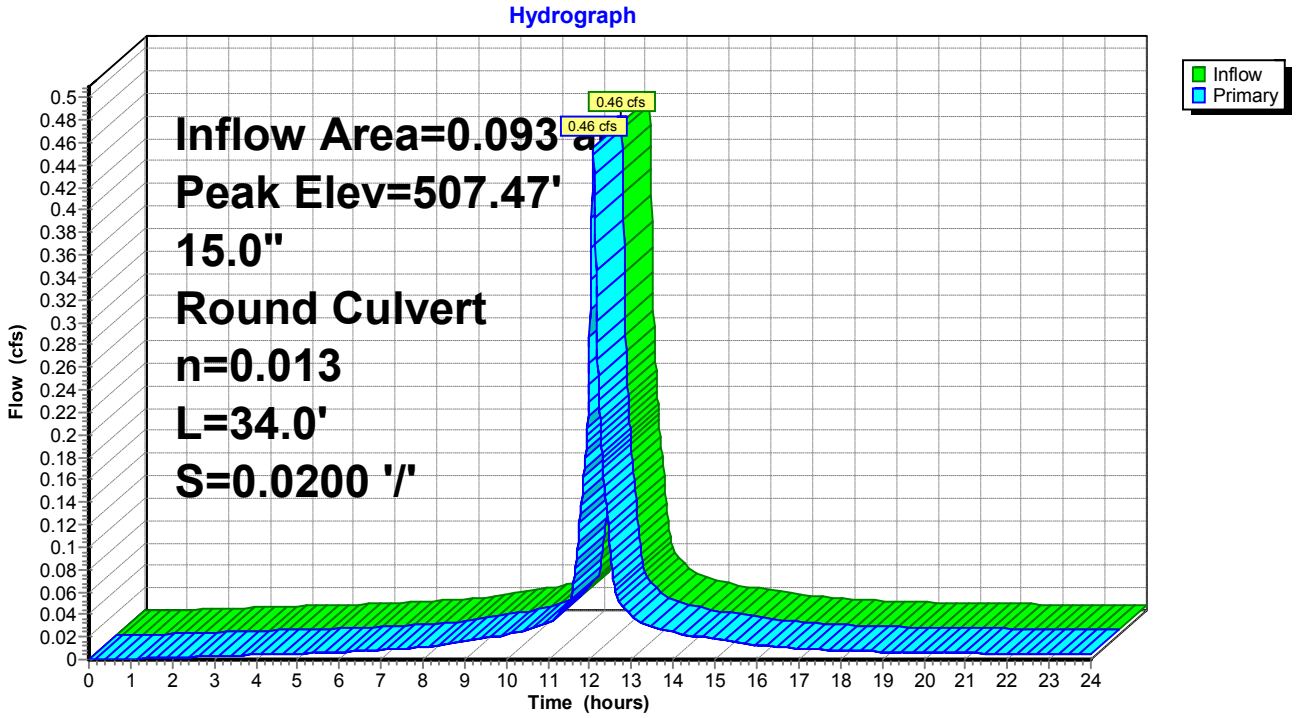
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.46 cfs @ 12.08 hrs, Volume= 0.037 af
Outflow = 0.46 cfs @ 12.08 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.08 hrs, Volume= 0.037 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 507.47' @ 12.08 hrs
Flood Elev= 510.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	507.16'	**15.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.16' / 506.48' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.45 cfs @ 12.08 hrs HW=507.47' (Free Discharge)
1=Culvert (Inlet Controls 0.45 cfs @ 1.90 fps)

Pond CB-#1: CB-#1



Summary for Pond CB-#2: CB-#2

[79] Warning: Submerged Pond CB-#1 Primary device # 1 OUTLET by 0.35'
[79] Warning: Submerged Pond DW-#1 Primary device # 2 OUTLET by 0.35'
[79] Warning: Submerged Pond DW-#2 Primary device # 2 OUTLET by 0.35'
[81] Warning: Exceeded Pond DW-#3 by 0.15' @ 12.02 hrs
[81] Warning: Exceeded Pond DW-#4 by 3.75' @ 11.72 hrs

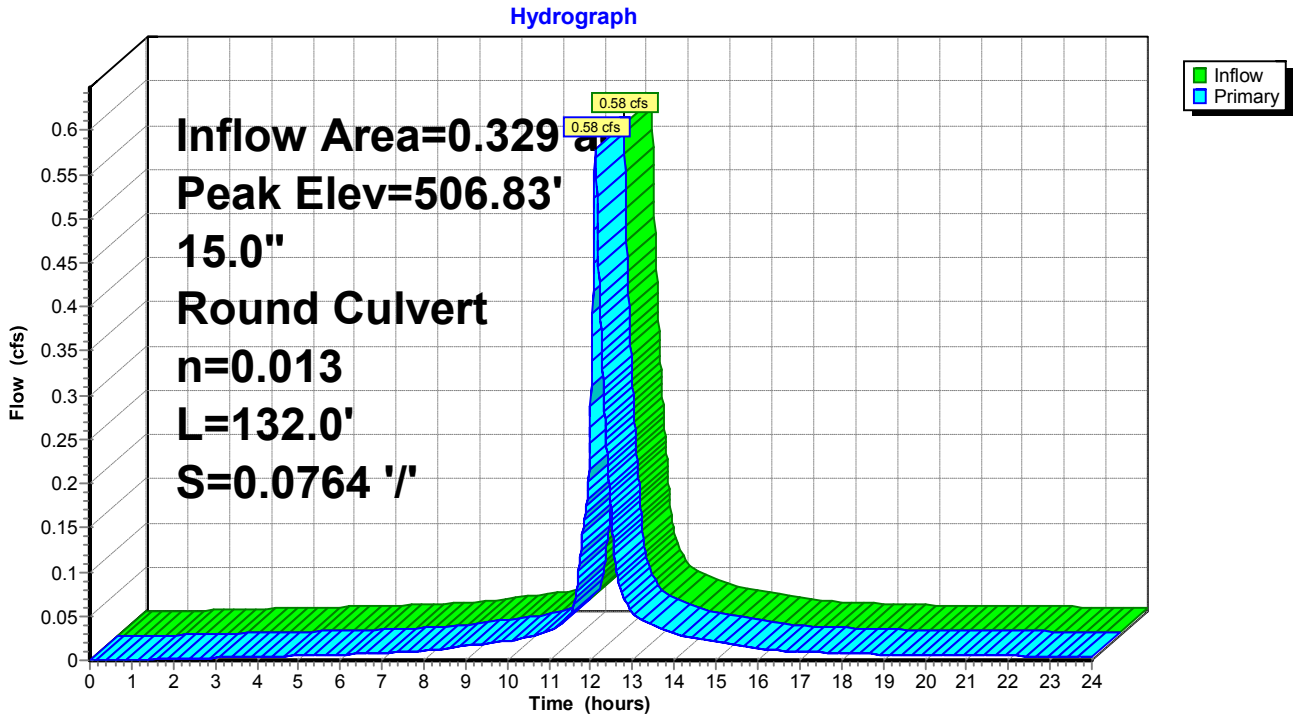
Inflow Area = 0.329 ac,100.00% Impervious, Inflow Depth > 1.60" for 10-year event
Inflow = 0.58 cfs @ 12.11 hrs, Volume= 0.044 af
Outflow = 0.58 cfs @ 12.11 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.11 hrs, Volume= 0.044 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 506.83' @ 12.11 hrs
Flood Elev= 510.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	506.48'	**15.0" Round Culvert** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 506.48' / 496.40' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.58 cfs @ 12.11 hrs HW=506.83' (Free Discharge)
1=Culvert (Inlet Controls 0.58 cfs @ 2.02 fps)

Pond CB-#2: CB-#2



Summary for Pond CB-#3: CB-#3

[79] Warning: Submerged Pond CB-#2 Primary device # 1 OUTLET by 0.52'
[79] Warning: Submerged Pond DW-#6 Primary device # 2 OUTLET by 0.04'

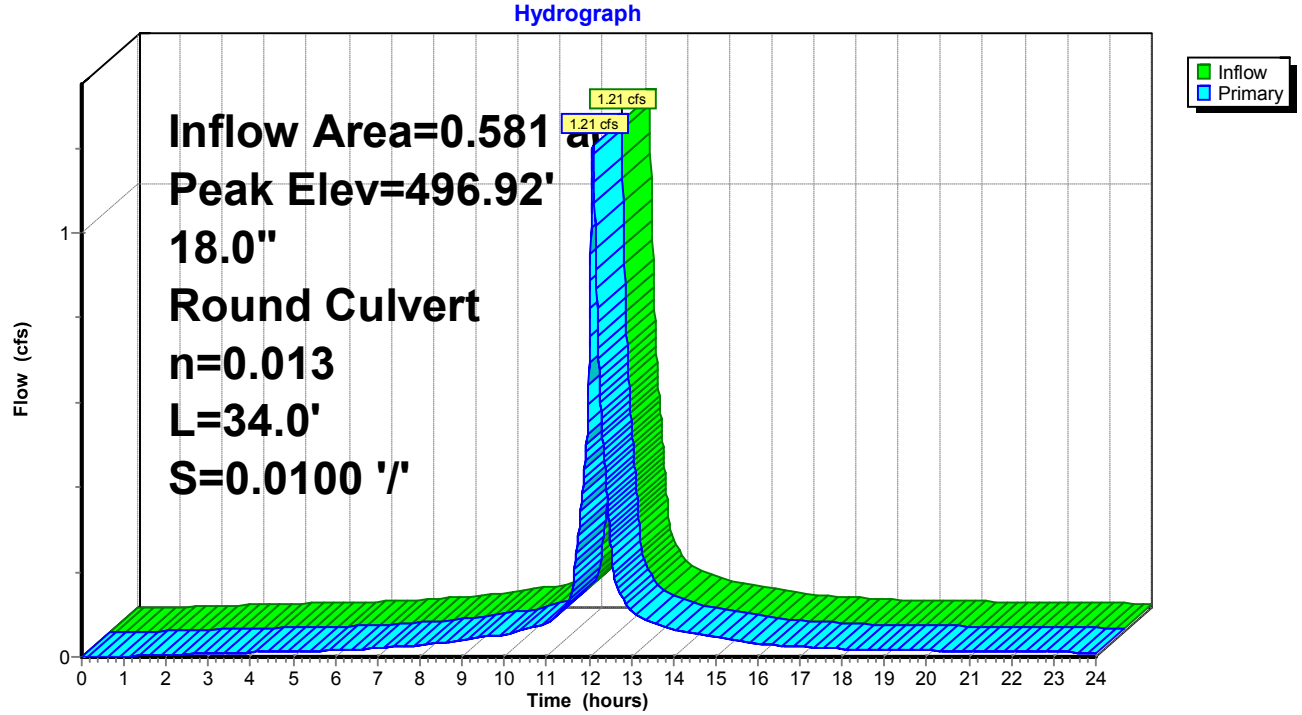
Inflow Area = 0.581 ac,100.00% Impervious, Inflow Depth > 1.99" for 10-year event
Inflow = 1.21 cfs @ 12.10 hrs, Volume= 0.097 af
Outflow = 1.21 cfs @ 12.10 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.10 hrs, Volume= 0.097 af
Routed to Pond CB-#4 : CB-#4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.92' @ 12.10 hrs
Flood Elev= 499.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.40'	**18.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.40' / 496.06' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.21 cfs @ 12.10 hrs HW=496.92' (Free Discharge)
1=Culvert (Barrel Controls 1.21 cfs @ 3.33 fps)

Pond CB-#3: CB-#3



Summary for Pond CB-#4: CB-#4

[79] Warning: Submerged Pond CB-#3 Primary device # 1 INLET by 0.11'

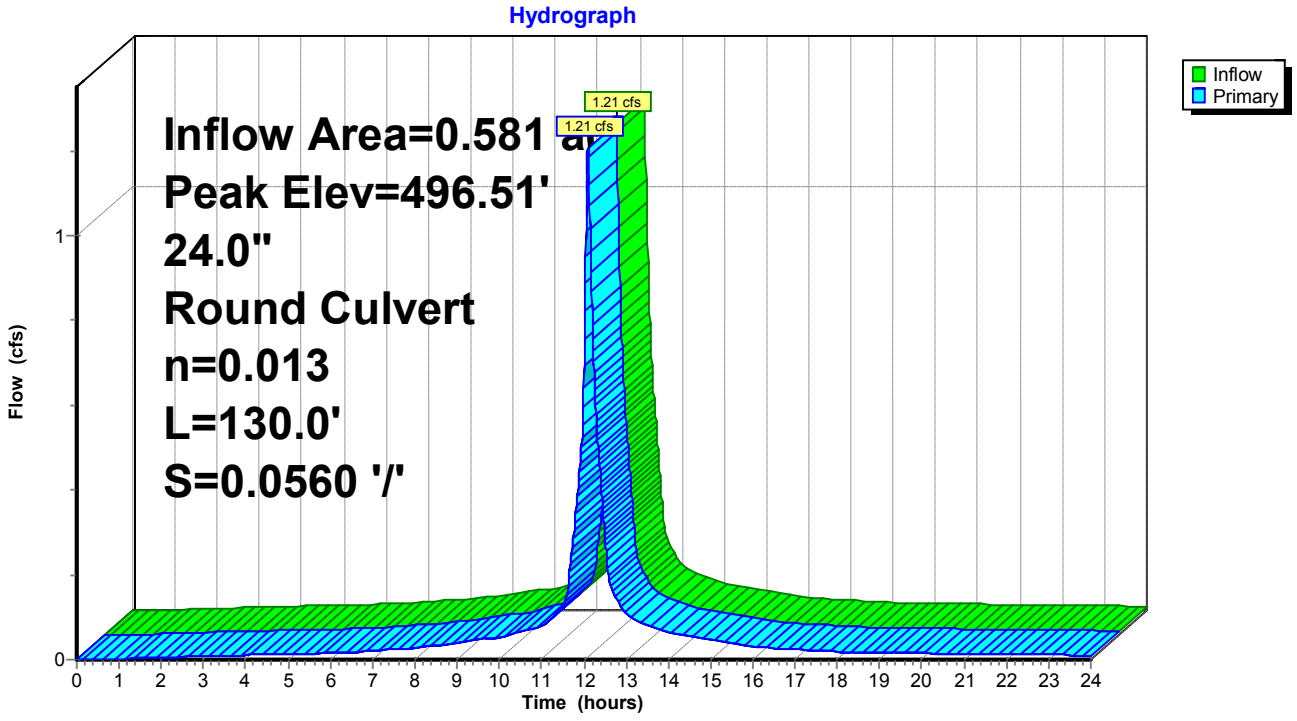
Inflow Area = 0.581 ac,100.00% Impervious, Inflow Depth > 1.99" for 10-year event
Inflow = 1.21 cfs @ 12.10 hrs, Volume= 0.097 af
Outflow = 1.21 cfs @ 12.10 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.10 hrs, Volume= 0.097 af
Routed to Pond CB-#5 : CB-#5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.51' @ 12.10 hrs
Flood Elev= 499.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.06'	**24.0" Round Culvert** L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.06' / 488.78' S= 0.0560 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.21 cfs @ 12.10 hrs HW=496.51' (Free Discharge)
1=Culvert (Inlet Controls 1.21 cfs @ 2.28 fps)

Pond CB-#4: CB-#4



Summary for Pond CB-#5: CB-#5

[79] Warning: Submerged Pond CB-#4 Primary device # 1 OUTLET by 0.80'

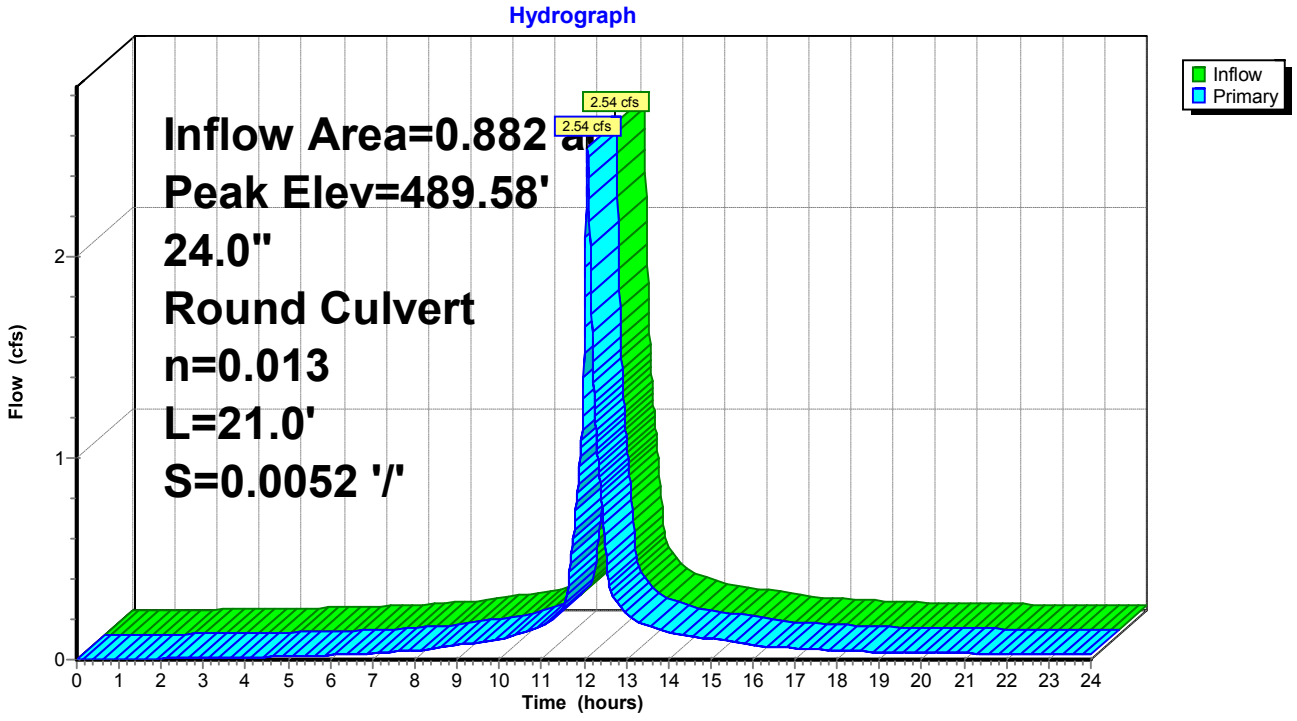
Inflow Area = 0.882 ac, 90.31% Impervious, Inflow Depth > 2.67" for 10-year event
Inflow = 2.54 cfs @ 12.09 hrs, Volume= 0.196 af
Outflow = 2.54 cfs @ 12.09 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min
Primary = 2.54 cfs @ 12.09 hrs, Volume= 0.196 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 489.58' @ 12.09 hrs
Flood Elev= 492.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	488.78'	**24.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 488.78' / 488.67' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.54 cfs @ 12.09 hrs HW=489.58' (Free Discharge)
1=Culvert (Barrel Controls 2.54 cfs @ 3.21 fps)

Pond CB-#5: CB-#5



Summary for Pond DW-#1: DW-#1

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af
Outflow = 0.03 cfs @ 12.87 hrs, Volume= 0.024 af, Atten= 90%, Lag= 46.9 min
Discarded = 0.03 cfs @ 12.87 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 512.29' @ 12.87 hrs Surf.Area= 461 sf Storage= 362 cf
Flood Elev= 515.35' Storage= 1,157 cf

Plug-Flow detention time= 92.2 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 91.0 min (838.5 - 747.5)

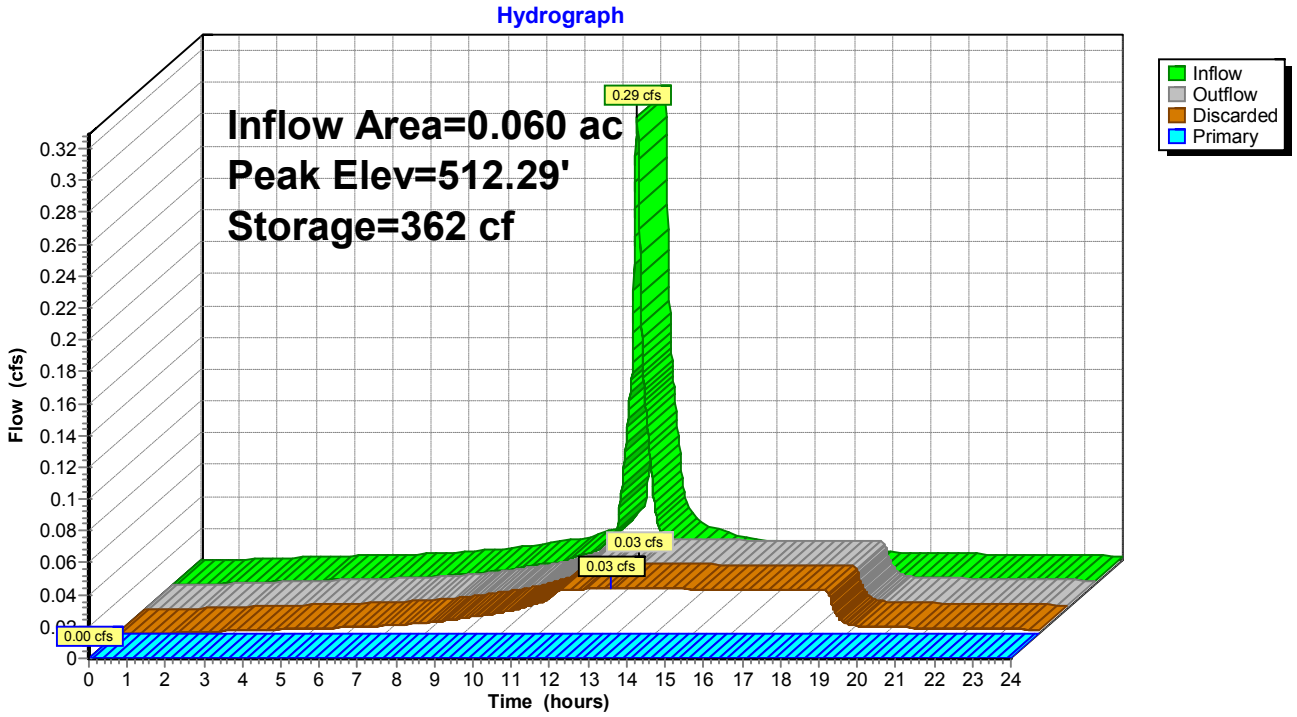
Volume	Invert	Avail.Storage	Storage Description
#1	511.52'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	511.52'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 497.00'
#2	Primary	513.02'	**4.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 513.02' / 506.48' S= 0.0798 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.87 hrs HW=512.29' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=511.52' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#1: DW-#1


Hydrograph
Inflow Area=0.060 ac
Peak Elev=512.29'
Storage=362 cf
0.29 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#2: DW-#2

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af
Outflow = 0.03 cfs @ 12.88 hrs, Volume= 0.024 af, Atten= 91%, Lag= 47.9 min
Discarded = 0.03 cfs @ 12.88 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 511.47' @ 12.88 hrs Surf.Area= 461 sf Storage= 364 cf
Flood Elev= 514.52' Storage= 1,157 cf

Plug-Flow detention time= 94.0 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 92.8 min (840.2 - 747.5)

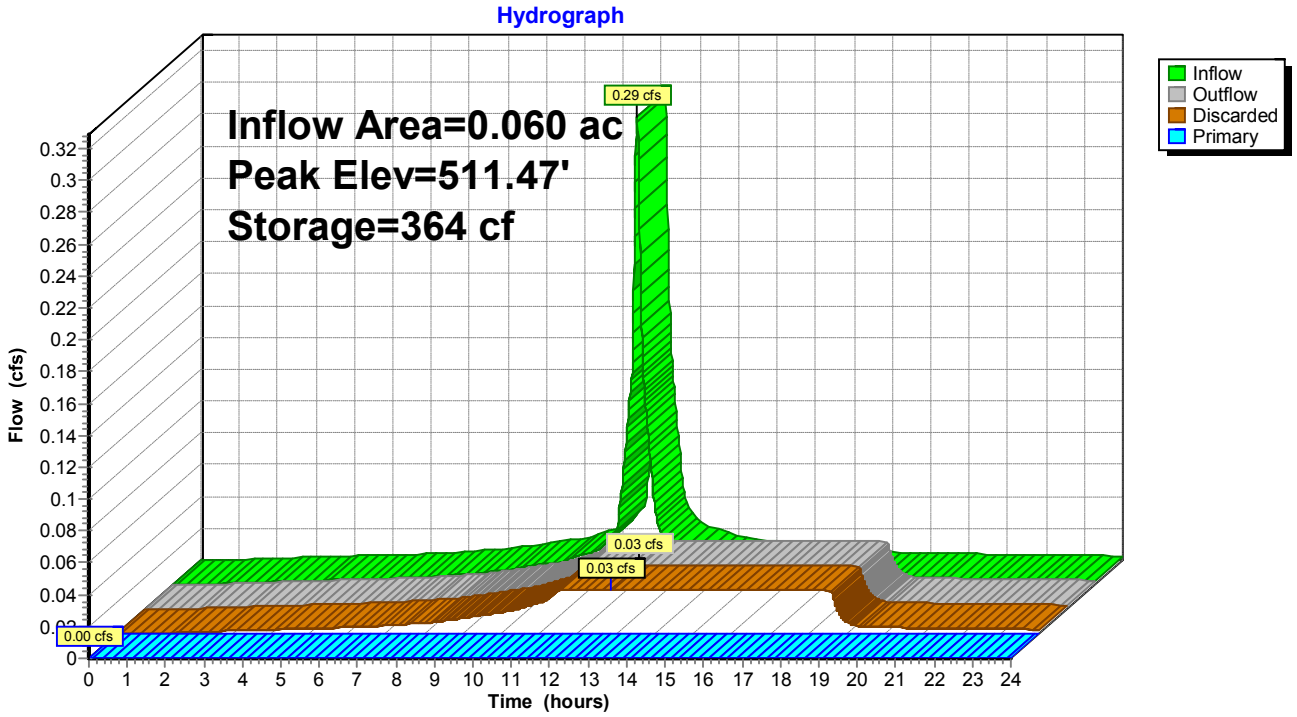
Volume	Invert	Avail.Storage	Storage Description
#1	510.69'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	510.69'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 489.00'
#2	Primary	512.19'	**4.0" Round Culvert** L= 39.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 512.19' / 506.48' S= 0.1464 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.88 hrs HW=511.47' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=510.69' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#2: DW-#2


Hydrograph
Inflow Area=0.060 ac
Peak Elev=511.47'
Storage=364 cf
0.29 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#3: DW-#3

Inflow Area = 0.058 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af
Outflow = 0.19 cfs @ 12.17 hrs, Volume= 0.021 af, Atten= 32%, Lag= 5.0 min
Discarded = 0.01 cfs @ 12.17 hrs, Volume= 0.014 af
Primary = 0.18 cfs @ 12.17 hrs, Volume= 0.007 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 507.09' @ 12.17 hrs Surf.Area= 152 sf Storage= 287 cf
Flood Elev= 509.29' Storage= 386 cf

Plug-Flow detention time= 141.4 min calculated for 0.021 af (92% of inflow)
Center-of-Mass det. time= 99.9 min (847.3 - 747.5)

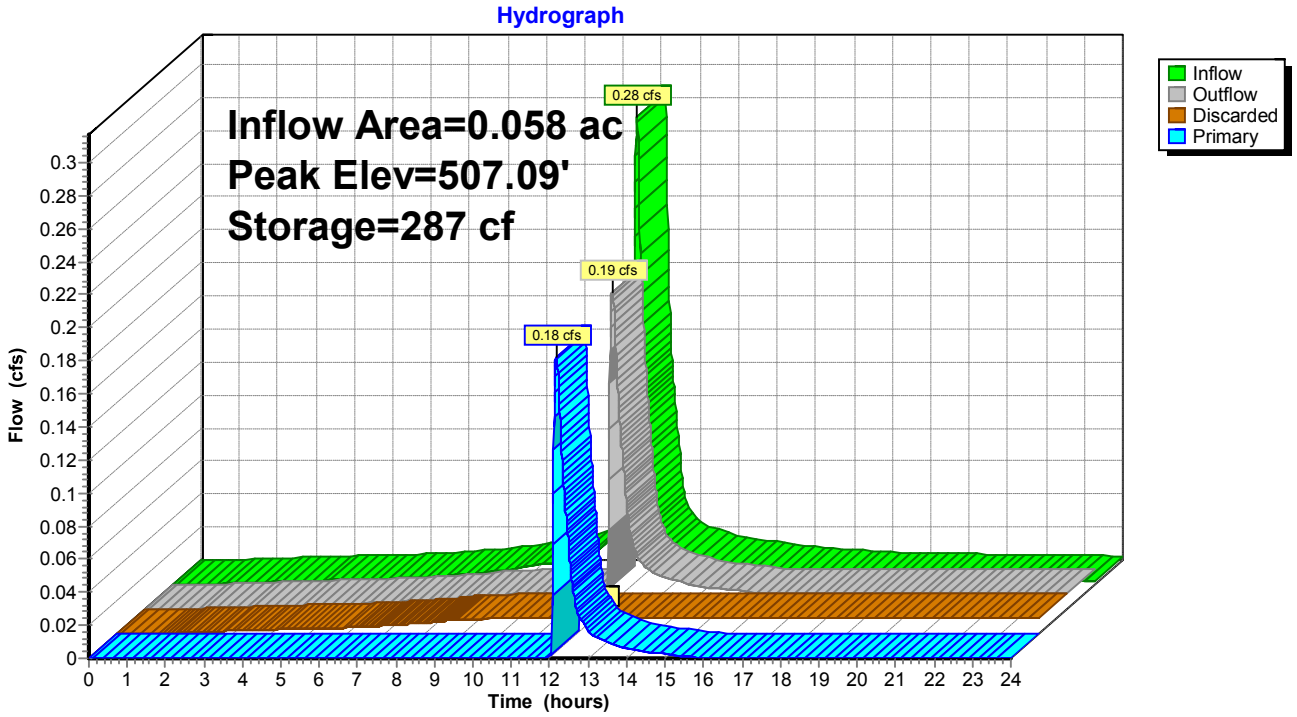
Volume	Invert	Avail.Storage	Storage Description
#1	505.24'	386 cf	**Shea Dry Well 1000gal** x 3 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	505.24'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 489.00'
#2	Primary	506.74'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 506.74' / 506.48' S= 0.0153 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.01 cfs @ 12.17 hrs HW=507.09' (Free Discharge)
1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=0.18 cfs @ 12.17 hrs HW=507.09' (Free Discharge)
2=Culvert (Inlet Controls 0.18 cfs @ 2.09 fps)

Pond DW-#3: DW-#3


Hydrograph
Inflow Area=0.058 ac
Peak Elev=507.09'
Storage=287 cf
0.28 cfs
0.19 cfs
0.18 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond DW-#4: DW-#4

Inflow Area = 0.058 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af
Outflow = 0.03 cfs @ 12.83 hrs, Volume= 0.023 af, Atten= 90%, Lag= 44.8 min
Discarded = 0.03 cfs @ 12.83 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 503.55' @ 12.83 hrs Surf.Area= 461 sf Storage= 349 cf
Flood Elev= 507.74' Storage= 1,157 cf

Plug-Flow detention time= 89.9 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 88.4 min (835.9 - 747.5)

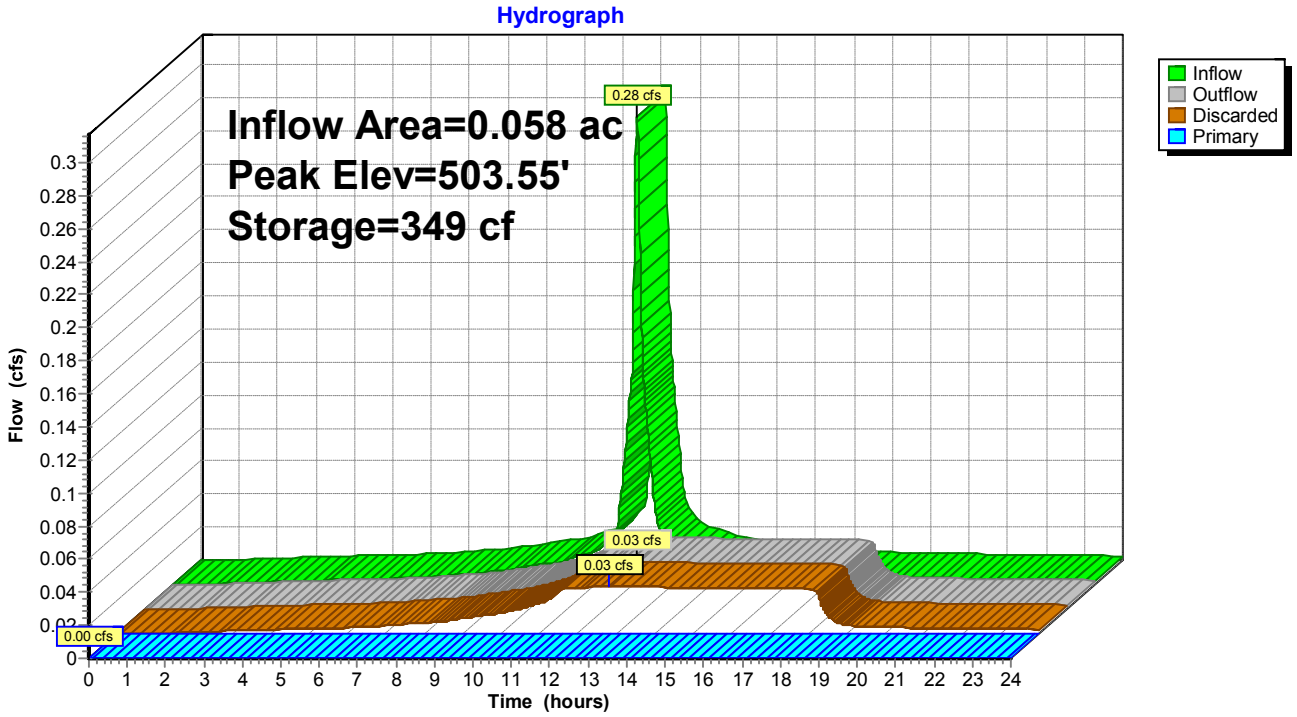
Volume	Invert	Avail.Storage	Storage Description
#1	502.80'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	502.80'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 488.00'
#2	Primary	504.30'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 504.30' / 503.03' S= 0.0747 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.83 hrs HW=503.55' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=502.80' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#4: DW-#4


Hydrograph
Inflow Area=0.058 ac
Peak Elev=503.55'
Storage=349 cf
0.28 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#5: DW-#5

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af
Outflow = 0.03 cfs @ 12.87 hrs, Volume= 0.024 af, Atten= 90%, Lag= 47.1 min
Discarded = 0.03 cfs @ 12.87 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 500.14' @ 12.87 hrs Surf.Area= 461 sf Storage= 366 cf
Flood Elev= 504.23' Storage= 1,157 cf

Plug-Flow detention time= 95.0 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 93.5 min (841.0 - 747.5)

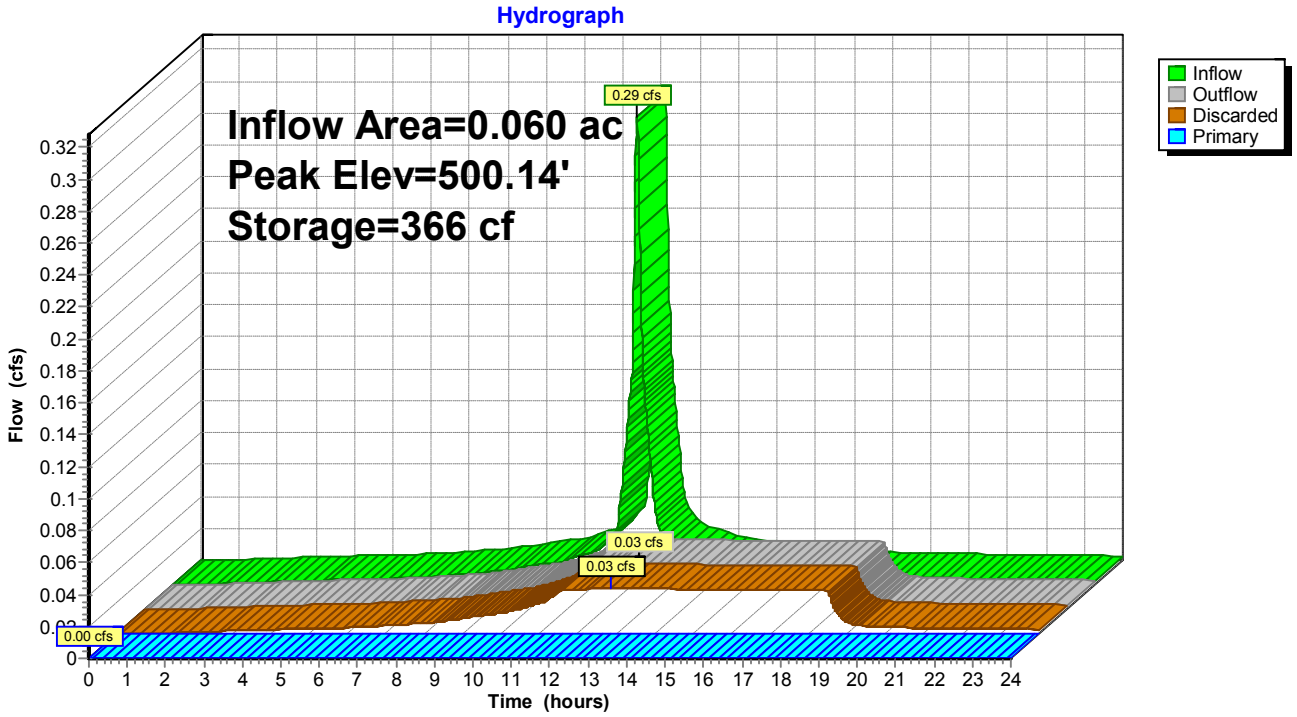
Volume	Invert	Avail.Storage	Storage Description
#1	499.36'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	499.36'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 483.00'
#2	Primary	500.86'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.86' / 500.35' S= 0.0300 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.87 hrs HW=500.14' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=499.36' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Pond DW-#5: DW-#5


Hydrograph
Inflow Area=0.060 ac
Peak Elev=500.14'
Storage=366 cf
0.29 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond DW-#6: DW-#6

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 4.76" for 10-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af
Outflow = 0.03 cfs @ 12.82 hrs, Volume= 0.024 af, Atten= 90%, Lag= 44.1 min
Discarded = 0.03 cfs @ 12.82 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 498.64' @ 12.82 hrs Surf.Area= 461 sf Storage= 362 cf
Flood Elev= 502.70' Storage= 1,157 cf

Plug-Flow detention time= 90.0 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 88.5 min (836.0 - 747.5)

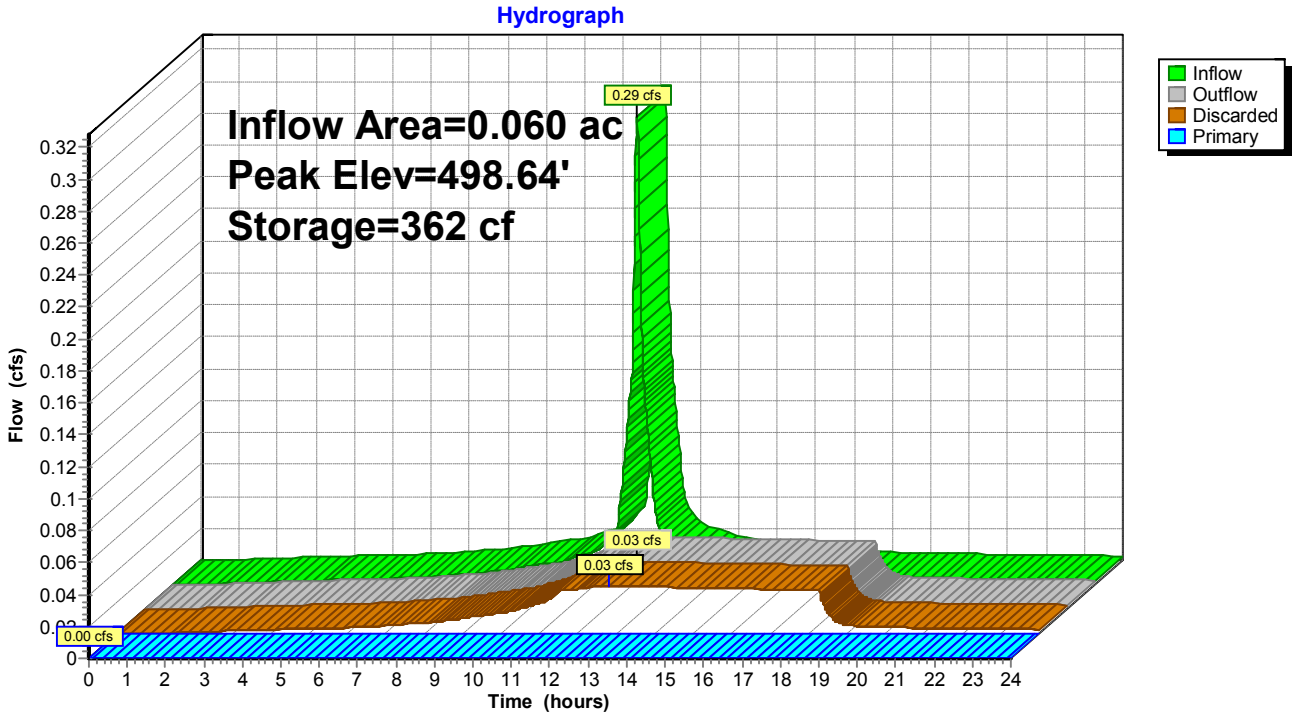
Volume	Invert	Avail.Storage	Storage Description
#1	497.87'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	497.87'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 490.00'
#2	Primary	499.37'	**4.0" Round Culvert** L= 13.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 499.37' / 496.88' S= 0.1791 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.82 hrs HW=498.64' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=497.87' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Pond DW-#6: DW-#6


Hydrograph
Inflow Area=0.060 ac
Peak Elev=498.64'
Storage=362 cf
0.29 cfs
0.03 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond SDMH #5: SDMH #5

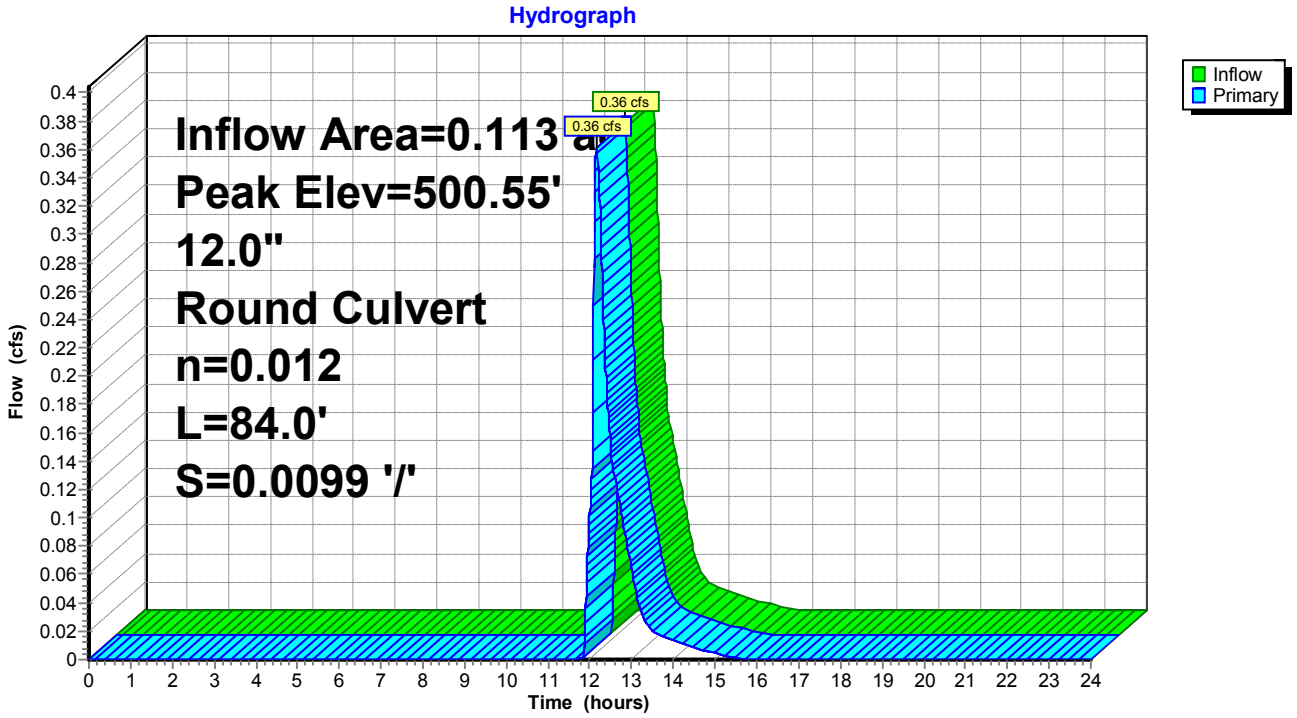
Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 1.89" for 10-year event
Inflow = 0.36 cfs @ 12.16 hrs, Volume= 0.018 af
Outflow = 0.36 cfs @ 12.16 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.36 cfs @ 12.16 hrs, Volume= 0.018 af
Routed to Pond SDMH #6 : SDMH #6

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 500.55' @ 12.16 hrs
Flood Elev= 505.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	500.25'	**12.0" Round Culvert** L= 84.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.25' / 499.42' S= 0.0099 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.36 cfs @ 12.16 hrs HW=500.55' (Free Discharge)
1=Culvert (Inlet Controls 0.36 cfs @ 1.85 fps)

Pond SDMH #5: SDMH #5



Summary for Pond SDMH #6: SDMH #6

[79] Warning: Submerged Pond SDMH #5 Primary device # 1 OUTLET by 0.43'

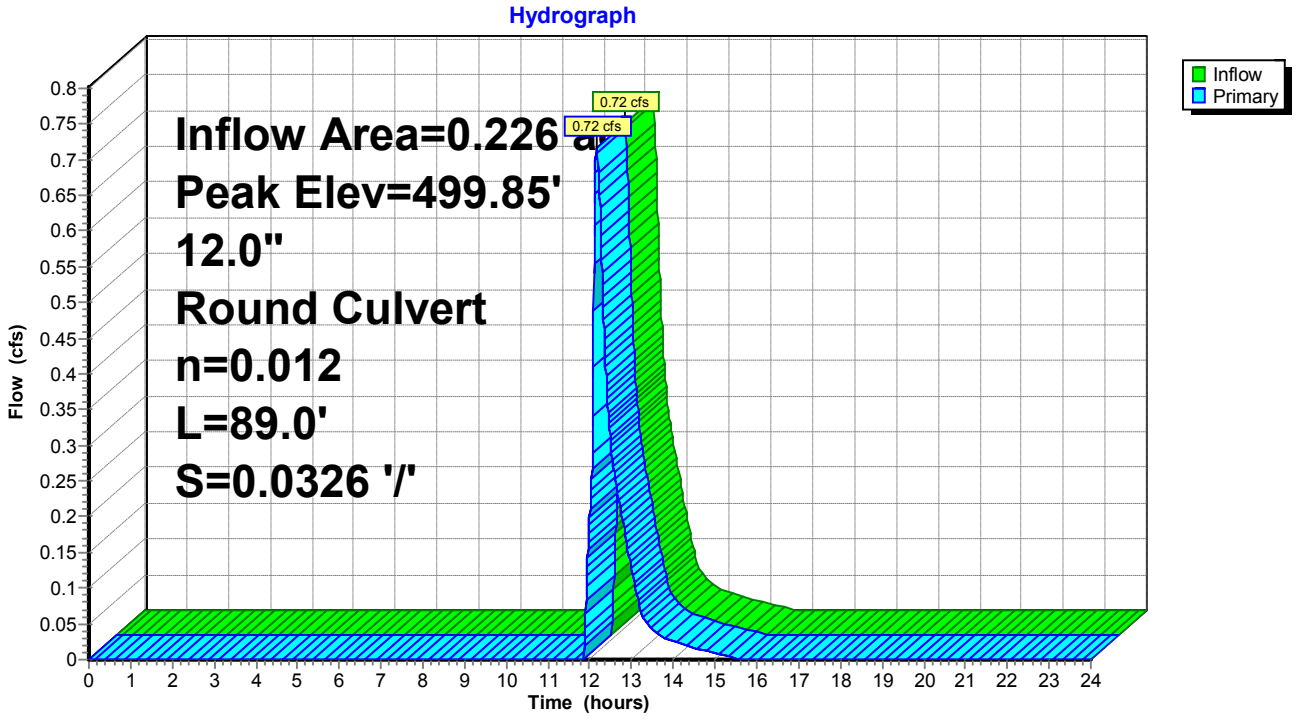
Inflow Area = 0.226 ac,100.00% Impervious, Inflow Depth = 1.89" for 10-year event
Inflow = 0.72 cfs @ 12.17 hrs, Volume= 0.036 af
Outflow = 0.72 cfs @ 12.17 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.17 hrs, Volume= 0.036 af
Routed to Pond SDMH #7 : SDMH #7

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 499.85' @ 12.17 hrs
Flood Elev= 505.89'

Device	Routing	Invert	Outlet Devices
#1	Primary	499.42'	**12.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 499.42' / 496.52' S= 0.0326 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.17 hrs HW=499.85' (Free Discharge)
1=Culvert (Inlet Controls 0.71 cfs @ 2.23 fps)

Pond SDMH #6: SDMH #6



Summary for Pond SDMH #7: SDMH #7

[79] Warning: Submerged Pond SDMH #6 Primary device # 1 OUTLET by 0.31'

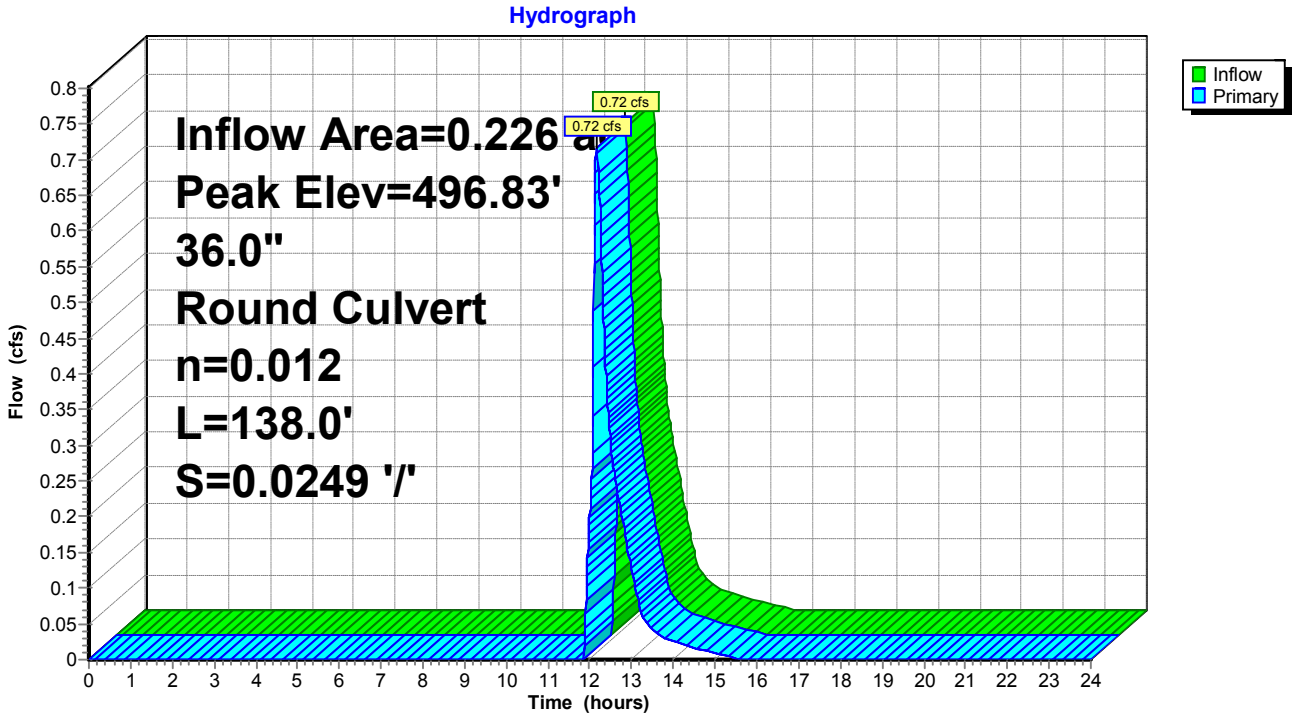
Inflow Area = 0.226 ac,100.00% Impervious, Inflow Depth = 1.89" for 10-year event
Inflow = 0.72 cfs @ 12.17 hrs, Volume= 0.036 af
Outflow = 0.72 cfs @ 12.17 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.17 hrs, Volume= 0.036 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.83' @ 12.17 hrs
Flood Elev= 503.74'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.52'	**36.0" Round Culvert** L= 138.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.52' / 493.08' S= 0.0249 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=0.71 cfs @ 12.17 hrs HW=496.83' (Free Discharge)
1=Culvert (Inlet Controls 0.71 cfs @ 1.88 fps)

Pond SDMH #7: SDMH #7



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment POST-WS1: POST-WS1A Runoff Area=13,077 sf 71.55% Impervious Runoff Depth>7.91"
Flow Length=212' Tc=6.0 min CN=91 Runoff=2.56 cfs 0.198 af

Subcatchment POST-WS1B: POST-WS1B Runoff Area=5,790 sf 100.00% Impervious Runoff Depth>8.75"
Flow Length=212' Tc=6.0 min CN=98 Runoff=1.18 cfs 0.097 af

Subcatchment POST-WS1C: POST-WS1C Runoff Area=4,054 sf 100.00% Impervious Runoff Depth>8.75"
Flow Length=98' Slope=0.0750 '/' Tc=6.0 min CN=98 Runoff=0.82 cfs 0.068 af

Subcatchment POST-WS2: POST-WS2 Runoff Area=66,602 sf 0.00% Impervious Runoff Depth>6.06"
Flow Length=297' Tc=17.3 min CN=76 Runoff=7.74 cfs 0.772 af

Subcatchment POST-WS3A: POST-WS3A Runoff Area=8,533 sf 0.00% Impervious Runoff Depth>5.82"
Tc=6.0 min CN=74 Runoff=1.33 cfs 0.095 af

Subcatchment POST-WS3B-1: POST-WS3B Runoff Area=4,943 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=1.00 cfs 0.083 af

Subcatchment POST-WS4A: POST-WS4A Runoff Area=6,873 sf 0.00% Impervious Runoff Depth>5.82"
Tc=6.0 min CN=74 Runoff=1.07 cfs 0.077 af

Subcatchment POST-WS4B-1: Runoff Area=4,904 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=1.00 cfs 0.082 af

Subcatchment POST-WS5A: POST-WS5A Runoff Area=8,212 sf 0.00% Impervious Runoff Depth>5.82"
Tc=6.0 min CN=74 Runoff=1.28 cfs 0.091 af

Subcatchment POST-WS5B-1: Runoff Area=4,895 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.99 cfs 0.082 af

Subcatchment POST-WS6A: POST-WS6A Runoff Area=6,416 sf 0.00% Impervious Runoff Depth>5.82"
Tc=6.0 min CN=74 Runoff=1.00 cfs 0.071 af

Subcatchment POST-WS6B-1: Runoff Area=2,615 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.044 af

Subcatchment POST-WS6B-2: Runoff Area=2,615 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.044 af

Subcatchment POST-WS7A: POST-WS7A Runoff Area=6,093 sf 0.00% Impervious Runoff Depth>5.82"
Tc=6.0 min CN=74 Runoff=0.95 cfs 0.068 af

Subcatchment POST-WS7B-1: Runoff Area=2,520 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.51 cfs 0.042 af

Subcatchment POST-WS7B-2: Runoff Area=2,520 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.51 cfs 0.042 af

Subcatchment POST-WS8A: POST-WS8A Runoff Area=6,216 sf 0.00% Impervious Runoff Depth>5.82"
Tc=6.0 min CN=74 Runoff=0.97 cfs 0.069 af

Subcatchment POST-WS8B-1: Runoff Area=2,608 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.044 af

Subcatchment POST-WS8B-2: Runoff Area=2,608 sf 100.00% Impervious Runoff Depth>8.75"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.044 af

Subcatchment PRE-WS1: PRE-WS1 Runoff Area=15,523 sf 0.00% Impervious Runoff Depth>6.93"
Flow Length=415' Tc=6.0 min CN=83 Runoff=2.80 cfs 0.206 af

Subcatchment PRE-WS2: PRE-WS2 Runoff Area=75,925 sf 0.00% Impervious Runoff Depth>6.06"
Flow Length=297' Tc=17.3 min CN=76 Runoff=8.82 cfs 0.880 af

Subcatchment PRE-WS3: PRE-WS3 Runoff Area=13,477 sf 0.00% Impervious Runoff Depth>6.93"
Flow Length=149' Tc=9.7 min CN=83 Runoff=2.15 cfs 0.179 af

Subcatchment PRE-WS4: PRE-WS4 Runoff Area=11,780 sf 0.00% Impervious Runoff Depth>7.05"
Flow Length=166' Tc=12.2 min CN=84 Runoff=1.77 cfs 0.159 af

Subcatchment PRE-WS5: PRE-WS5 Runoff Area=13,106 sf 0.00% Impervious Runoff Depth>6.80"
Flow Length=165' Tc=10.3 min CN=82 Runoff=2.03 cfs 0.171 af

Subcatchment PRE-WS6: PRE-WS6 Runoff Area=11,646 sf 0.00% Impervious Runoff Depth>6.80"
Flow Length=78' Slope=0.1350 '/' Tc=8.5 min CN=82 Runoff=1.91 cfs 0.152 af

Subcatchment PRE-WS7: PRE-WS7 Runoff Area=11,133 sf 0.00% Impervious Runoff Depth>6.80"
Flow Length=87' Slope=0.0700 '/' Tc=12.0 min CN=82 Runoff=1.63 cfs 0.145 af

Subcatchment PRE-WS8: PRE-WS8 Runoff Area=11,431 sf 0.00% Impervious Runoff Depth>6.80"
Flow Length=135' Tc=13.8 min CN=82 Runoff=1.60 cfs 0.149 af

Reach POST: POST Inflow=18.49 cfs 1.781 af
Outflow=18.49 cfs 1.781 af

Reach PRE: PRE Inflow=20.65 cfs 2.039 af
Outflow=20.65 cfs 2.039 af

Pond ADS-#1: ADS-#1 Peak Elev=503.44' Storage=654 cf Inflow=1.00 cfs 0.083 af
Discarded=0.02 cfs 0.034 af Primary=0.67 cfs 0.047 af Outflow=0.69 cfs 0.081 af

Pond ADS-#2: ADS-#2 Peak Elev=503.43' Storage=651 cf Inflow=1.00 cfs 0.082 af
Discarded=0.02 cfs 0.034 af Primary=0.67 cfs 0.047 af Outflow=0.69 cfs 0.080 af

Pond ADS-#3: ADS-#3 Peak Elev=502.35' Storage=629 cf Inflow=0.99 cfs 0.082 af
Discarded=0.02 cfs 0.034 af Primary=0.67 cfs 0.047 af Outflow=0.69 cfs 0.080 af

Pond CB-#1: CB-#1 Peak Elev=507.59' Inflow=0.82 cfs 0.068 af
15.0" Round Culvert n=0.013 L=34.0' S=0.0200 '/' Outflow=0.82 cfs 0.068 af

Pond CB-#2: CB-#2 Peak Elev=506.99' Inflow=1.14 cfs 0.097 af
15.0" Round Culvert n=0.013 L=132.0' S=0.0764 '/' Outflow=1.14 cfs 0.097 af

Pond CB-#3: CB-#3 Peak Elev=497.15' Inflow=2.31 cfs 0.199 af
18.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=2.31 cfs 0.199 af

Pond CB-#4: CB-#4 Peak Elev=496.69' Inflow=2.31 cfs 0.199 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0560 '/' Outflow=2.31 cfs 0.199 af

Pond CB-#5: CB-#5 Peak Elev=489.93' Inflow=4.87 cfs 0.397 af
24.0" Round Culvert n=0.013 L=21.0' S=0.0052 '/' Outflow=4.87 cfs 0.397 af

Pond DW-#1: DW-#1 Peak Elev=513.14' Storage=755 cf Inflow=0.53 cfs 0.044 af
Discarded=0.03 cfs 0.040 af Primary=0.04 cfs 0.003 af Outflow=0.07 cfs 0.042 af

Pond DW-#2: DW-#2 Peak Elev=512.32' Storage=756 cf Inflow=0.53 cfs 0.044 af
Discarded=0.03 cfs 0.039 af Primary=0.04 cfs 0.003 af Outflow=0.07 cfs 0.042 af

Pond DW-#3: DW-#3 Peak Elev=507.68' Storage=377 cf Inflow=0.51 cfs 0.042 af
Discarded=0.01 cfs 0.016 af Primary=0.35 cfs 0.022 af Outflow=0.36 cfs 0.039 af

Pond DW-#4: DW-#4 Peak Elev=504.39' Storage=742 cf Inflow=0.51 cfs 0.042 af
Discarded=0.03 cfs 0.039 af Primary=0.02 cfs 0.002 af Outflow=0.05 cfs 0.041 af

Pond DW-#5: DW-#5 Peak Elev=500.98' Storage=756 cf Inflow=0.53 cfs 0.044 af
Discarded=0.03 cfs 0.040 af Primary=0.04 cfs 0.003 af Outflow=0.07 cfs 0.042 af

Pond DW-#6: DW-#6 Peak Elev=499.49' Storage=752 cf Inflow=0.53 cfs 0.044 af
Discarded=0.03 cfs 0.041 af Primary=0.03 cfs 0.002 af Outflow=0.06 cfs 0.043 af

Pond SDMH #5: SDMH #5 Peak Elev=500.66' Inflow=0.67 cfs 0.047 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0099 '/' Outflow=0.67 cfs 0.047 af

Pond SDMH #6: SDMH #6 Peak Elev=500.03' Inflow=1.34 cfs 0.094 af
12.0" Round Culvert n=0.012 L=89.0' S=0.0326 '/' Outflow=1.34 cfs 0.094 af

Pond SDMH #7: SDMH #7 Peak Elev=496.94' Inflow=1.34 cfs 0.094 af
36.0" Round Culvert n=0.012 L=138.0' S=0.0249 '/' Outflow=1.34 cfs 0.094 af

Total Runoff Area = 7.487 ac Runoff Volume = 4.151 af Average Runoff Depth = 6.65"
84.84% Pervious = 6.352 ac 15.16% Impervious = 1.135 ac

Summary for Subcatchment POST-WS1: POST-WS1A

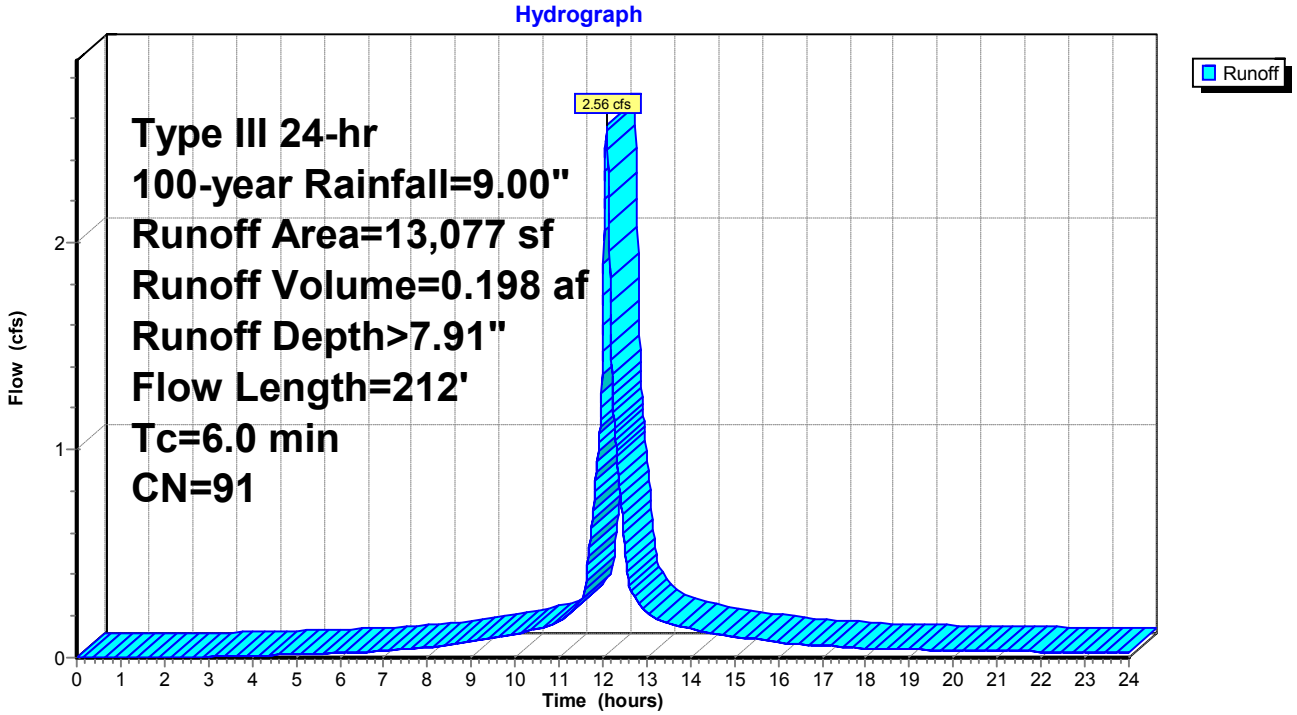
Runoff = 2.56 cfs @ 12.08 hrs, Volume= 0.198 af, Depth> 7.91"
Routed to Pond CB-#5 : CB-#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
9,356	98	Paved parking, HSG C
1,996	72	Woods/grass comb., Good, HSG C
1,725	74	>75% Grass cover, Good, HSG C
13,077	91	Weighted Average
3,721		28.45% Pervious Area
9,356		71.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0698	2.20		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	112	0.0253	2.56		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.5	212	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1: POST-WS1A



Summary for Subcatchment POST-WS1B: POST-WS1B

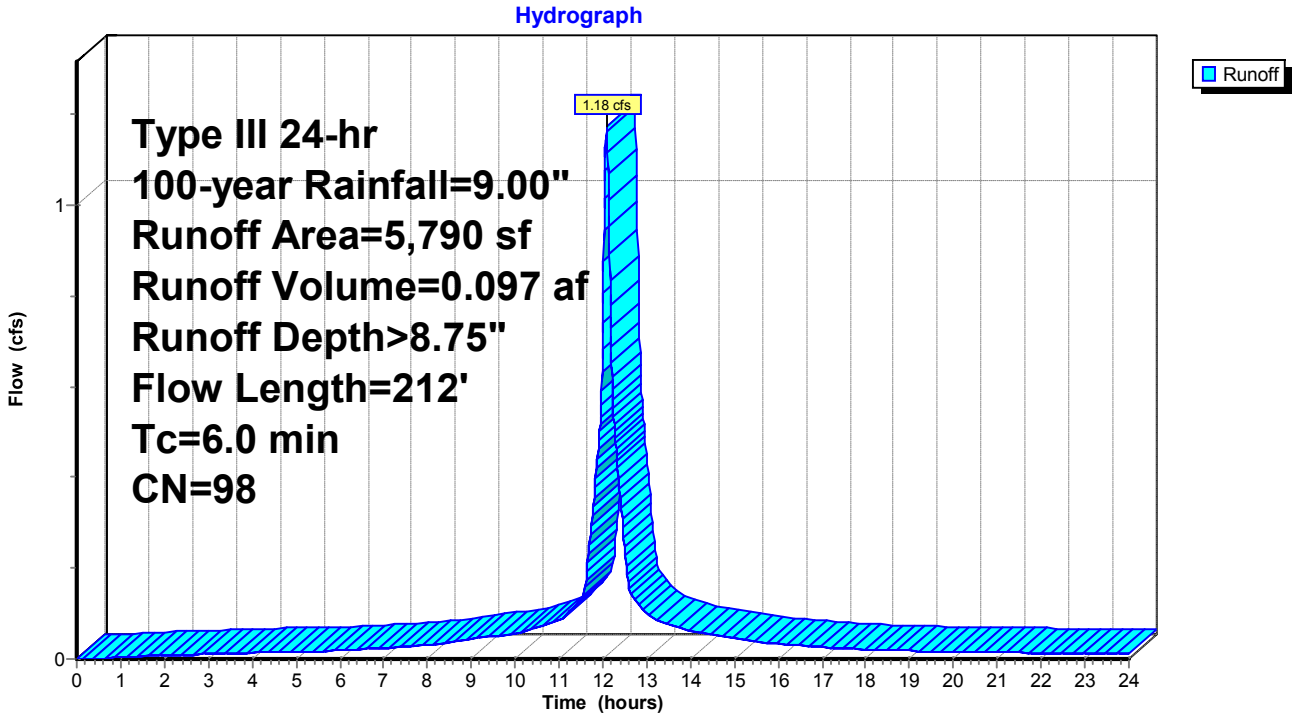
Runoff = 1.18 cfs @ 12.08 hrs, Volume= 0.097 af, Depth> 8.75"
Routed to Pond CB-#3 : CB-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
5,790	98	Paved parking, HSG C
5,790		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0842	2.37		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	112	0.0760	4.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.1	212	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1B: POST-WS1B



Summary for Subcatchment POST-WS1C: POST-WS1C

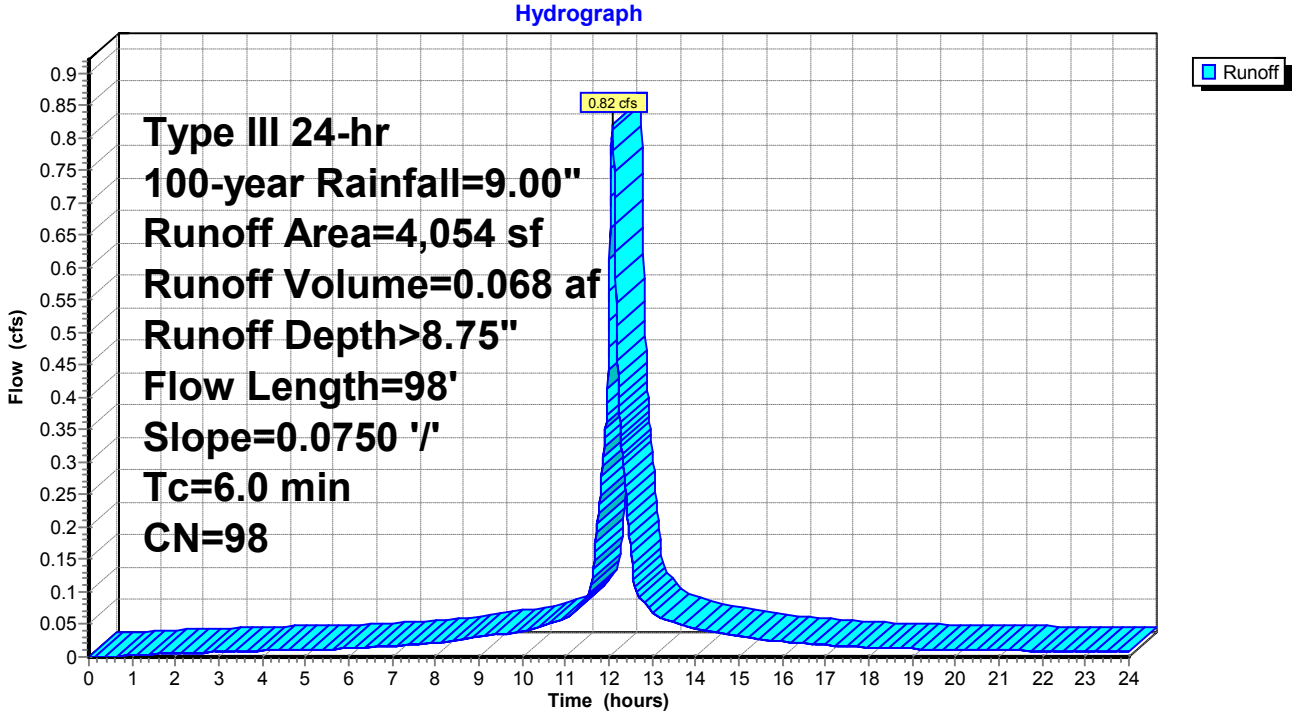
Runoff = 0.82 cfs @ 12.08 hrs, Volume= 0.068 af, Depth> 8.75"
Routed to Pond CB-#1 : CB-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
4,054	98	Paved parking, HSG C
4,054		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	98	0.0750	2.25		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.7	98	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST-WS1C: POST-WS1C



Summary for Subcatchment POST-WS2: POST-WS2

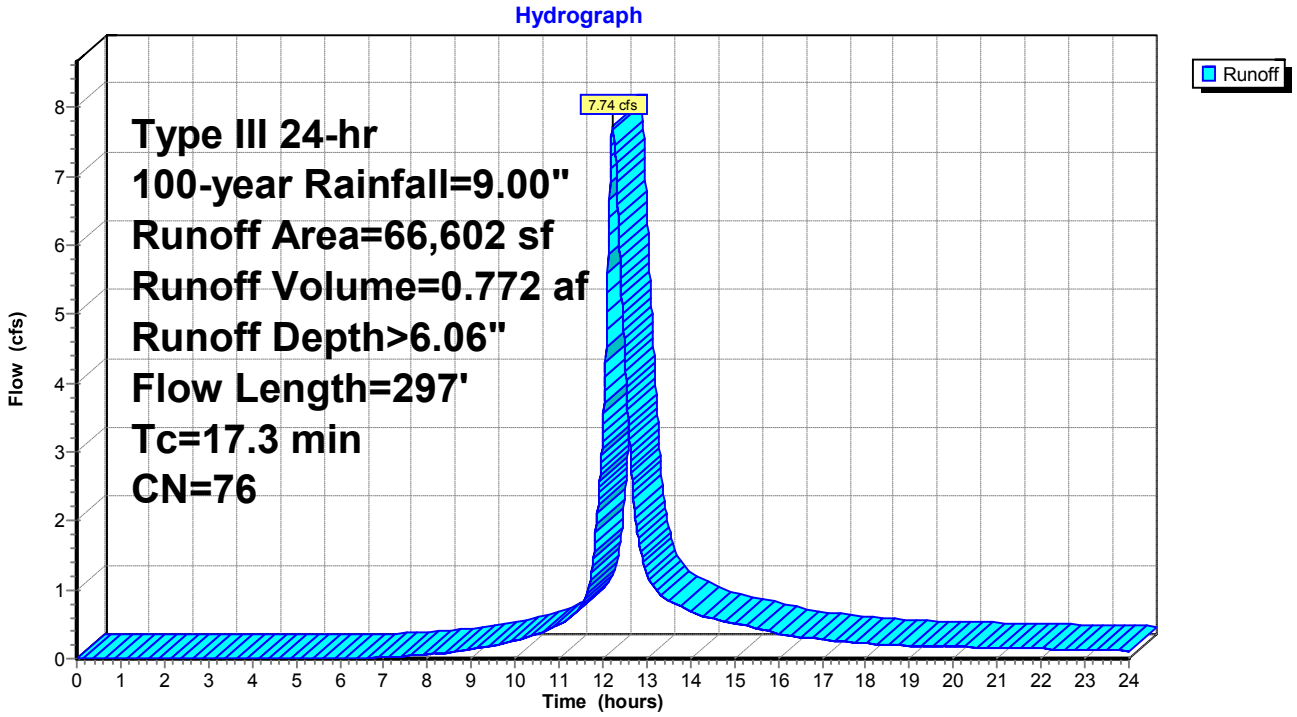
Runoff = 7.74 cfs @ 12.24 hrs, Volume= 0.772 af, Depth> 6.06"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
61,525	76	Woods/grass comb., Fair, HSG C
5,077	74	>75% Grass cover, Good, HSG C
66,602	76	Weighted Average
66,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0600	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
3.0	197	0.0480	1.10		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.3	297	Total			

Subcatchment POST-WS2: POST-WS2



Summary for Subcatchment POST-WS3A: POST-WS3A

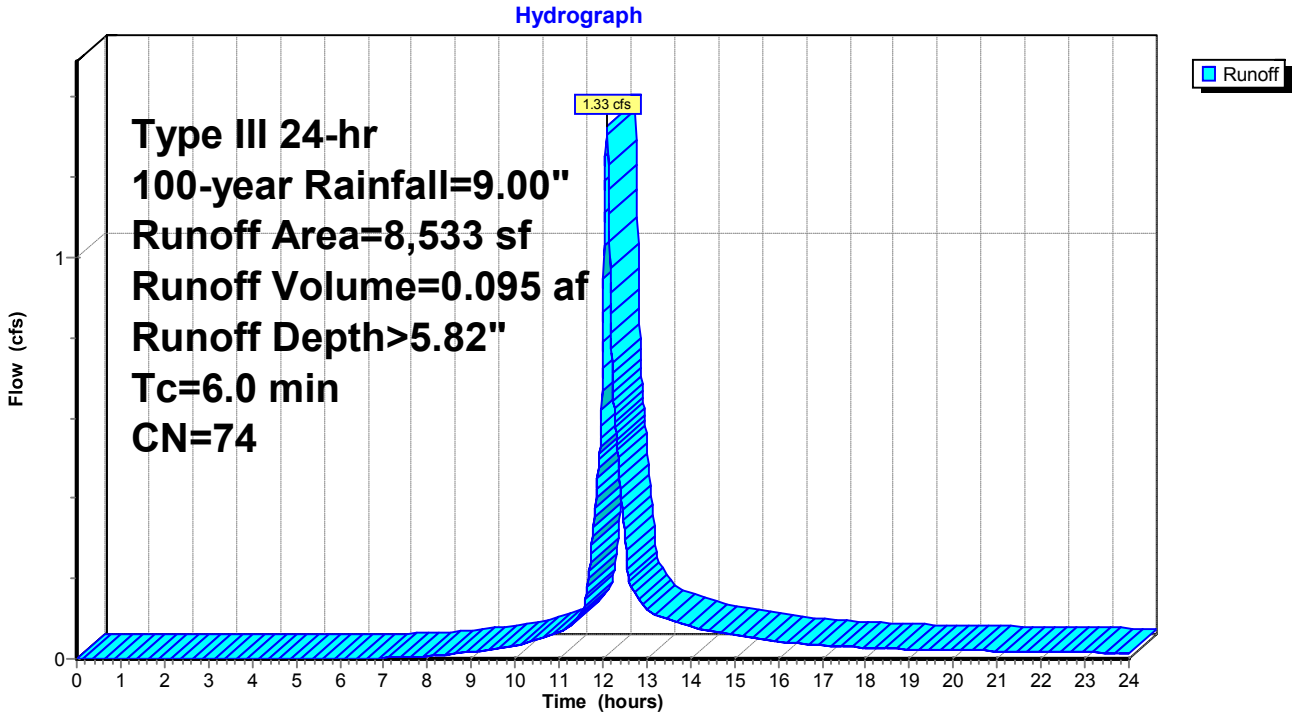
Runoff = 1.33 cfs @ 12.09 hrs, Volume= 0.095 af, Depth> 5.82"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
8,533	74	>75% Grass cover, Good, HSG C
8,533		100.00% Pervious Area

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

Subcatchment POST-WS3A: POST-WS3A



Summary for Subcatchment POST-WS3B-1: POST-WS3B

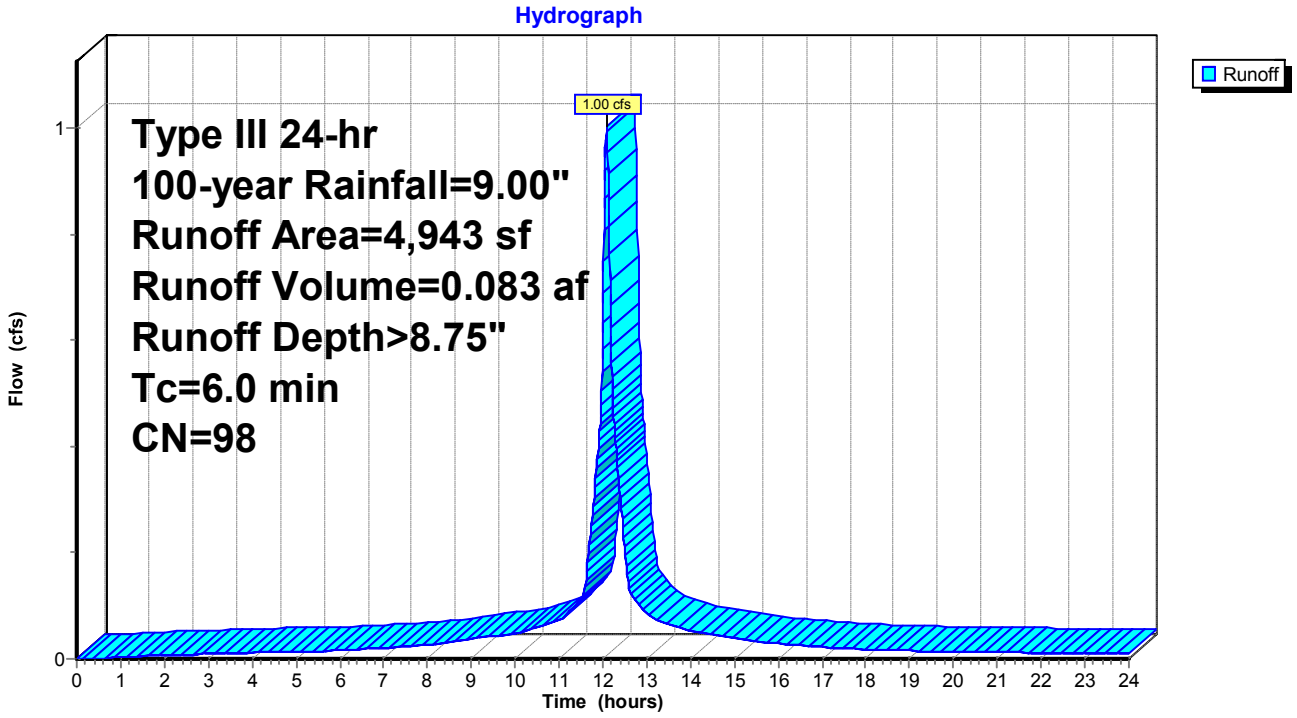
Runoff = 1.00 cfs @ 12.08 hrs, Volume= 0.083 af, Depth> 8.75"
Routed to Pond ADS-#1 : ADS-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
4,943	98	Paved roads w/curbs & sewers, HSG C
4,943		100.00% Impervious Area

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

Subcatchment POST-WS3B-1: POST-WS3B



Summary for Subcatchment POST-WS4A: POST-WS4A

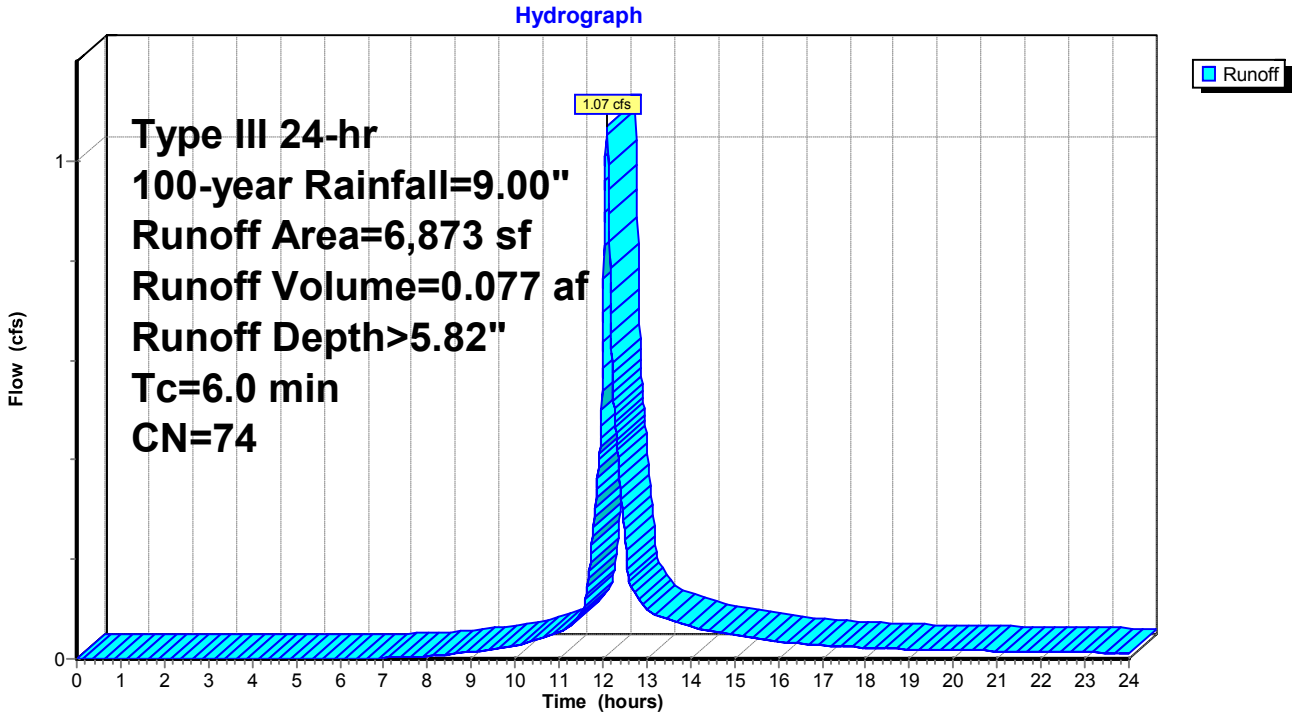
Runoff = 1.07 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 5.82"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
6,873	74	>75% Grass cover, Good, HSG C
6,873		100.00% Pervious Area

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

Subcatchment POST-WS4A: POST-WS4A



Summary for Subcatchment POST-WS4B-1: POST-WS4B-1

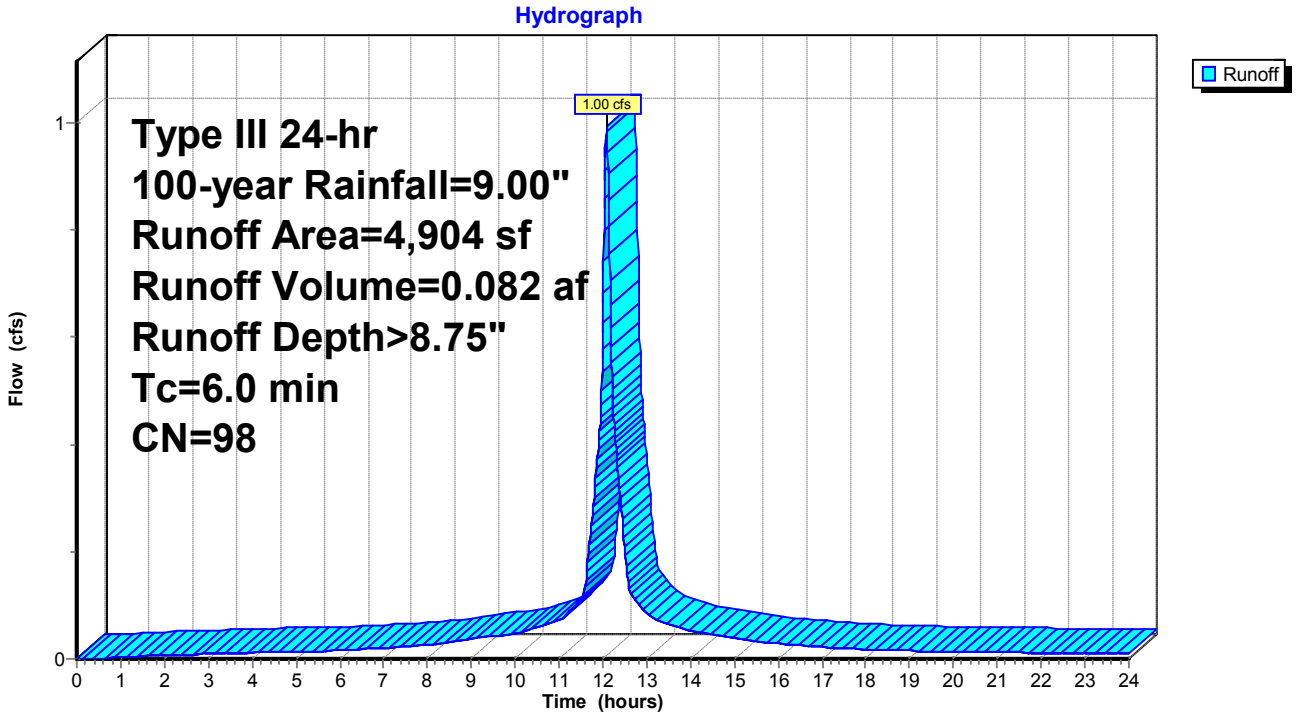
Runoff = 1.00 cfs @ 12.08 hrs, Volume= 0.082 af, Depth> 8.75"
Routed to Pond ADS-#2 : ADS-#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
4,904	98	Paved roads w/curbs & sewers, HSG C
4,904		100.00% Impervious Area

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

Subcatchment POST-WS4B-1: POST-WS4B-1



Summary for Subcatchment POST-WS5A: POST-WS5A

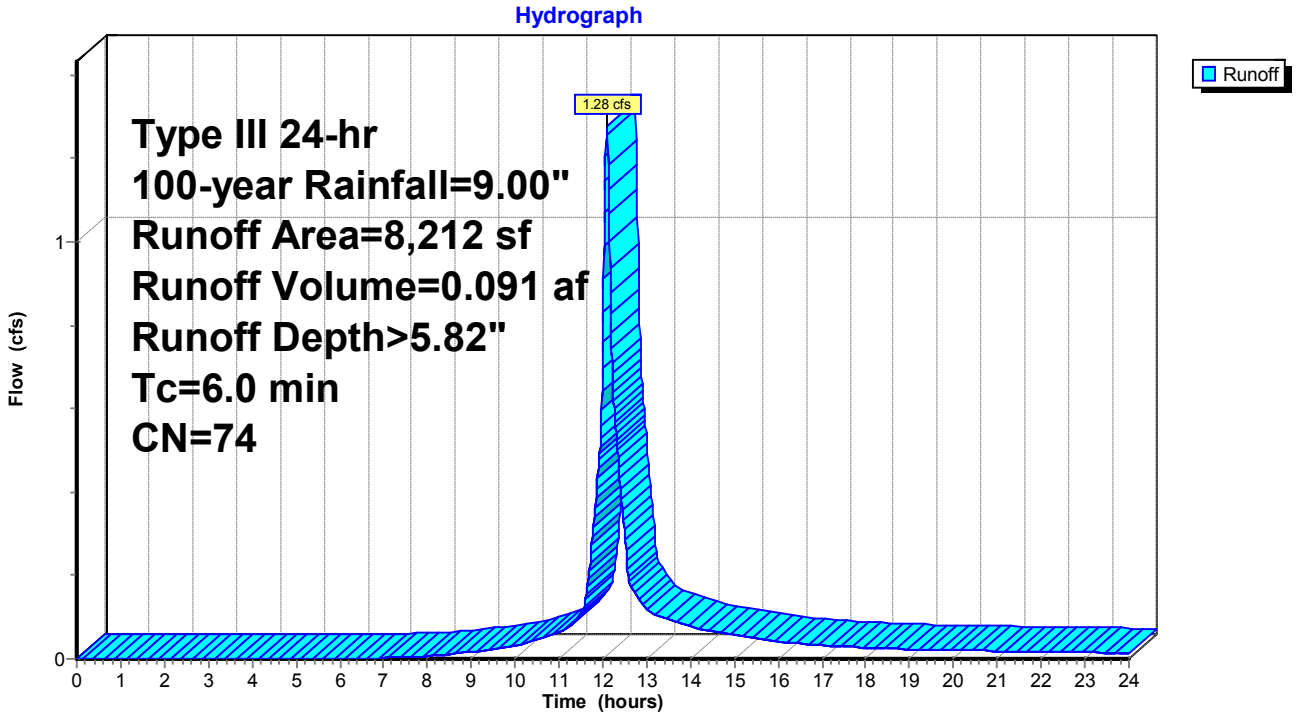
Runoff = 1.28 cfs @ 12.09 hrs, Volume= 0.091 af, Depth> 5.82"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
8,212	74	>75% Grass cover, Good, HSG C
8,212		100.00% Pervious Area

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

Subcatchment POST-WS5A: POST-WS5A



Summary for Subcatchment POST-WS5B-1: POST-WS5B-1

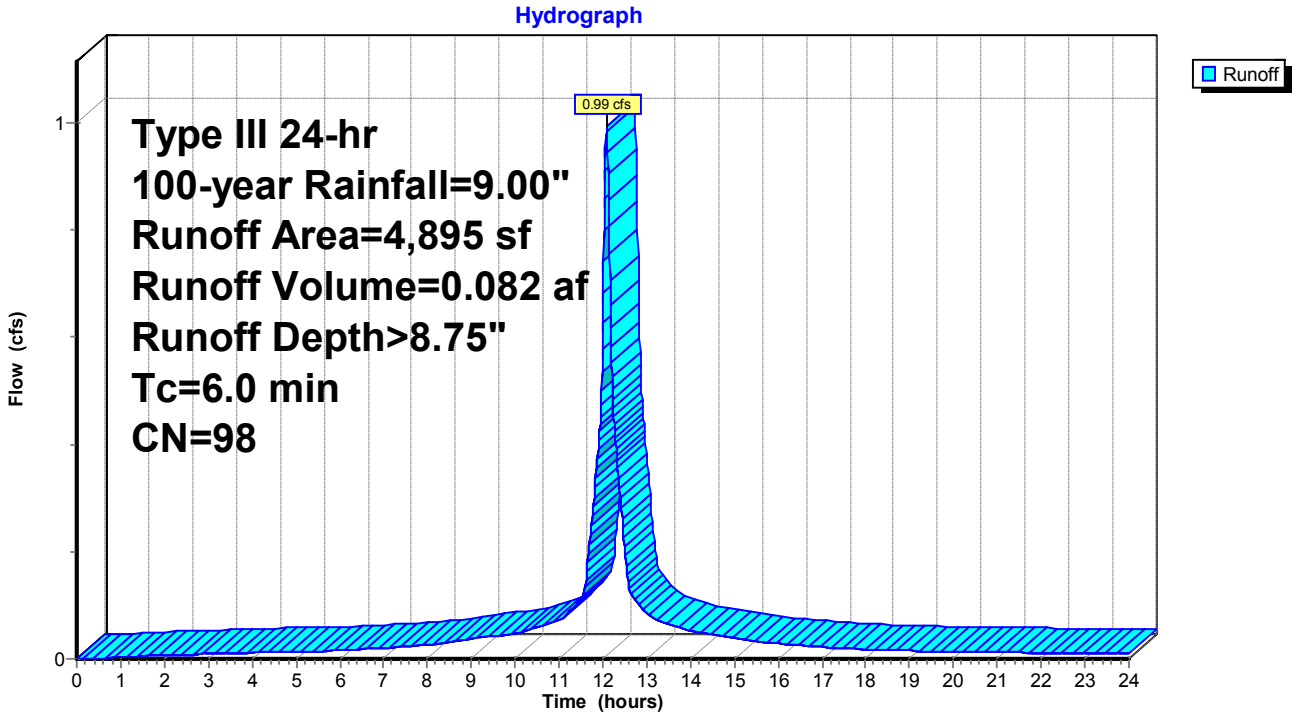
Runoff = 0.99 cfs @ 12.08 hrs, Volume= 0.082 af, Depth> 8.75"
Routed to Pond ADS-#3 : ADS-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
4,895	98	Paved roads w/curbs & sewers, HSG C
4,895		100.00% Impervious Area

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

Subcatchment POST-WS5B-1: POST-WS5B-1



Summary for Subcatchment POST-WS6A: POST-WS6A

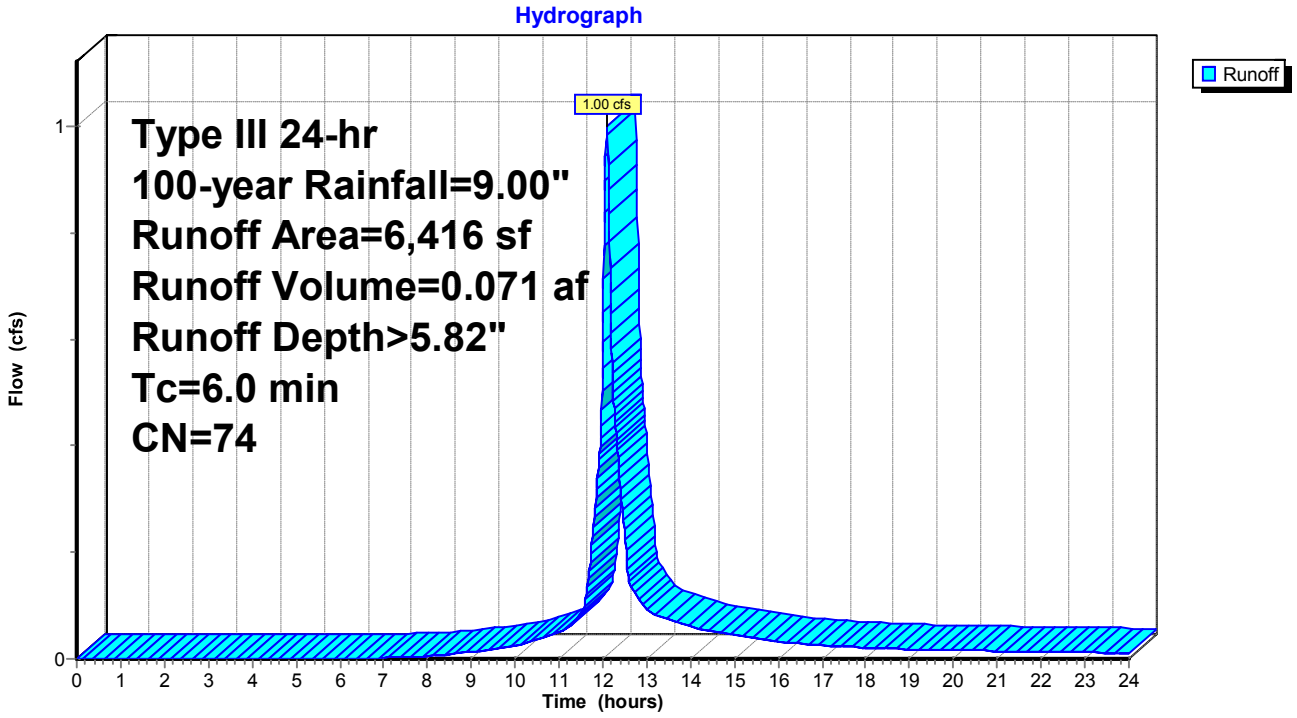
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.071 af, Depth> 5.82"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
6,416	74	>75% Grass cover, Good, HSG C
6,416		100.00% Pervious Area

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

Subcatchment POST-WS6A: POST-WS6A



Summary for Subcatchment POST-WS6B-1: POST-WS6B-1

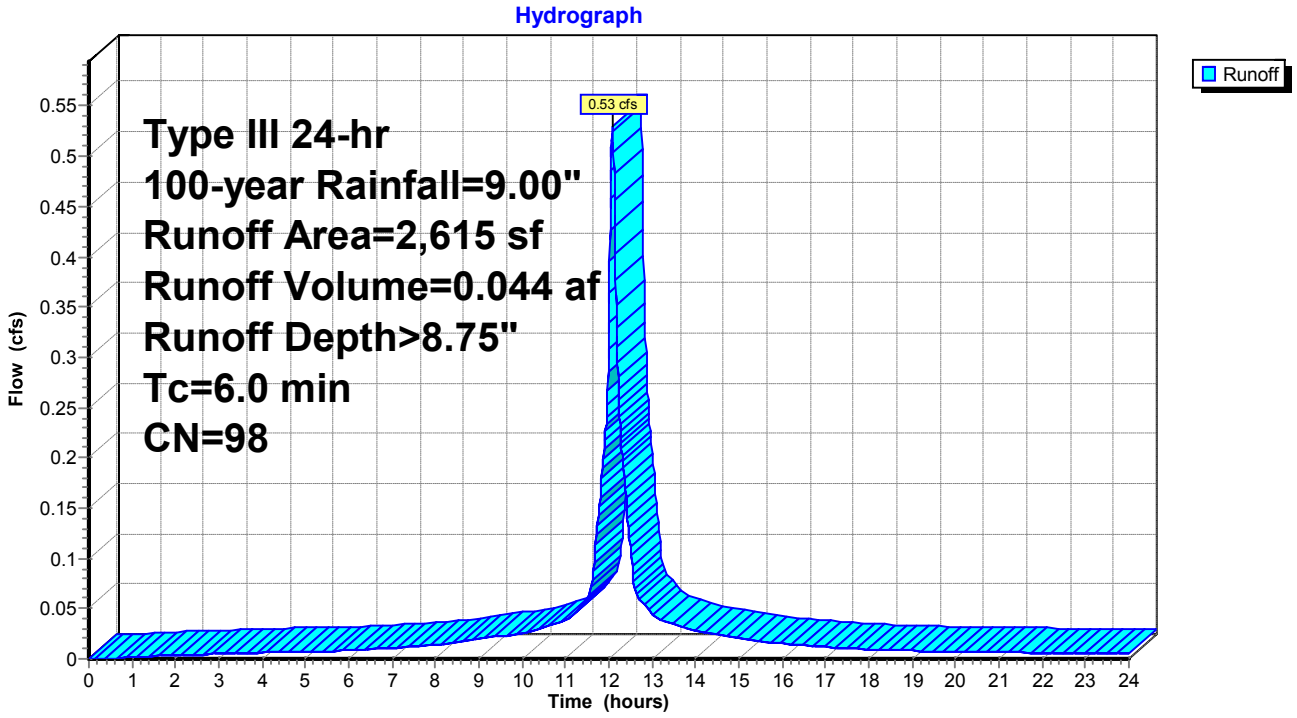
Runoff = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 8.75"
Routed to Pond DW-#1 : DW-#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
2,615	98	Paved parking, HSG C
2,615		100.00% Impervious Area

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

Subcatchment POST-WS6B-1: POST-WS6B-1



Summary for Subcatchment POST-WS6B-2: POST-WS6B-2

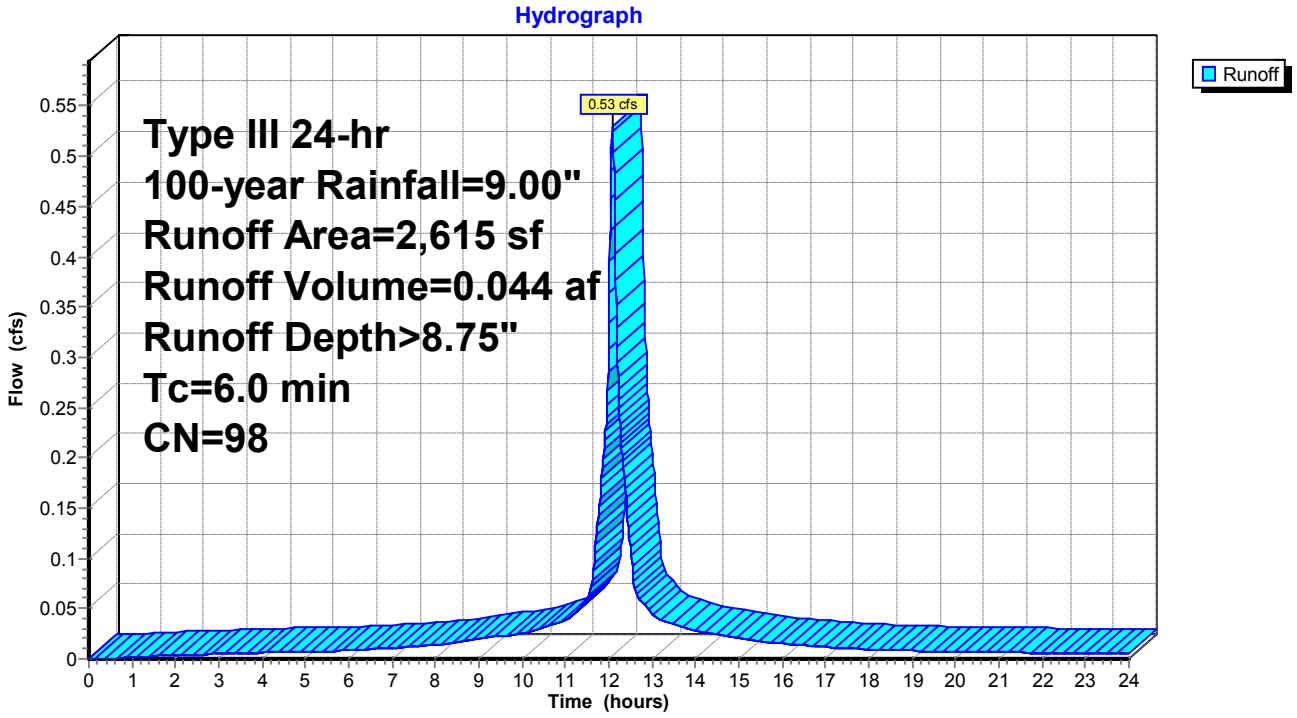
Runoff = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 8.75"
Routed to Pond DW-#2 : DW-#2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
2,615	98	Paved parking, HSG C
2,615		100.00% Impervious Area

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

Subcatchment POST-WS6B-2: POST-WS6B-2



Summary for Subcatchment POST-WS7A: POST-WS7A

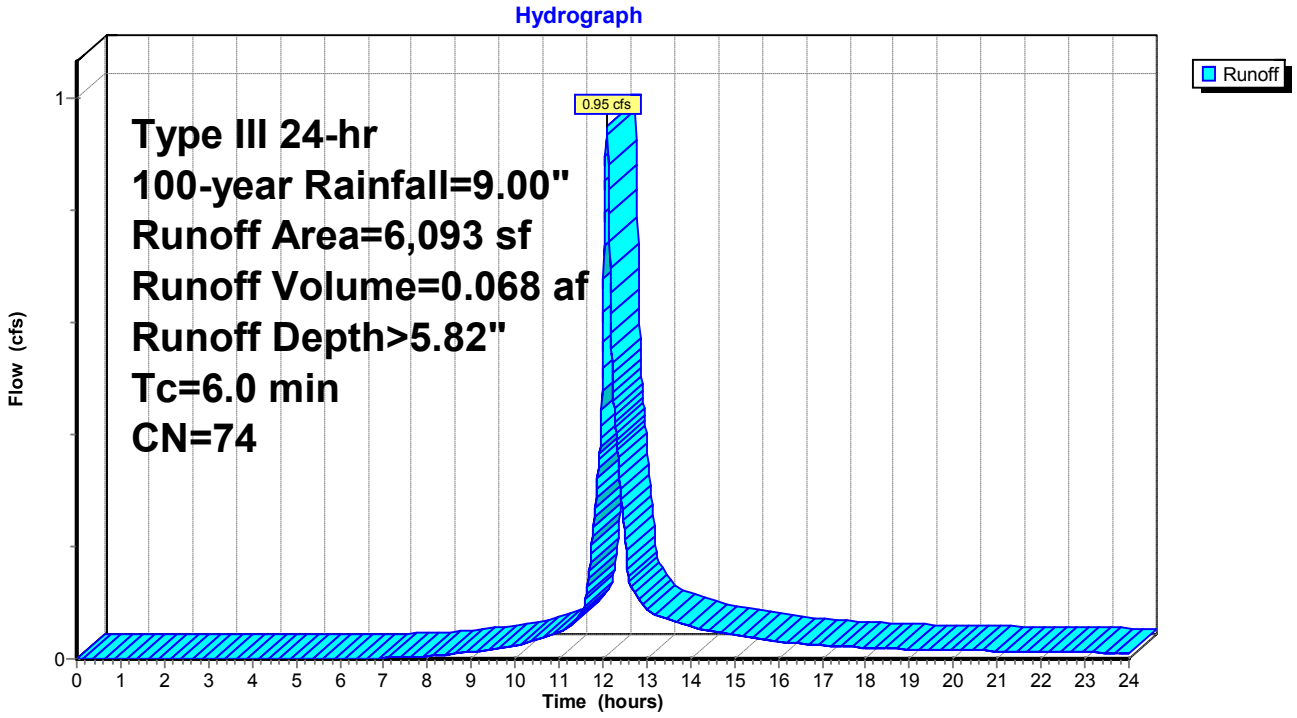
Runoff = 0.95 cfs @ 12.09 hrs, Volume= 0.068 af, Depth> 5.82"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
6,093	74	>75% Grass cover, Good, HSG C
6,093		100.00% Pervious Area

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

Subcatchment POST-WS7A: POST-WS7A



Summary for Subcatchment POST-WS7B-1: POST-WS7B-1

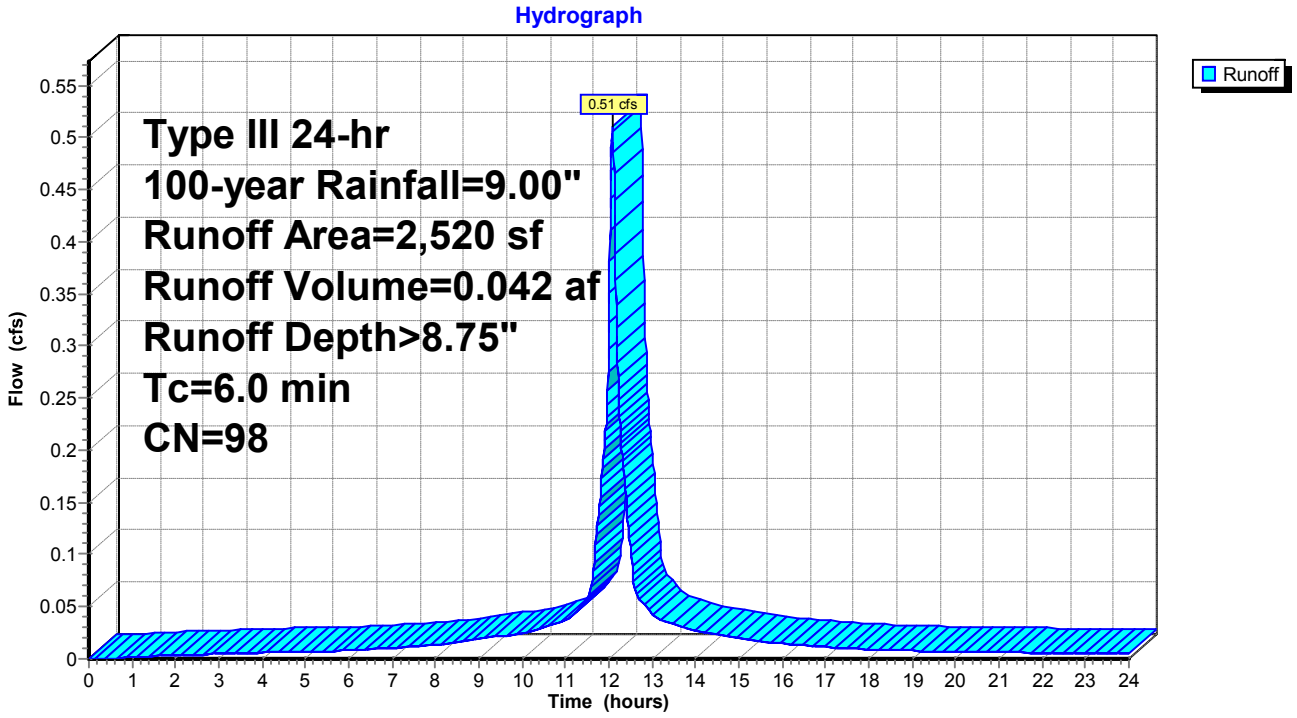
Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.042 af, Depth> 8.75"
Routed to Pond DW-#4 : DW-#4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
2,520	98	Paved parking, HSG C
2,520		100.00% Impervious Area

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

Subcatchment POST-WS7B-1: POST-WS7B-1



Summary for Subcatchment POST-WS7B-2: POST-WS7B-2

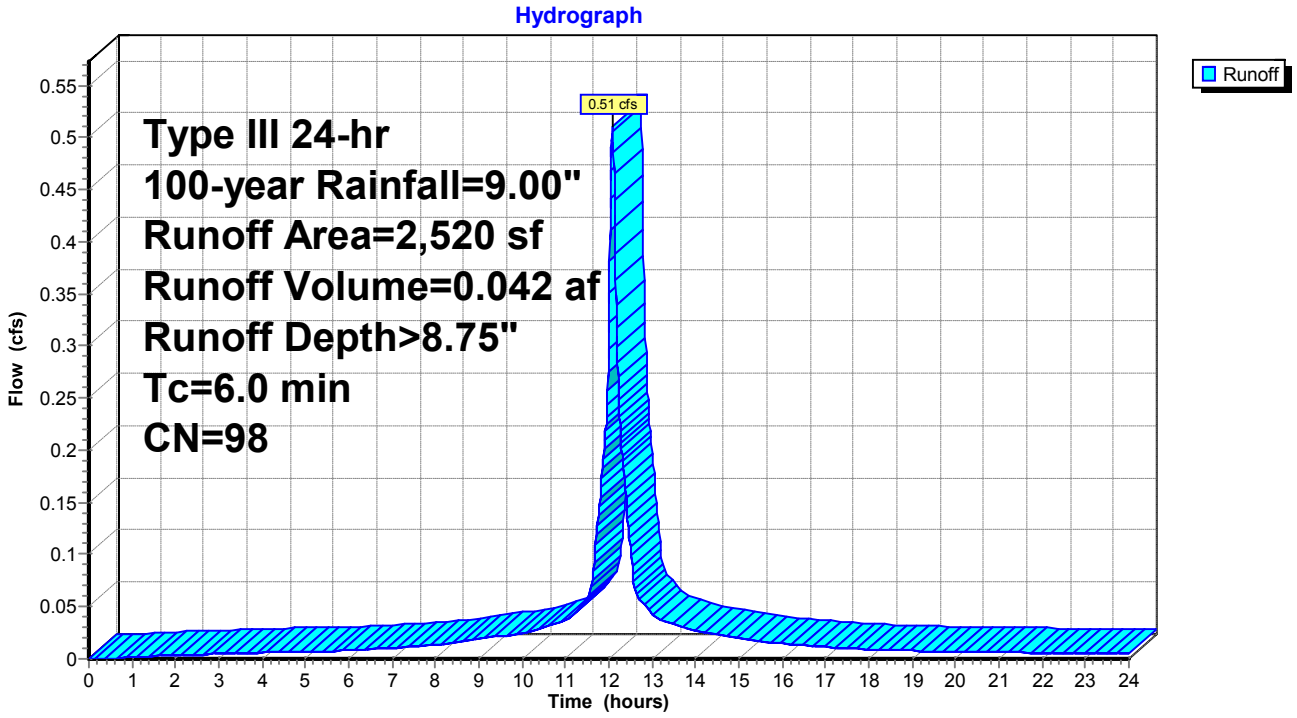
Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.042 af, Depth> 8.75"
Routed to Pond DW-#3 : DW-#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
2,520	98	Paved parking, HSG C
2,520		100.00% Impervious Area

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

Subcatchment POST-WS7B-2: POST-WS7B-2



Summary for Subcatchment POST-WS8A: POST-WS8A

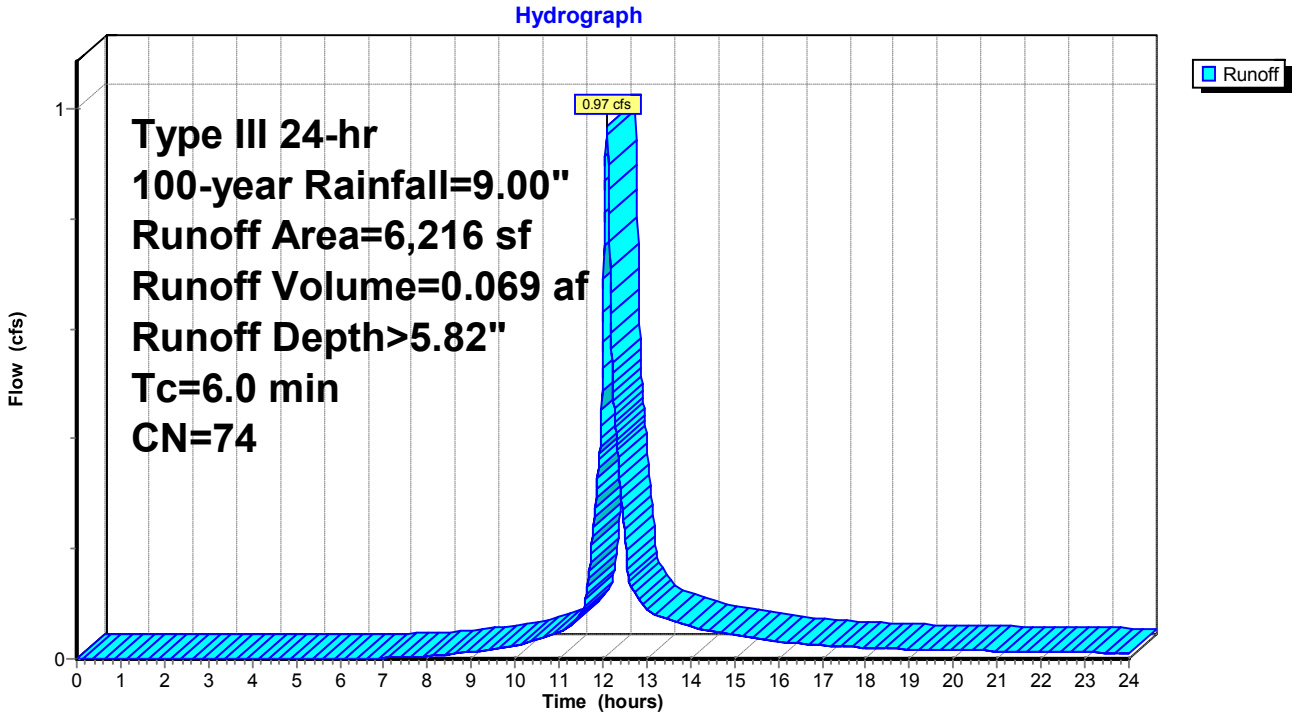
Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.069 af, Depth> 5.82"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
6,216	74	>75% Grass cover, Good, HSG C
6,216		100.00% Pervious Area

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

Subcatchment POST-WS8A: POST-WS8A



Summary for Subcatchment POST-WS8B-1: POST-WS8B-1

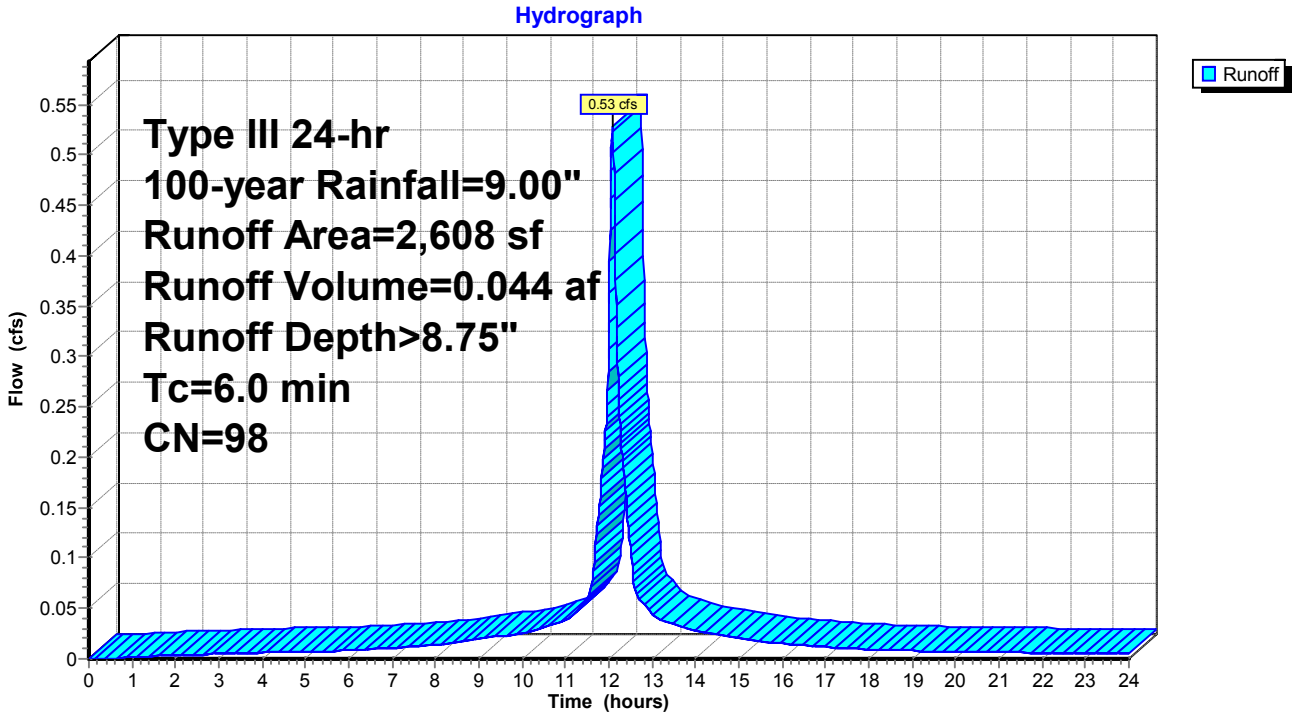
Runoff = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 8.75"
Routed to Pond DW-#6 : DW-#6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
2,608	98	Paved parking, HSG C
2,608		100.00% Impervious Area

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

Subcatchment POST-WS8B-1: POST-WS8B-1



Summary for Subcatchment POST-WS8B-2: POST-WS8B-2

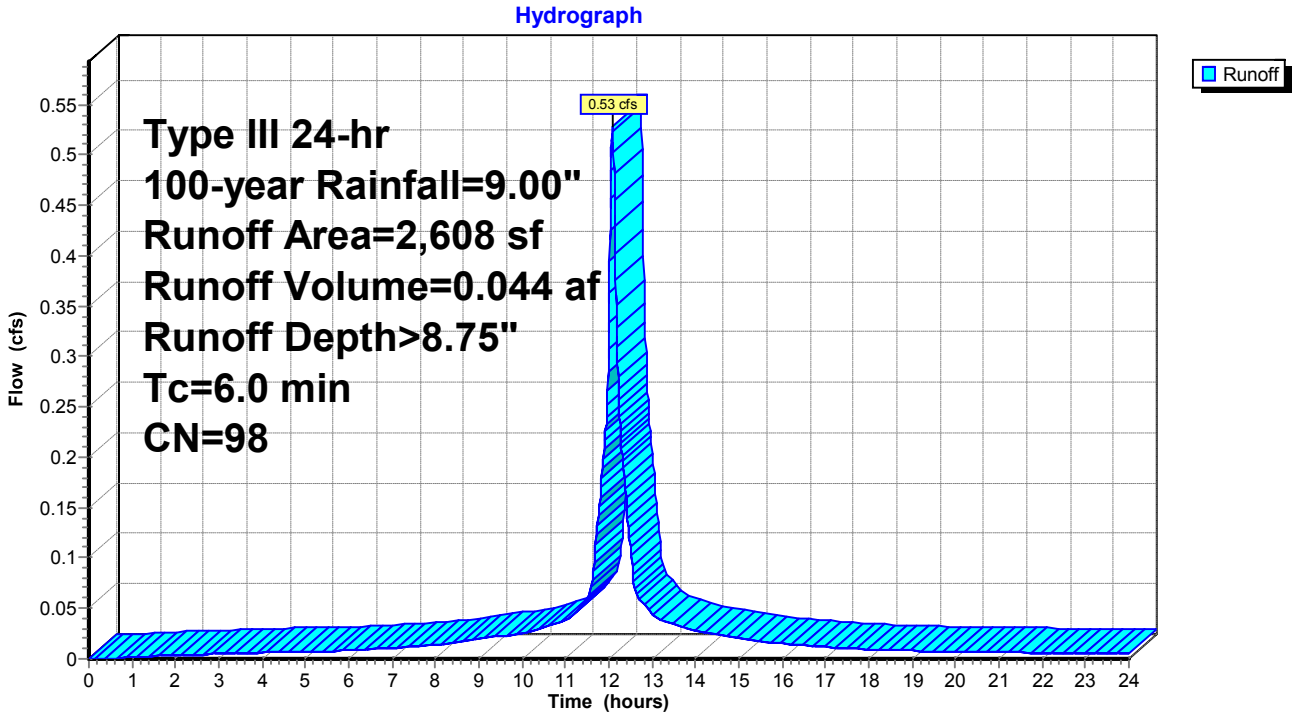
Runoff = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af, Depth> 8.75"
Routed to Pond DW-#5 : DW-#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
2,608	98	Paved parking, HSG C
2,608		100.00% Impervious Area

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

Subcatchment POST-WS8B-2: POST-WS8B-2



Summary for Subcatchment PRE-WS1: PRE-WS1

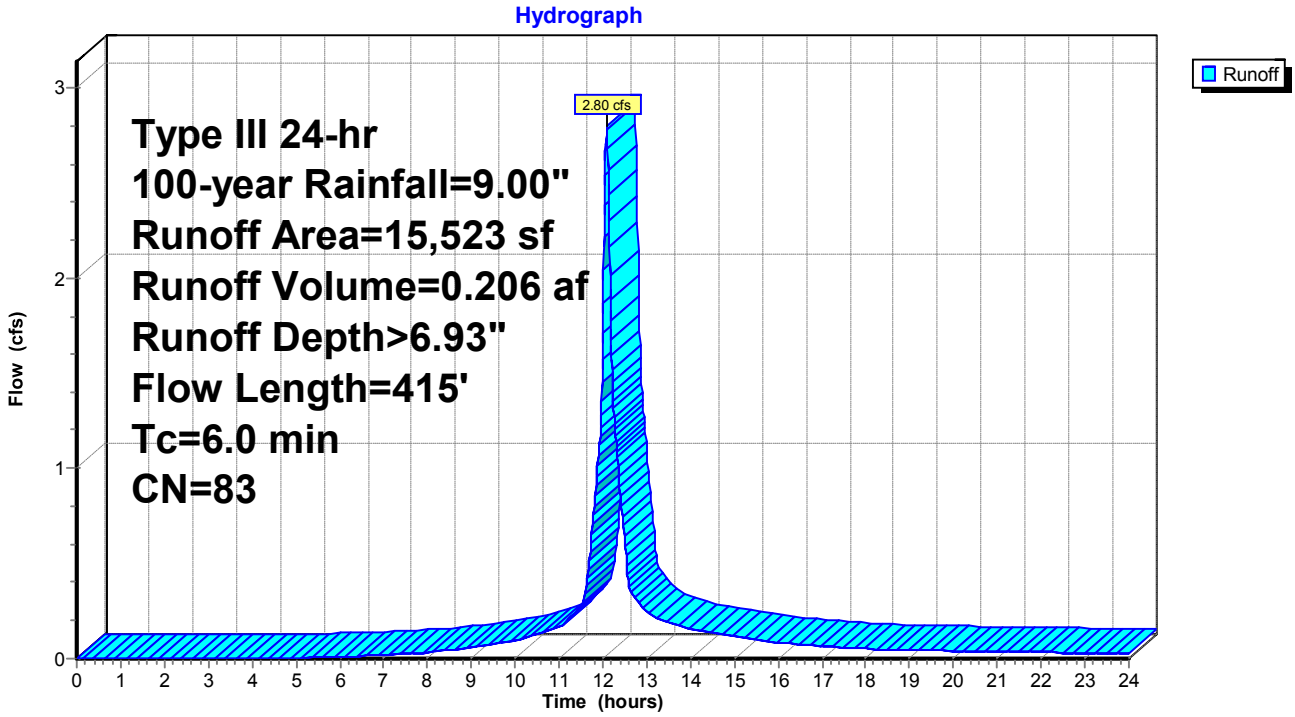
Runoff = 2.80 cfs @ 12.09 hrs, Volume= 0.206 af, Depth> 6.93"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
4,132	87	Dirt roads, HSG C
11,391	82	Woods/grass comb., Poor, HSG C
15,523	83	Weighted Average
15,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.32		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 3.00"
1.0	315	0.0690	5.33		**Shallow Concentrated Flow, Shallow Flow** Paved Kv= 20.3 fps
1.7	415	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE-WS1: PRE-WS1



Summary for Subcatchment PRE-WS2: PRE-WS2

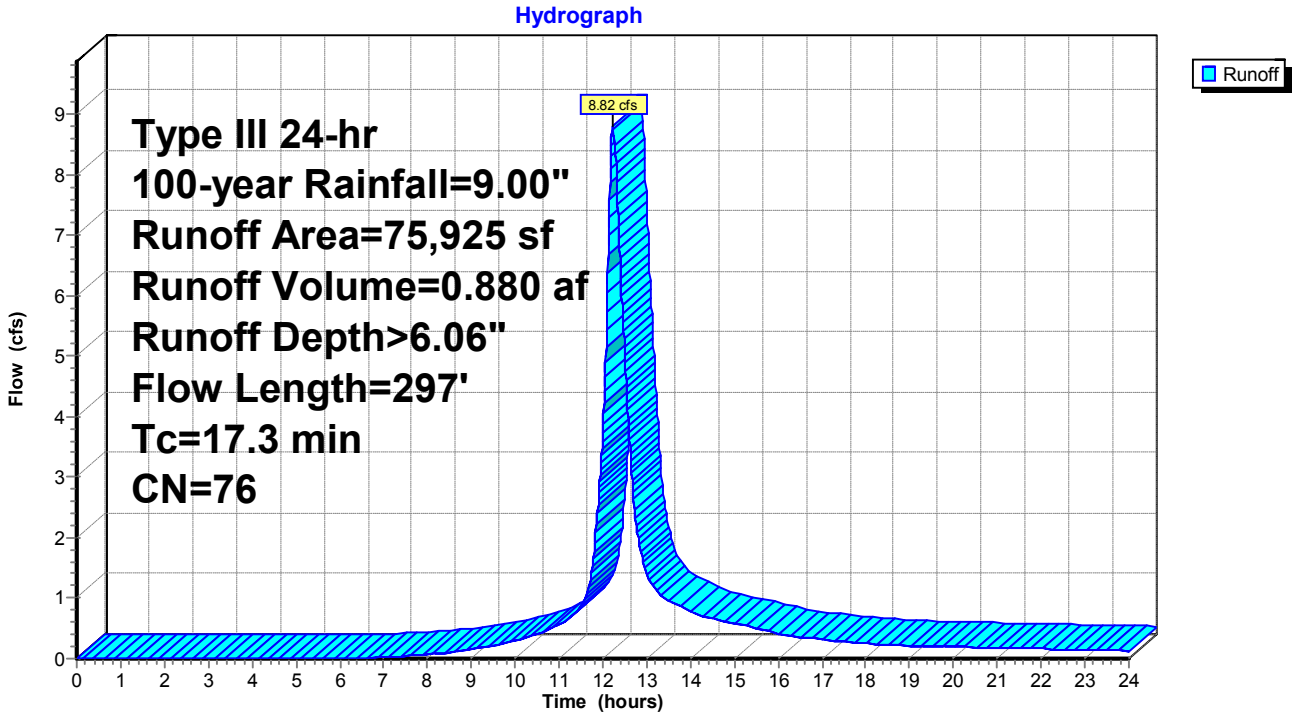
Runoff = 8.82 cfs @ 12.24 hrs, Volume= 0.880 af, Depth> 6.06"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
70,848	76	Woods/grass comb., Fair, HSG C
5,077	74	>75% Grass cover, Good, HSG C
75,925	76	Weighted Average
75,925		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	100	0.0600	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
3.0	197	0.0480	1.10		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.3	297	Total			

Subcatchment PRE-WS2: PRE-WS2



Summary for Subcatchment PRE-WS3: PRE-WS3

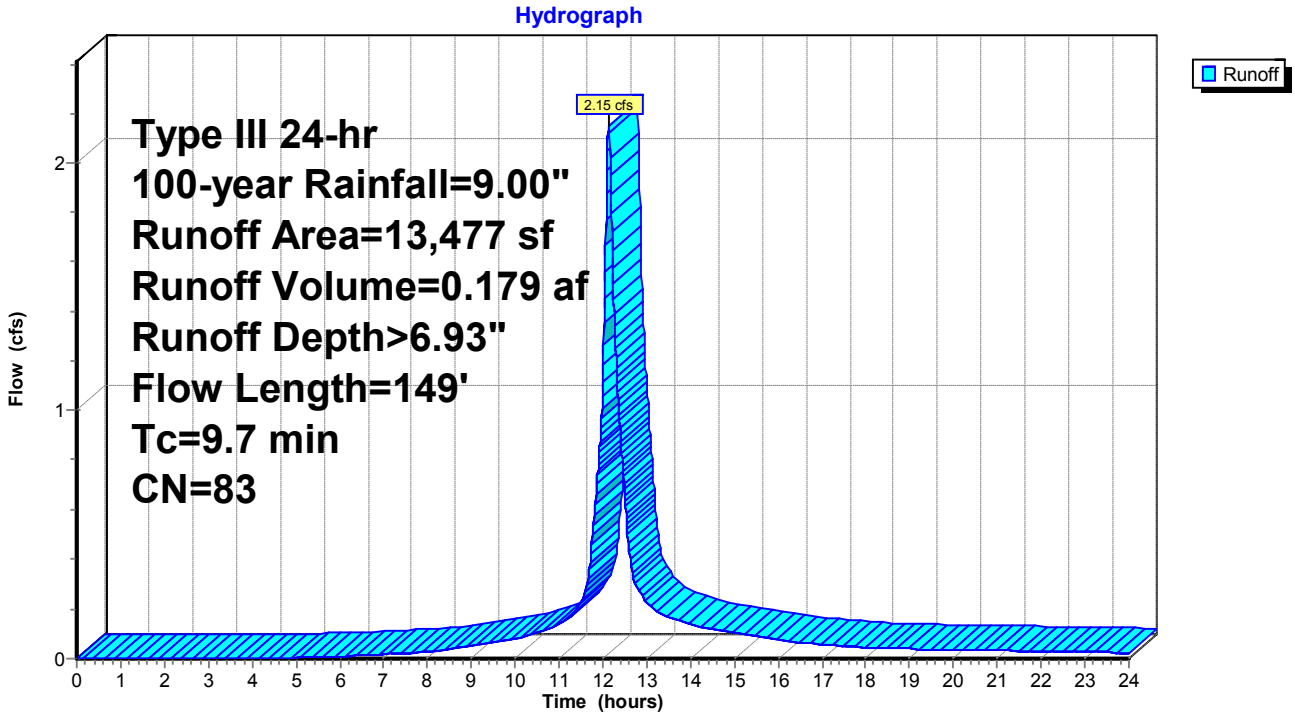
Runoff = 2.15 cfs @ 12.13 hrs, Volume= 0.179 af, Depth> 6.93"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
10,322	82	Woods/grass comb., Poor, HSG C
3,155	86	Pasture/grassland/range, Poor, HSG C
13,477	83	Weighted Average
13,477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	80	0.1250	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.8	69	0.0800	1.41		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
9.7	149	Total			

Subcatchment PRE-WS3: PRE-WS3



Summary for Subcatchment PRE-WS4: PRE-WS4

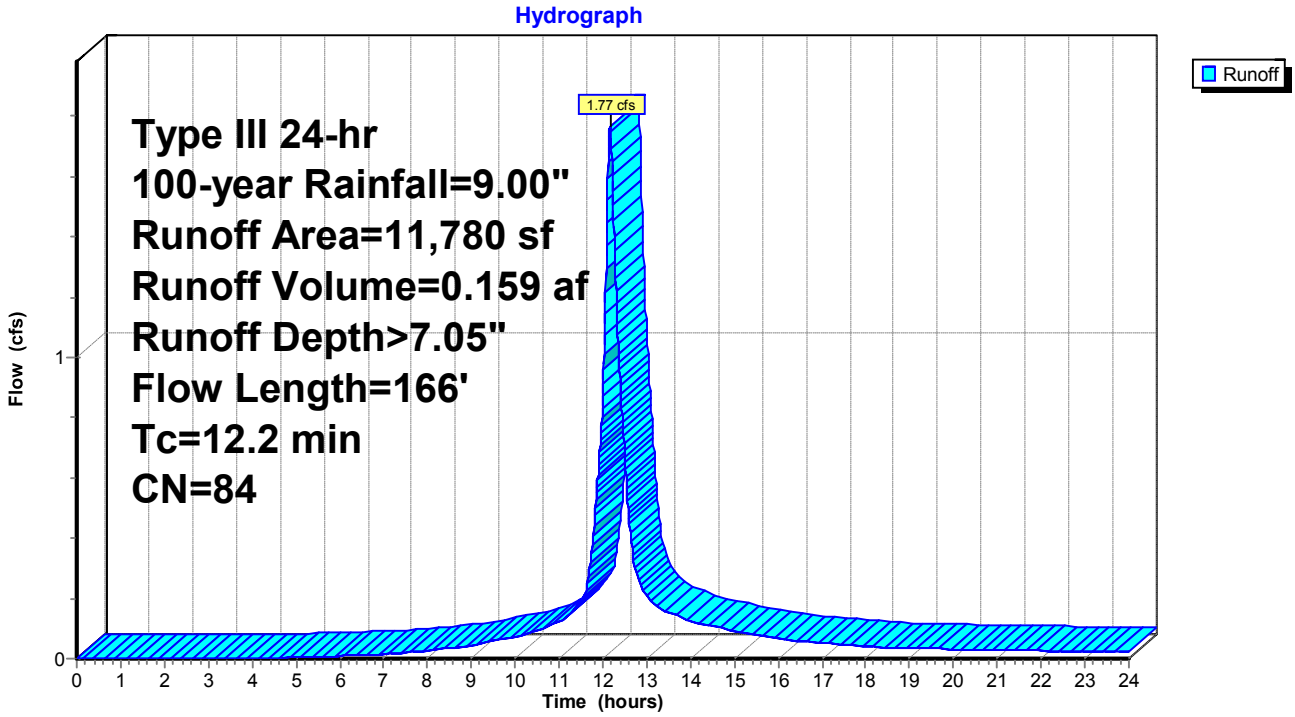
Runoff = 1.77 cfs @ 12.16 hrs, Volume= 0.159 af, Depth> 7.05"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
5,612	82	Woods/grass comb., Poor, HSG C
6,168	86	<50% Grass cover, Poor, HSG C
11,780	84	Weighted Average
11,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.1100	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
1.0	66	0.0450	1.06		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
12.2	166	Total			

Subcatchment PRE-WS4: PRE-WS4



Summary for Subcatchment PRE-WS5: PRE-WS5

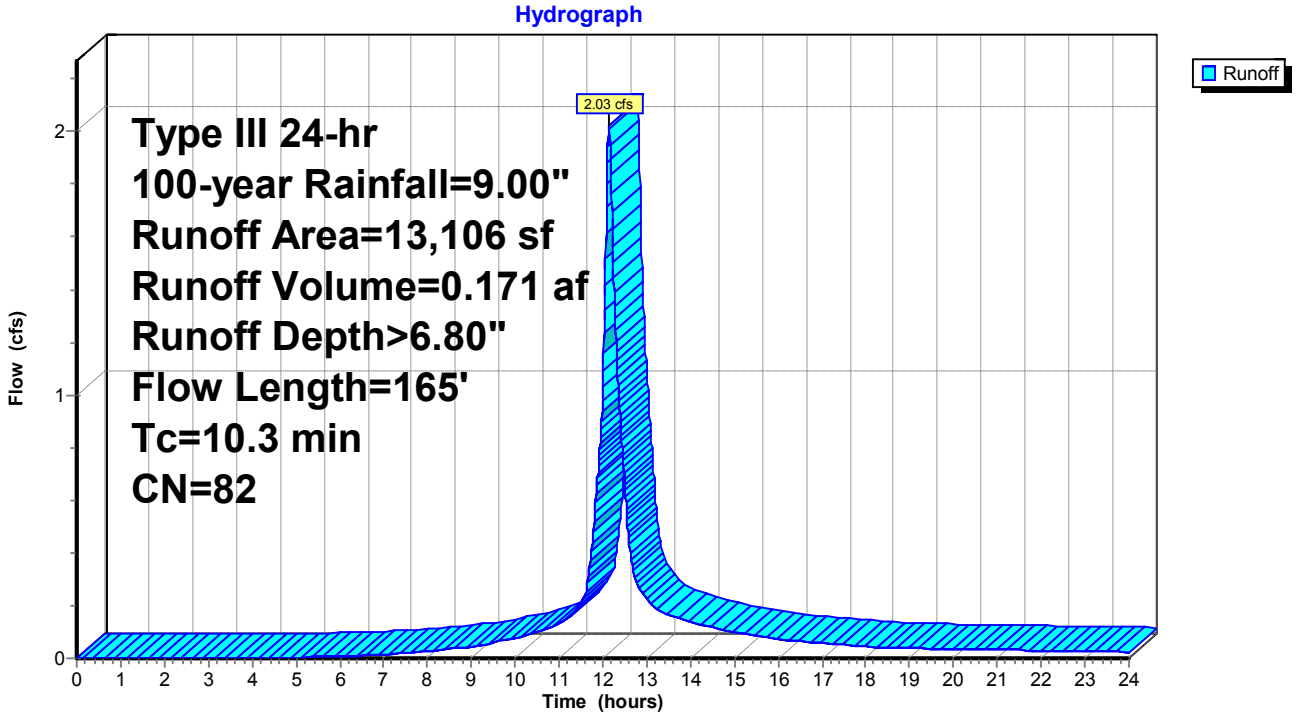
Runoff = 2.03 cfs @ 12.14 hrs, Volume= 0.171 af, Depth> 6.80"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
13,106	82	Woods/grass comb., Poor, HSG C
13,106		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	90	0.1250	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	25	0.0550	1.17		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
0.1	50	0.0500	10.14	40.57	**Channel Flow, Ditch Flow** Area= 4.0 sf Perim= 6.0' r= 0.67' n= 0.025 Earth, clean & winding
10.3	165	Total			

Subcatchment PRE-WS5: PRE-WS5



Summary for Subcatchment PRE-WS6: PRE-WS6

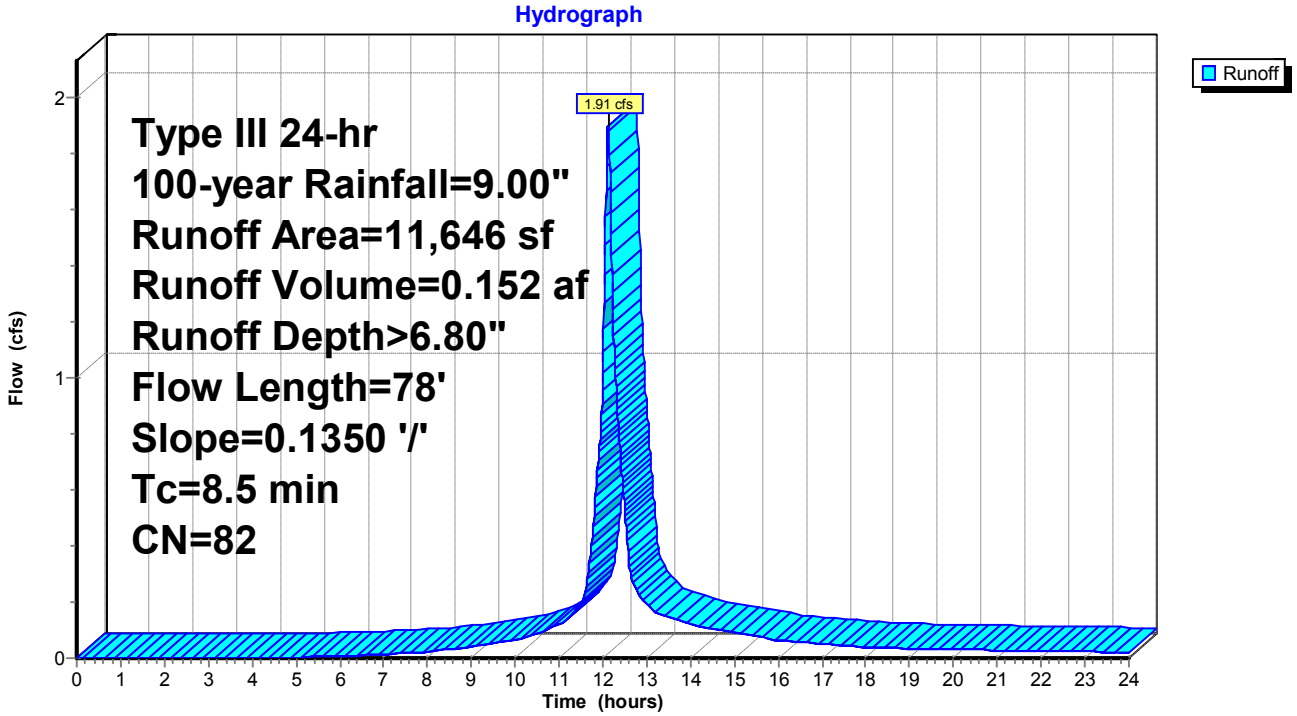
Runoff = 1.91 cfs @ 12.12 hrs, Volume= 0.152 af, Depth> 6.80"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
11,646	82	Woods/grass comb., Poor, HSG C
11,646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	78	0.1350	0.15		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"

Subcatchment PRE-WS6: PRE-WS6



Summary for Subcatchment PRE-WS7: PRE-WS7

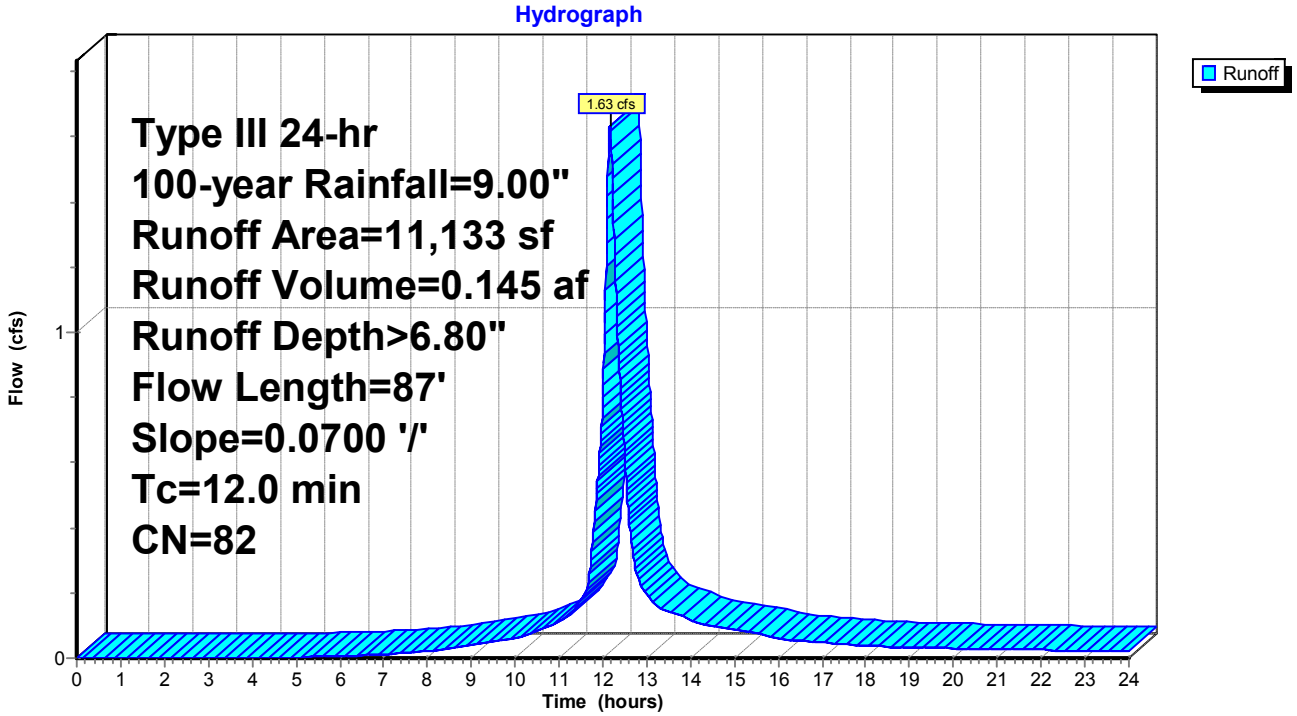
Runoff = 1.63 cfs @ 12.16 hrs, Volume= 0.145 af, Depth> 6.80"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
11,133	82	Woods/grass comb., Poor, HSG C
11,133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	87	0.0700	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"

Subcatchment PRE-WS7: PRE-WS7



Summary for Subcatchment PRE-WS8: PRE-WS8

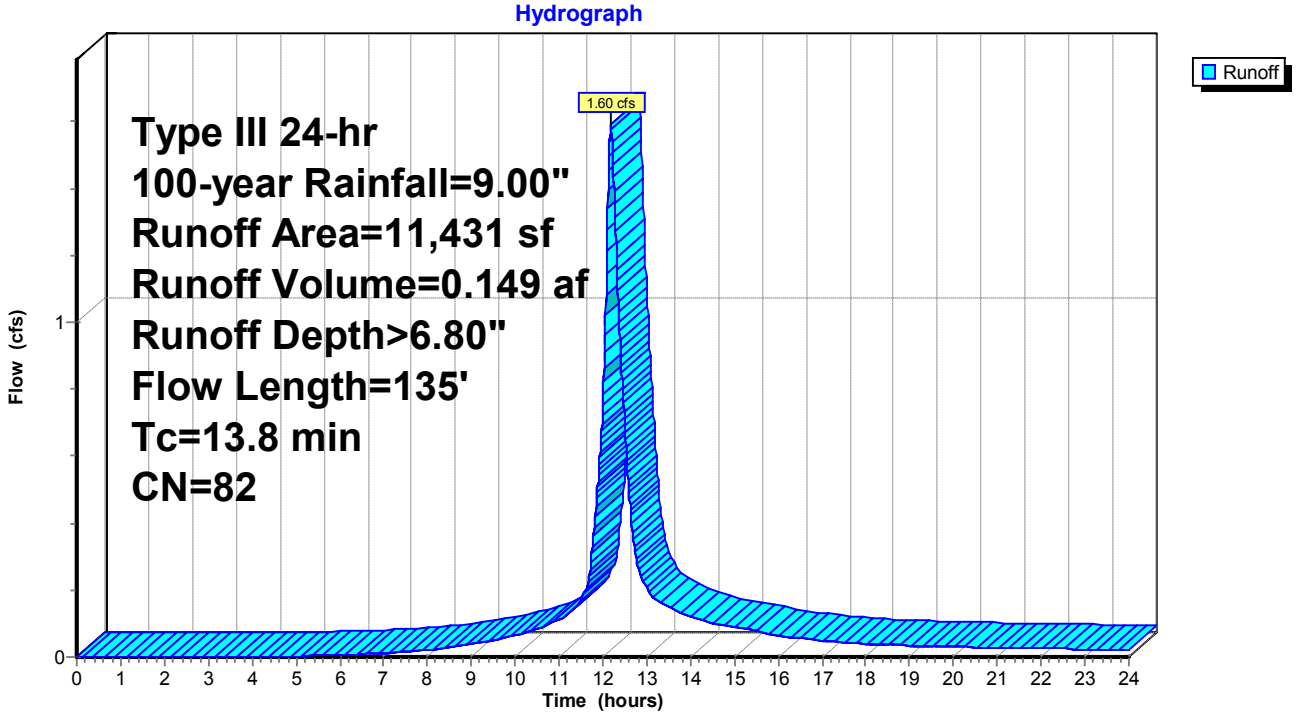
Runoff = 1.60 cfs @ 12.19 hrs, Volume= 0.149 af, Depth> 6.80"
Routed to Reach PRE : PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=9.00"

Area (sf)	CN	Description
11,431	82	Woods/grass comb., Poor, HSG C
11,431		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0700	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	35	0.0900	1.50		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
13.8	135	Total			

Subcatchment PRE-WS8: PRE-WS8



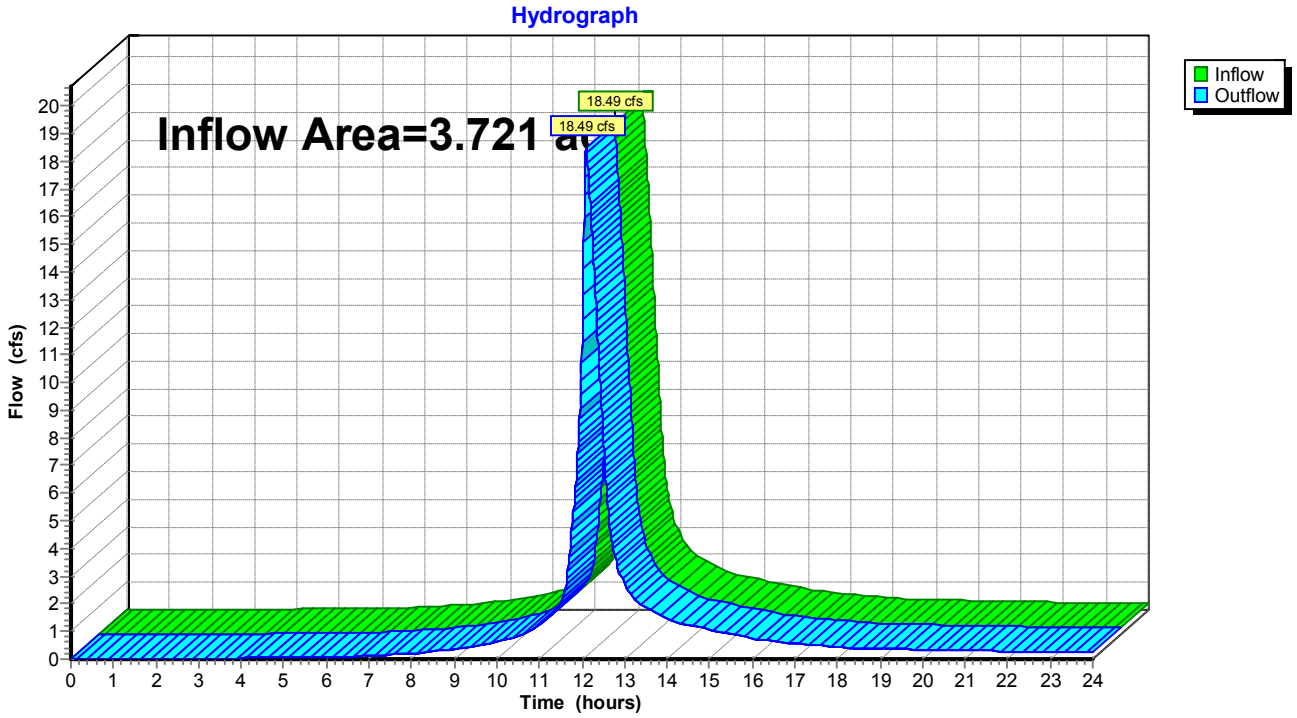
Summary for Reach POST: POST

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.721 ac, 30.49% Impervious, Inflow Depth > 5.74" for 100-year event
Inflow = 18.49 cfs @ 12.11 hrs, Volume= 1.781 af
Outflow = 18.49 cfs @ 12.11 hrs, Volume= 1.781 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach POST: POST



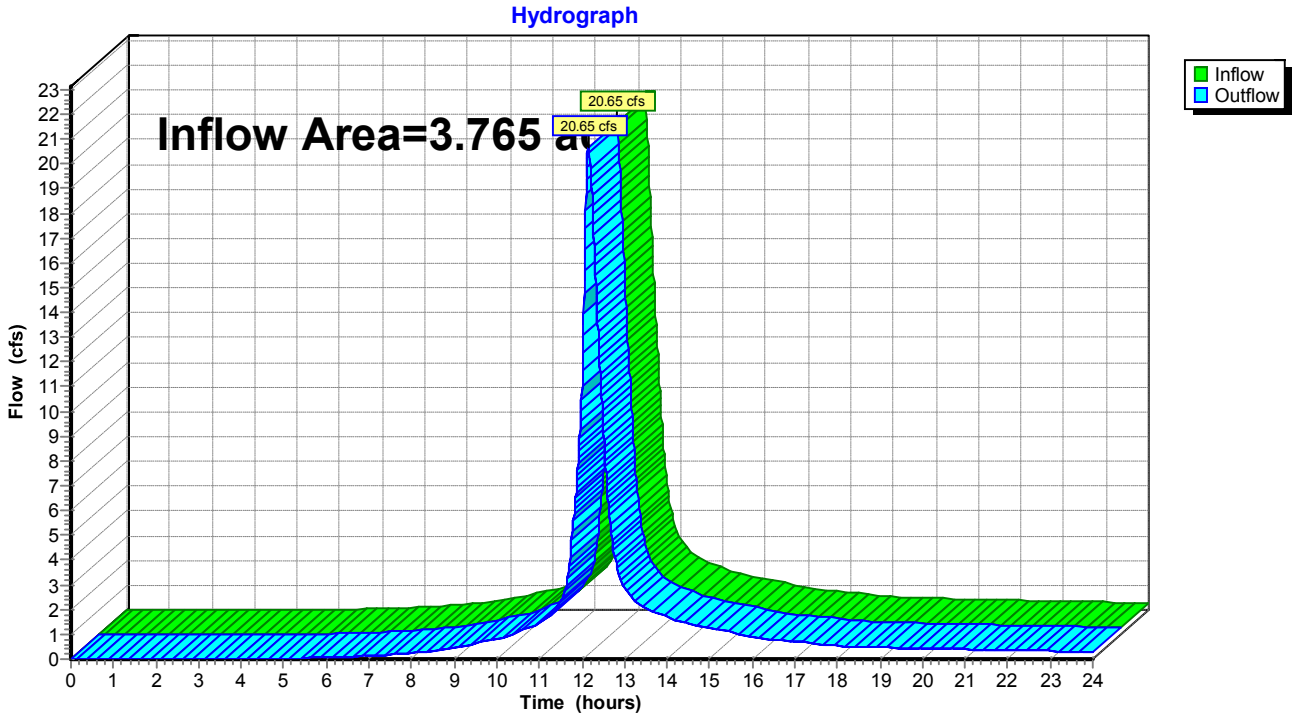
Summary for Reach PRE: PRE

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.765 ac, 0.00% Impervious, Inflow Depth > 6.50" for 100-year event
Inflow = 20.65 cfs @ 12.16 hrs, Volume= 2.039 af
Outflow = 20.65 cfs @ 12.16 hrs, Volume= 2.039 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach PRE: PRE



Summary for Pond ADS-#1: ADS-#1

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 1.00 cfs @ 12.08 hrs, Volume= 0.083 af
Outflow = 0.69 cfs @ 12.16 hrs, Volume= 0.081 af, Atten= 31%, Lag= 4.8 min
Discarded = 0.02 cfs @ 12.16 hrs, Volume= 0.034 af
Primary = 0.67 cfs @ 12.16 hrs, Volume= 0.047 af
Routed to Pond SDMH #5 : SDMH #5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 503.44' @ 12.16 hrs Surf.Area= 424 sf Storage= 654 cf
Flood Elev= 508.66' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 59.2 min calculated for 0.081 af (98% of inflow)
Center-of-Mass det. time= 45.8 min (785.1 - 739.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	501.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	501.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	501.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 468.00'
#2	Primary	501.50'	**10.0" Round Culvert** L= 13.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 501.50' / 501.37' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	503.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	502.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	502.50'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.16 hrs HW=503.44' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.67 cfs @ 12.16 hrs HW=503.44' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 3.25 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.25 cfs @ 5.62 fps)
└**5=Orifice/Grate** (Orifice Controls 0.43 cfs @ 4.36 fps)

Pond ADS-#1: ADS-#1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

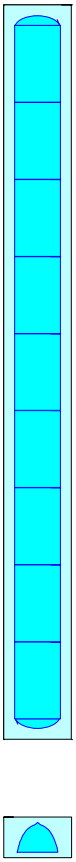
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

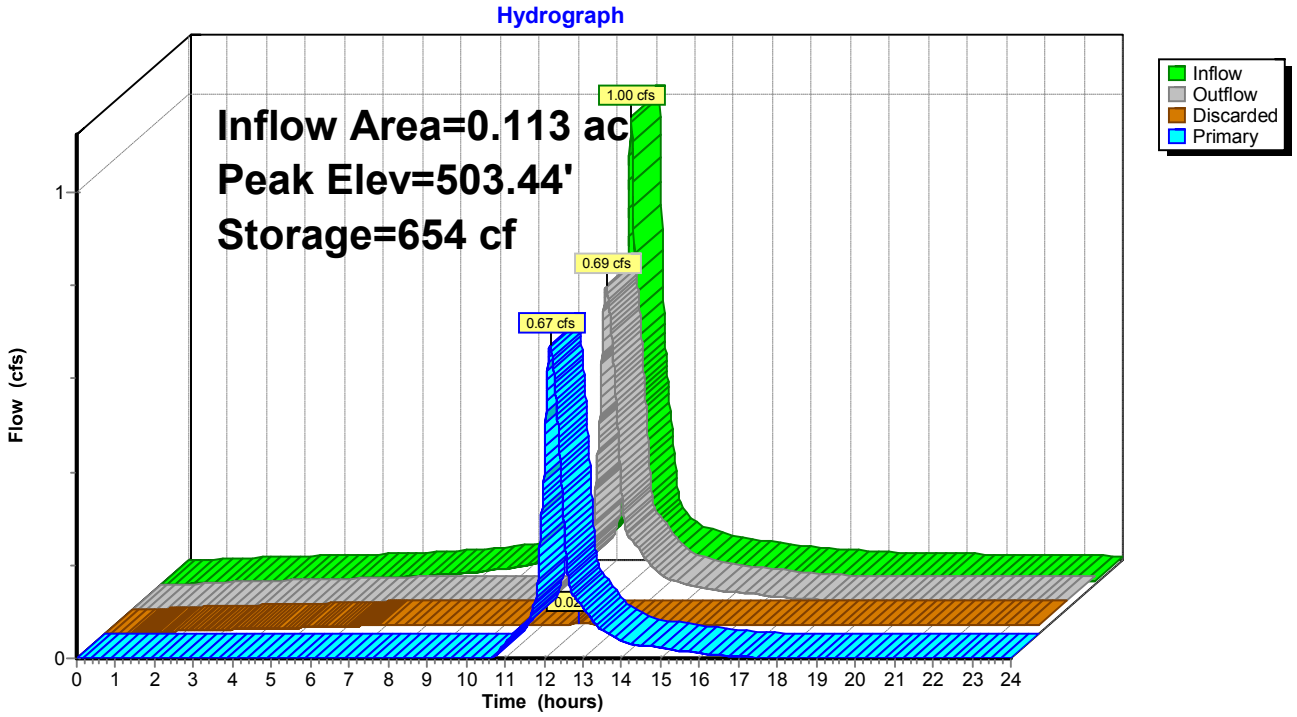
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#1: ADS-#1



Summary for Pond ADS-#2: ADS-#2

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 1.00 cfs @ 12.08 hrs, Volume= 0.082 af
Outflow = 0.69 cfs @ 12.16 hrs, Volume= 0.080 af, Atten= 31%, Lag= 4.8 min
Discarded = 0.02 cfs @ 12.16 hrs, Volume= 0.034 af
Primary = 0.67 cfs @ 12.16 hrs, Volume= 0.047 af
Routed to Pond SDMH #6 : SDMH #6

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 503.43' @ 12.16 hrs Surf.Area= 424 sf Storage= 651 cf
Flood Elev= 507.68' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 59.2 min calculated for 0.080 af (98% of inflow)
Center-of-Mass det. time= 46.1 min (785.4 - 739.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	501.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	501.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	501.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 468.00'
#2	Primary	501.50'	**10.0" Round Culvert** L= 13.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 501.50' / 501.36' S= 0.0101 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	503.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	502.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	502.50'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.16 hrs HW=503.43' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.67 cfs @ 12.16 hrs HW=503.43' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 3.23 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.24 cfs @ 5.59 fps)
└**5=Orifice/Grate** (Orifice Controls 0.42 cfs @ 4.32 fps)

Pond ADS-#2: ADS-#2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

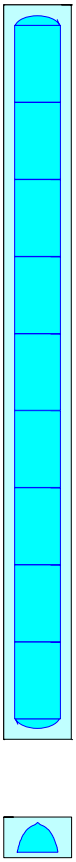
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

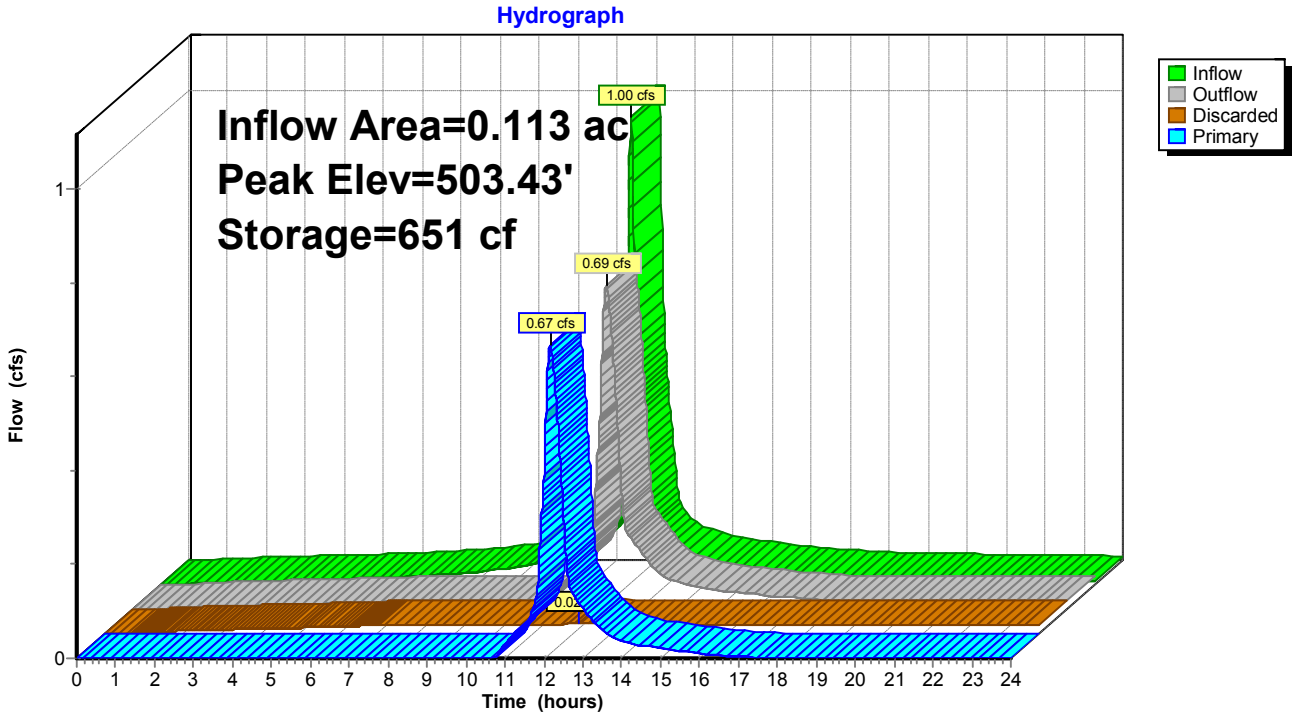
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#2: ADS-#2



Summary for Pond ADS-#3: ADS-#3

Inflow Area = 0.112 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.99 cfs @ 12.08 hrs, Volume= 0.082 af
Outflow = 0.69 cfs @ 12.16 hrs, Volume= 0.080 af, Atten= 31%, Lag= 4.8 min
Discarded = 0.02 cfs @ 12.16 hrs, Volume= 0.034 af
Primary = 0.67 cfs @ 12.16 hrs, Volume= 0.047 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 502.35' @ 12.16 hrs Surf.Area= 424 sf Storage= 629 cf
Flood Elev= 505.69' Surf.Area= 424 sf Storage= 913 cf

Plug-Flow detention time= 58.8 min calculated for 0.080 af (98% of inflow)
Center-of-Mass det. time= 45.4 min (784.7 - 739.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	500.00'	451 cf	**6.25'W x 67.82'L x 3.75'H Field A** 1,589 cf Overall - 462 cf Embedded = 1,127 cf x 40.0% Voids
#2A	500.50'	462 cf	**ADS_StormTech SC-800 +Cap** x 9 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf
		913 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	500.00'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 467.00'
#2	Primary	500.50'	**10.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.50' / 499.07' S= 0.0681 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.55 sf
#3	Device 2	502.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	501.00'	**2.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Primary	501.40'	**3.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.16 hrs HW=502.35' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.67 cfs @ 12.16 hrs HW=502.35' (Free Discharge)
├**2=Culvert** (Passes 0.00 cfs of 3.14 cfs potential flow)
│└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Orifice Controls 0.24 cfs @ 5.42 fps)
└**5=Orifice/Grate** (Orifice Controls 0.43 cfs @ 4.37 fps)

Pond ADS-#3: ADS-#3 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-800 +Cap (ADS StormTech® SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 1 rows = 6.8 cf

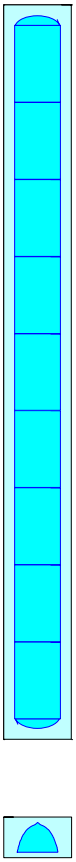
9 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 65.82' Row Length +12.0" End Stone x 2 = 67.82' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

9 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 1 Rows = 462.2 cf Chamber Storage

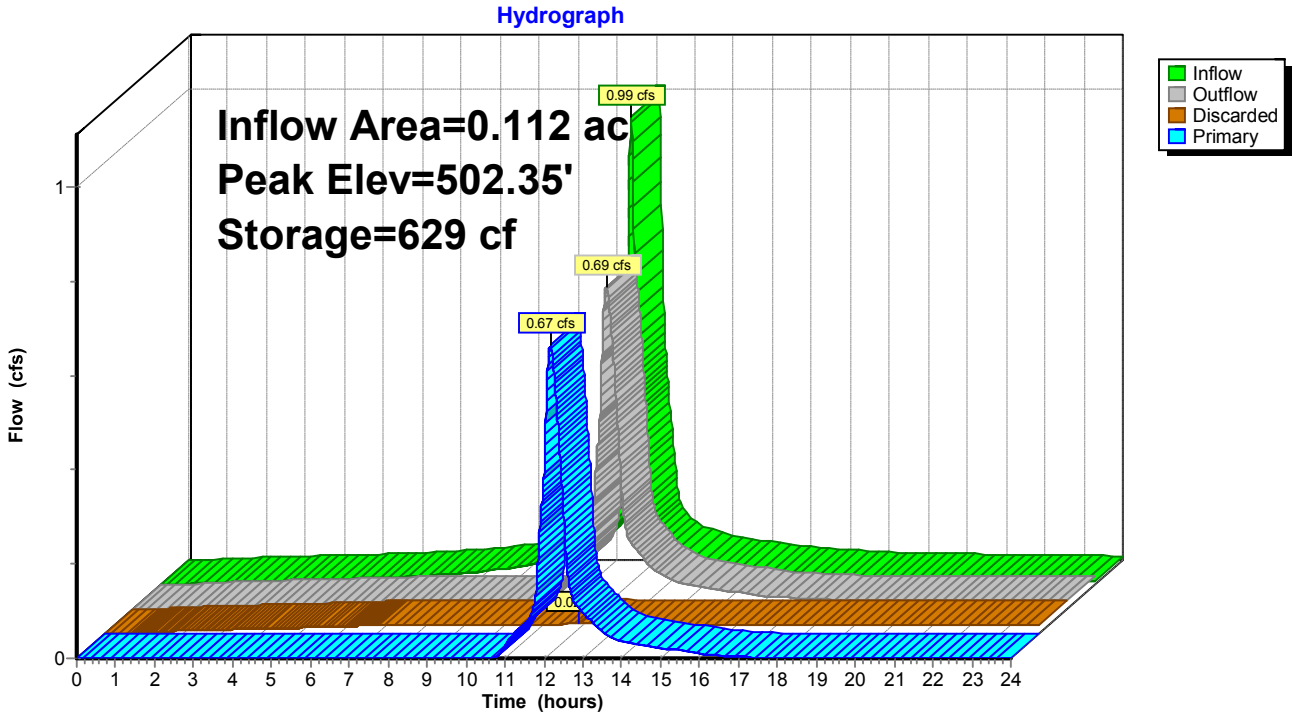
1,589.5 cf Field - 462.2 cf Chambers = 1,127.3 cf Stone x 40.0% Voids = 450.9 cf Stone Storage

Chamber Storage + Stone Storage = 913.1 cf = 0.021 af
Overall Storage Efficiency = 57.4%
Overall System Size = 67.82' x 6.25' x 3.75'

9 Chambers
58.9 cy Field
41.8 cy Stone



Pond ADS-#3: ADS-#3



Summary for Pond CB-#1: CB-#1

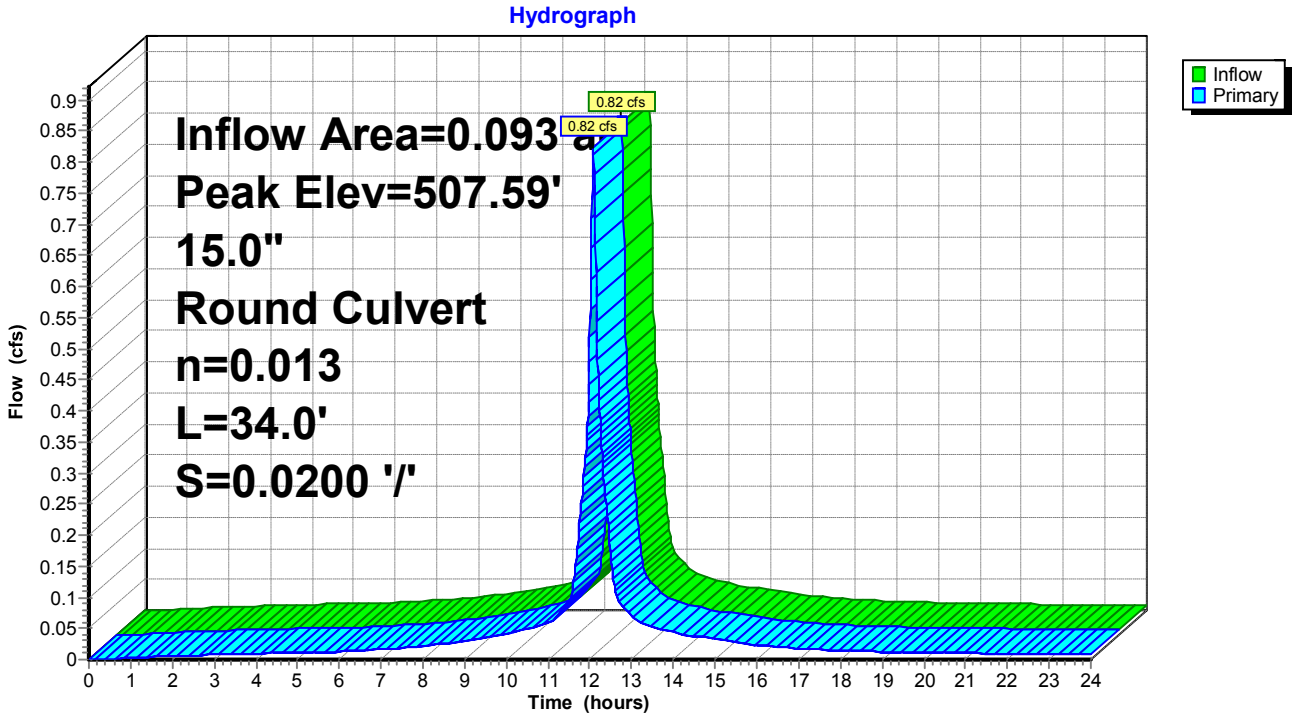
Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.82 cfs @ 12.08 hrs, Volume= 0.068 af
Outflow = 0.82 cfs @ 12.08 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.08 hrs, Volume= 0.068 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 507.59' @ 12.08 hrs
Flood Elev= 510.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	507.16'	**15.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.16' / 506.48' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.82 cfs @ 12.08 hrs HW=507.59' (Free Discharge)
1=Culvert (Inlet Controls 0.82 cfs @ 2.22 fps)

Pond CB-#1: CB-#1



Summary for Pond CB-#2: CB-#2

[79] Warning: Submerged Pond CB-#1 Primary device # 1 OUTLET by 0.51'
[79] Warning: Submerged Pond DW-#1 Primary device # 2 OUTLET by 0.51'
[79] Warning: Submerged Pond DW-#2 Primary device # 2 OUTLET by 0.51'
[79] Warning: Submerged Pond DW-#3 Primary device # 2 INLET by 0.25'
[81] Warning: Exceeded Pond DW-#4 by 3.73' @ 10.46 hrs

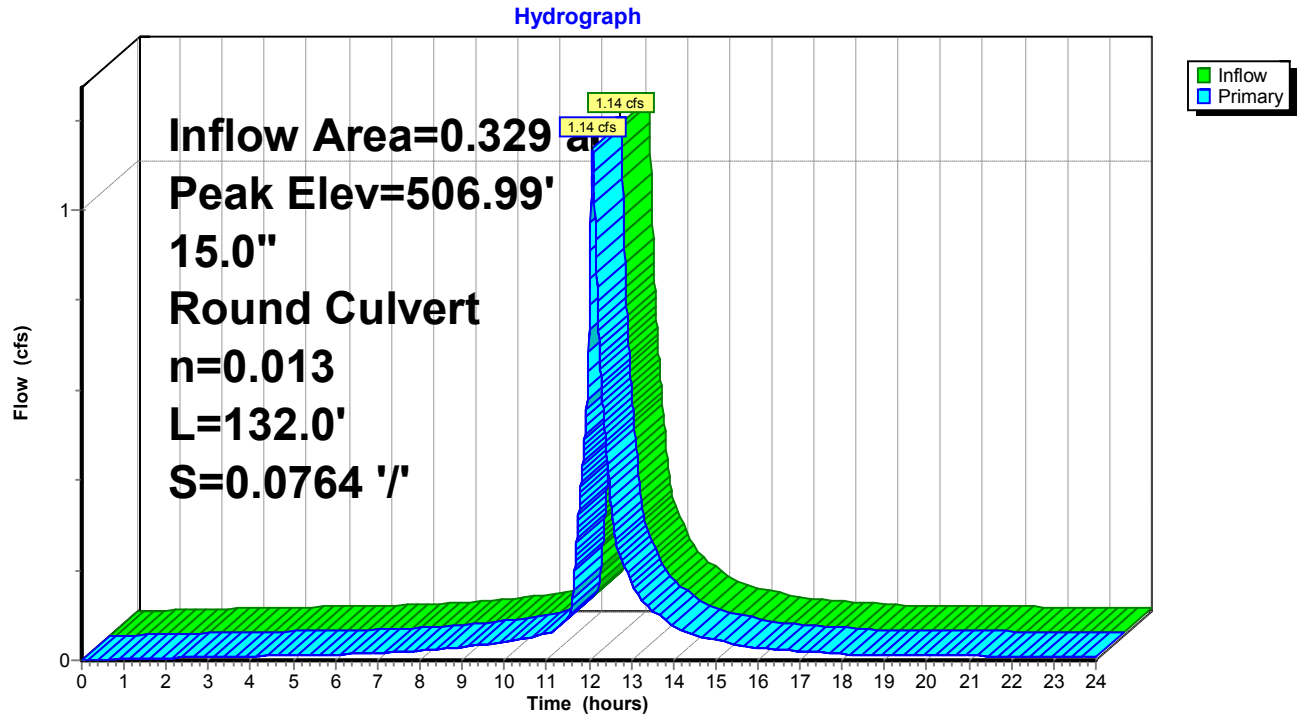
Inflow Area = 0.329 ac,100.00% Impervious, Inflow Depth > 3.55" for 100-year event
Inflow = 1.14 cfs @ 12.09 hrs, Volume= 0.097 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min
Primary = 1.14 cfs @ 12.09 hrs, Volume= 0.097 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 506.99' @ 12.09 hrs
Flood Elev= 510.19'

Device	Routing	Invert	Outlet Devices
#1	Primary	506.48'	**15.0" Round Culvert** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 506.48' / 496.40' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.13 cfs @ 12.09 hrs HW=506.99' (Free Discharge)
1=Culvert (Inlet Controls 1.13 cfs @ 2.43 fps)

Pond CB-#2: CB-#2



Summary for Pond CB-#3: CB-#3

[79] Warning: Submerged Pond CB-#2 Primary device # 1 OUTLET by 0.75'
[79] Warning: Submerged Pond DW-#6 Primary device # 2 OUTLET by 0.27'

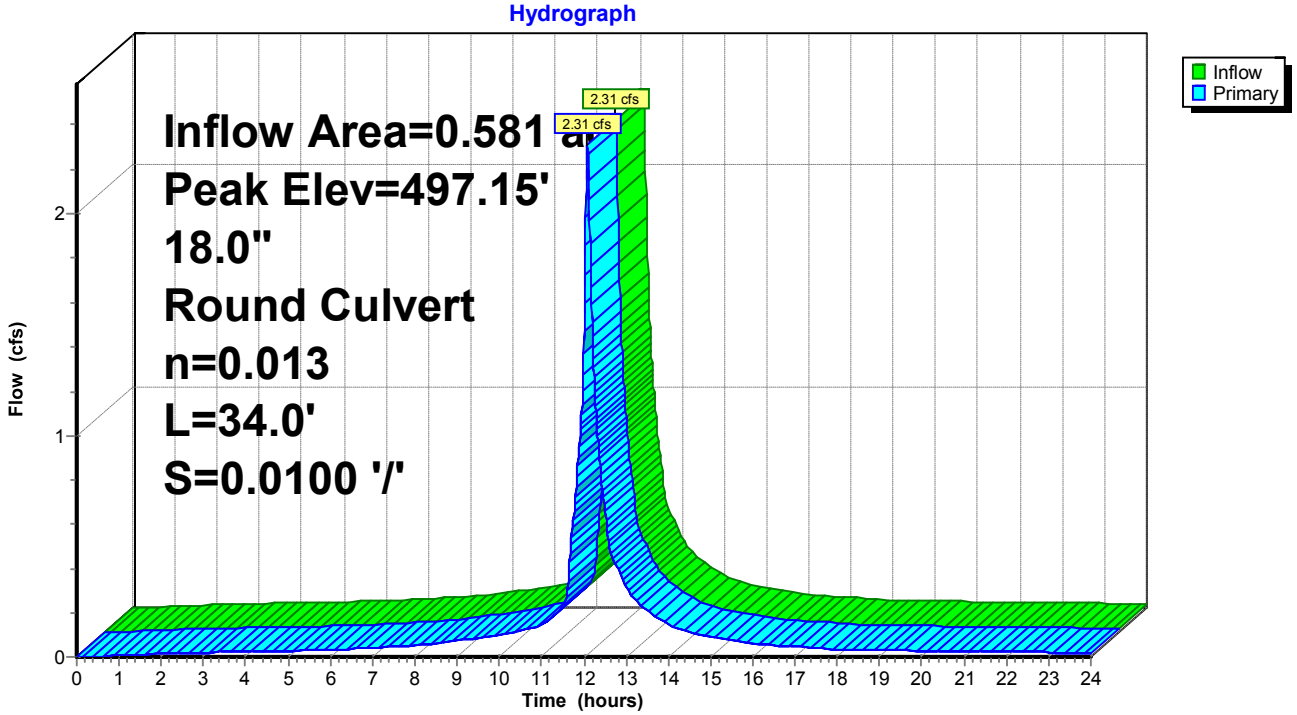
Inflow Area = 0.581 ac,100.00% Impervious, Inflow Depth > 4.11" for 100-year event
Inflow = 2.31 cfs @ 12.09 hrs, Volume= 0.199 af
Outflow = 2.31 cfs @ 12.09 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min
Primary = 2.31 cfs @ 12.09 hrs, Volume= 0.199 af
Routed to Pond CB-#4 : CB-#4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 497.15' @ 12.09 hrs
Flood Elev= 499.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.40'	**18.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.40' / 496.06' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.31 cfs @ 12.09 hrs HW=497.15' (Free Discharge)
1=Culvert (Barrel Controls 2.31 cfs @ 3.83 fps)

Pond CB-#3: CB-#3



Summary for Pond CB-#4: CB-#4

[79] Warning: Submerged Pond CB-#3 Primary device # 1 INLET by 0.29'

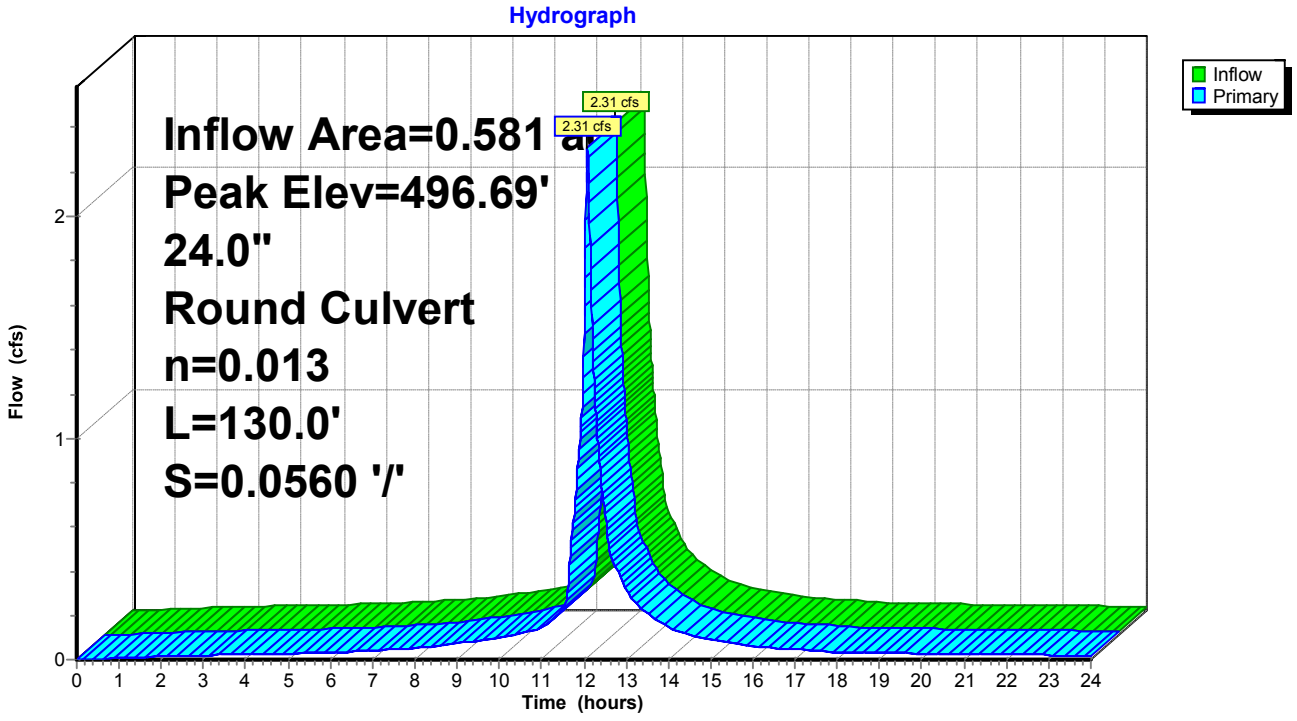
Inflow Area = 0.581 ac,100.00% Impervious, Inflow Depth > 4.11" for 100-year event
Inflow = 2.31 cfs @ 12.09 hrs, Volume= 0.199 af
Outflow = 2.31 cfs @ 12.09 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min
Primary = 2.31 cfs @ 12.09 hrs, Volume= 0.199 af
Routed to Pond CB-#5 : CB-#5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.69' @ 12.09 hrs
Flood Elev= 499.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.06'	**24.0" Round Culvert** L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.06' / 488.78' S= 0.0560 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.30 cfs @ 12.09 hrs HW=496.69' (Free Discharge)
1=Culvert (Inlet Controls 2.30 cfs @ 2.71 fps)

Pond CB-#4: CB-#4



Summary for Pond CB-#5: CB-#5

[79] Warning: Submerged Pond CB-#4 Primary device # 1 OUTLET by 1.15'

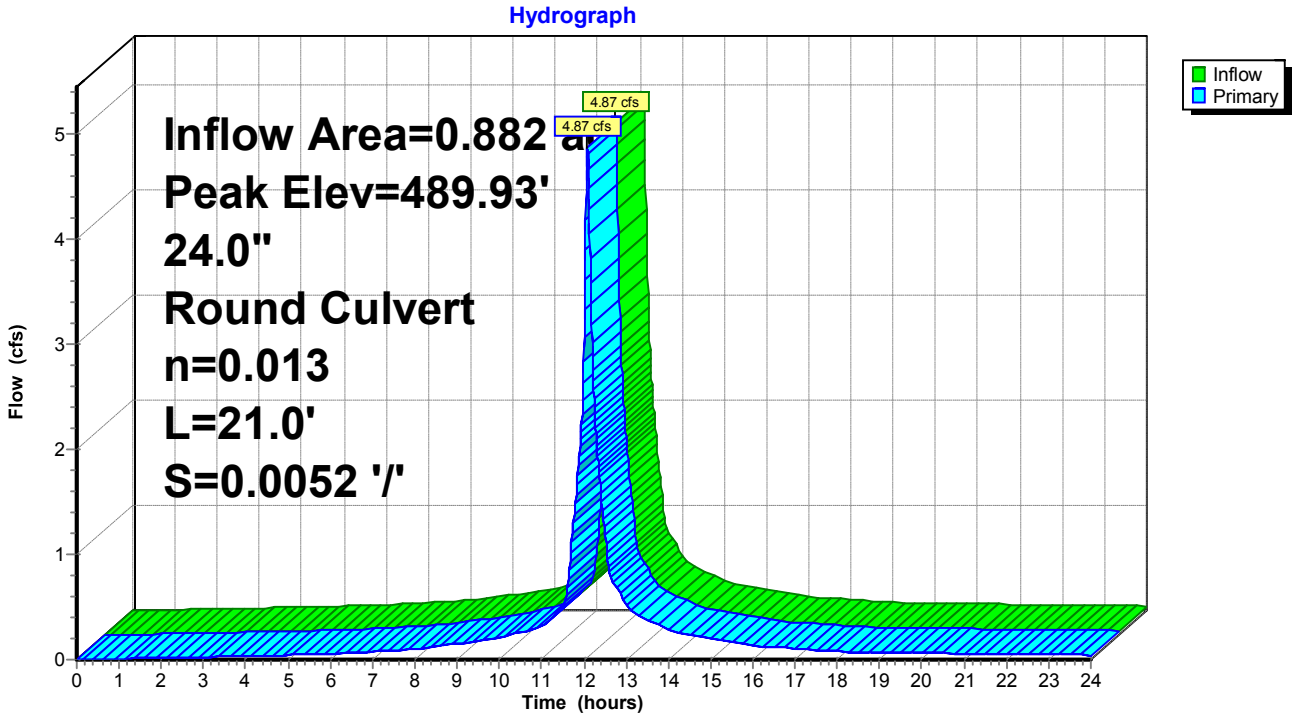
Inflow Area = 0.882 ac, 90.31% Impervious, Inflow Depth > 5.40" for 100-year event
Inflow = 4.87 cfs @ 12.09 hrs, Volume= 0.397 af
Outflow = 4.87 cfs @ 12.09 hrs, Volume= 0.397 af, Atten= 0%, Lag= 0.0 min
Primary = 4.87 cfs @ 12.09 hrs, Volume= 0.397 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 489.93' @ 12.09 hrs
Flood Elev= 492.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	488.78'	**24.0" Round Culvert** L= 21.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 488.78' / 488.67' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.86 cfs @ 12.09 hrs HW=489.93' (Free Discharge)
1=Culvert (Barrel Controls 4.86 cfs @ 3.77 fps)

Pond CB-#5: CB-#5



Summary for Pond DW-#1: DW-#1

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af
Outflow = 0.07 cfs @ 12.64 hrs, Volume= 0.042 af, Atten= 88%, Lag= 33.1 min
Discarded = 0.03 cfs @ 12.64 hrs, Volume= 0.040 af
Primary = 0.04 cfs @ 12.64 hrs, Volume= 0.003 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 513.14' @ 12.64 hrs Surf.Area= 456 sf Storage= 755 cf
Flood Elev= 515.35' Storage= 1,157 cf

Plug-Flow detention time= 188.7 min calculated for 0.042 af (97% of inflow)
Center-of-Mass det. time= 169.2 min (908.5 - 739.3)

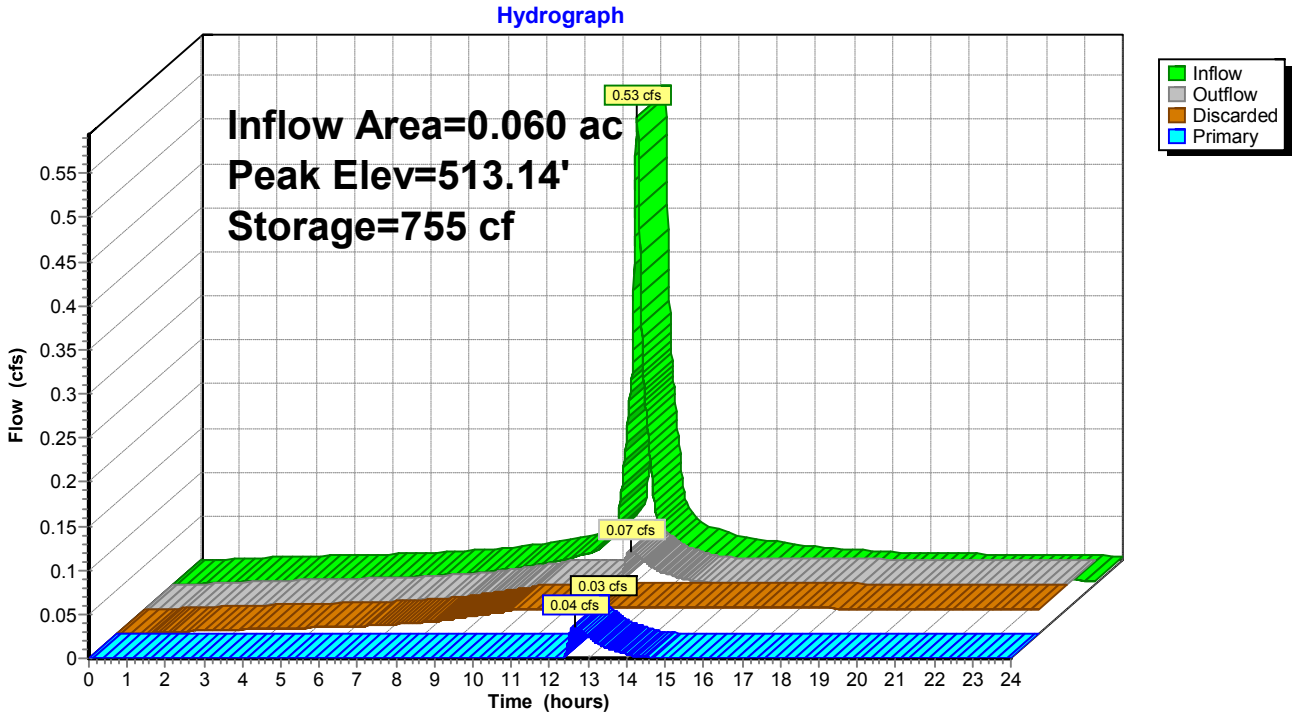
Volume	Invert	Avail.Storage	Storage Description
#1	511.52'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	511.52'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 497.00'
#2	Primary	513.02'	**4.0" Round Culvert** L= 82.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 513.02' / 506.48' S= 0.0798 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.64 hrs HW=513.14' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.03 cfs @ 12.64 hrs HW=513.14' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.03 cfs @ 1.19 fps)

Pond DW-#1: DW-#1


Hydrograph
Inflow Area=0.060 ac
Peak Elev=513.14'
Storage=755 cf
0.53 cfs
0.07 cfs
0.03 cfs
0.04 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond DW-#2: DW-#2

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af
Outflow = 0.07 cfs @ 12.63 hrs, Volume= 0.042 af, Atten= 88%, Lag= 32.9 min
Discarded = 0.03 cfs @ 12.63 hrs, Volume= 0.039 af
Primary = 0.04 cfs @ 12.63 hrs, Volume= 0.003 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 512.32' @ 12.63 hrs Surf.Area= 456 sf Storage= 756 cf
Flood Elev= 514.52' Storage= 1,157 cf

Plug-Flow detention time= 192.7 min calculated for 0.042 af (96% of inflow)
Center-of-Mass det. time= 167.8 min (907.1 - 739.3)

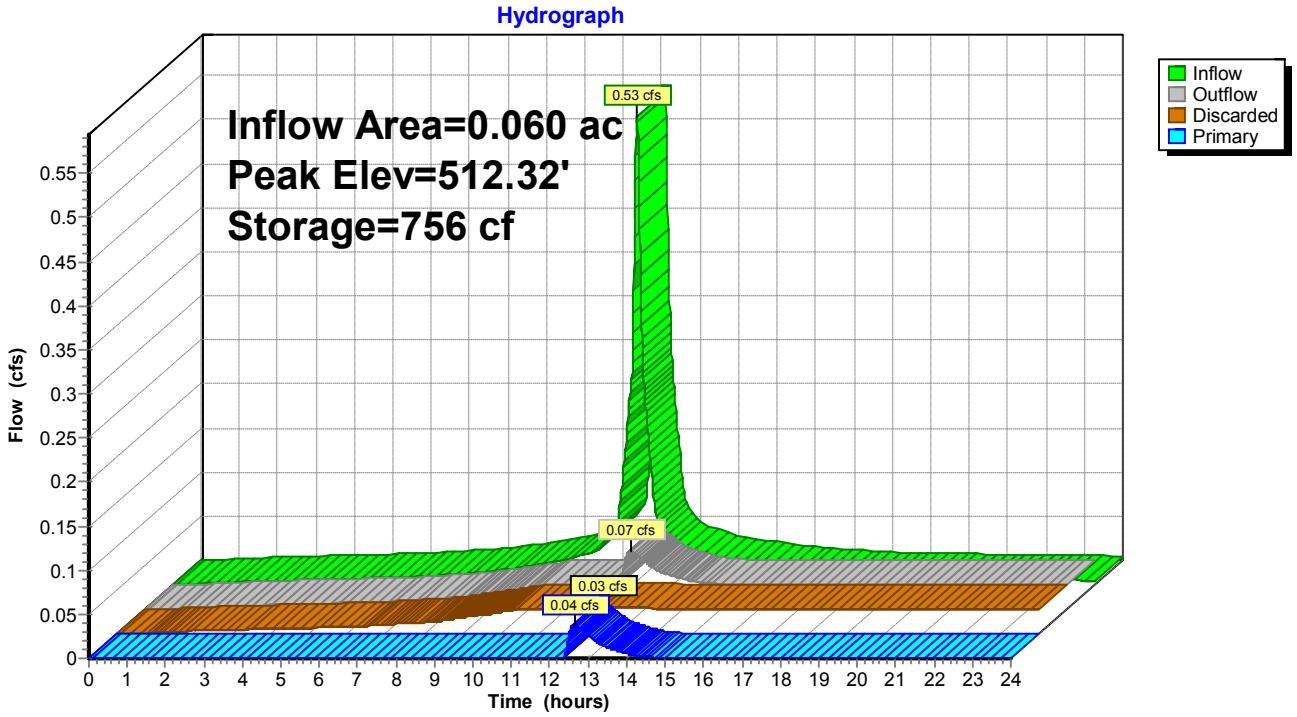
Volume	Invert	Avail.Storage	Storage Description
#1	510.69'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	510.69'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 489.00'
#2	Primary	512.19'	**4.0" Round Culvert** L= 39.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 512.19' / 506.48' S= 0.1464 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.63 hrs HW=512.32' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.04 cfs @ 12.63 hrs HW=512.32' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.04 cfs @ 1.20 fps)

Pond DW-#2: DW-#2


Hydrograph
Inflow Area=0.060 ac
Peak Elev=512.32'
Storage=756 cf
0.53 cfs
0.07 cfs
0.03 cfs
0.04 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond DW-#3: DW-#3

Inflow Area = 0.058 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.51 cfs @ 12.08 hrs, Volume= 0.042 af
Outflow = 0.36 cfs @ 12.16 hrs, Volume= 0.039 af, Atten= 29%, Lag= 4.7 min
Discarded = 0.01 cfs @ 12.16 hrs, Volume= 0.016 af
Primary = 0.35 cfs @ 12.16 hrs, Volume= 0.022 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 507.68' @ 12.16 hrs Surf.Area= 151 sf Storage= 377 cf
Flood Elev= 509.29' Storage= 386 cf

Plug-Flow detention time= 92.7 min calculated for 0.039 af (91% of inflow)
Center-of-Mass det. time= 47.1 min (786.4 - 739.3)

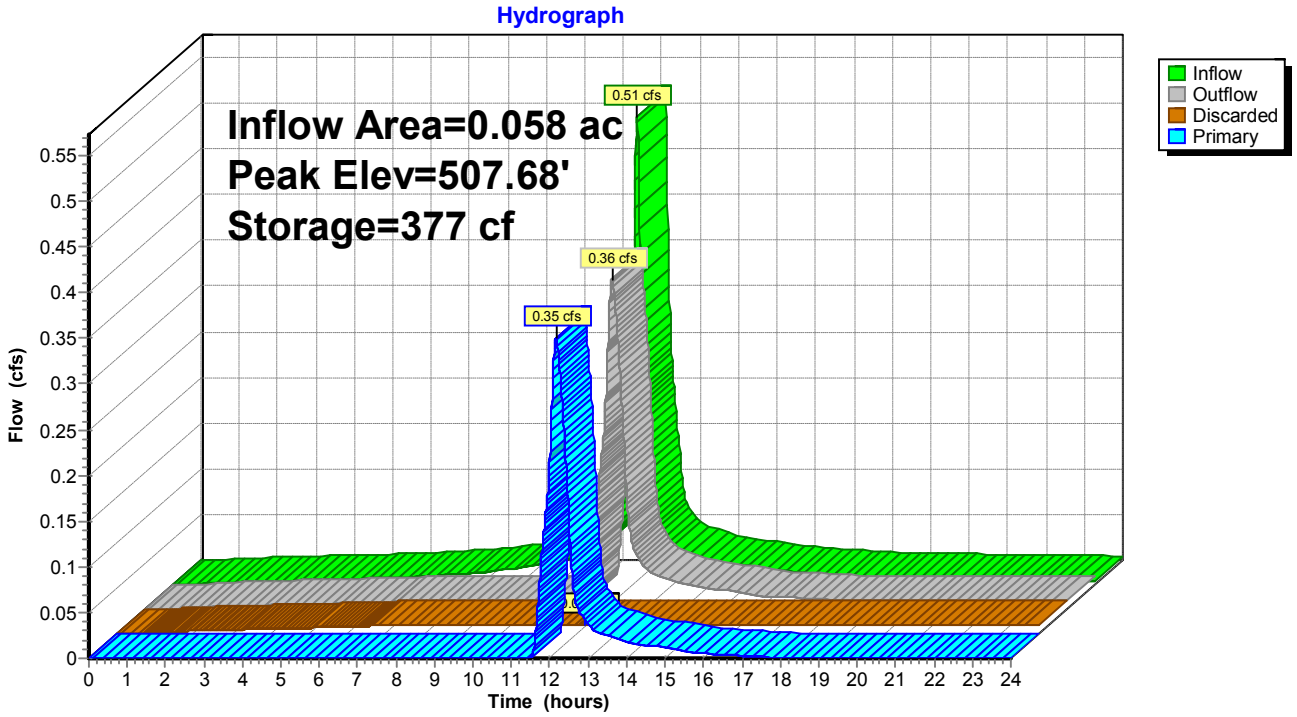
Volume	Invert	Avail.Storage	Storage Description
#1	505.24'	386 cf	**Shea Dry Well 1000gal** x 3 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	505.24'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 489.00'
#2	Primary	506.74'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 506.74' / 506.48' S= 0.0153 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.01 cfs @ 12.16 hrs HW=507.68' (Free Discharge)
└**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.35 cfs @ 12.16 hrs HW=507.68' (Free Discharge)
└**2=Culvert** (Barrel Controls 0.35 cfs @ 4.02 fps)

Pond DW-#3: DW-#3


Hydrograph
Inflow Area=0.058 ac
Peak Elev=507.68'
Storage=377 cf
0.51 cfs
0.36 cfs
0.35 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond DW-#4: DW-#4

Inflow Area = 0.058 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.51 cfs @ 12.08 hrs, Volume= 0.042 af
Outflow = 0.05 cfs @ 12.82 hrs, Volume= 0.041 af, Atten= 90%, Lag= 44.2 min
Discarded = 0.03 cfs @ 12.82 hrs, Volume= 0.039 af
Primary = 0.02 cfs @ 12.82 hrs, Volume= 0.002 af
Routed to Pond CB-#2 : CB-#2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 504.39' @ 12.82 hrs Surf.Area= 457 sf Storage= 742 cf
Flood Elev= 507.74' Storage= 1,157 cf

Plug-Flow detention time= 192.5 min calculated for 0.041 af (97% of inflow)
Center-of-Mass det. time= 176.2 min (915.5 - 739.3)

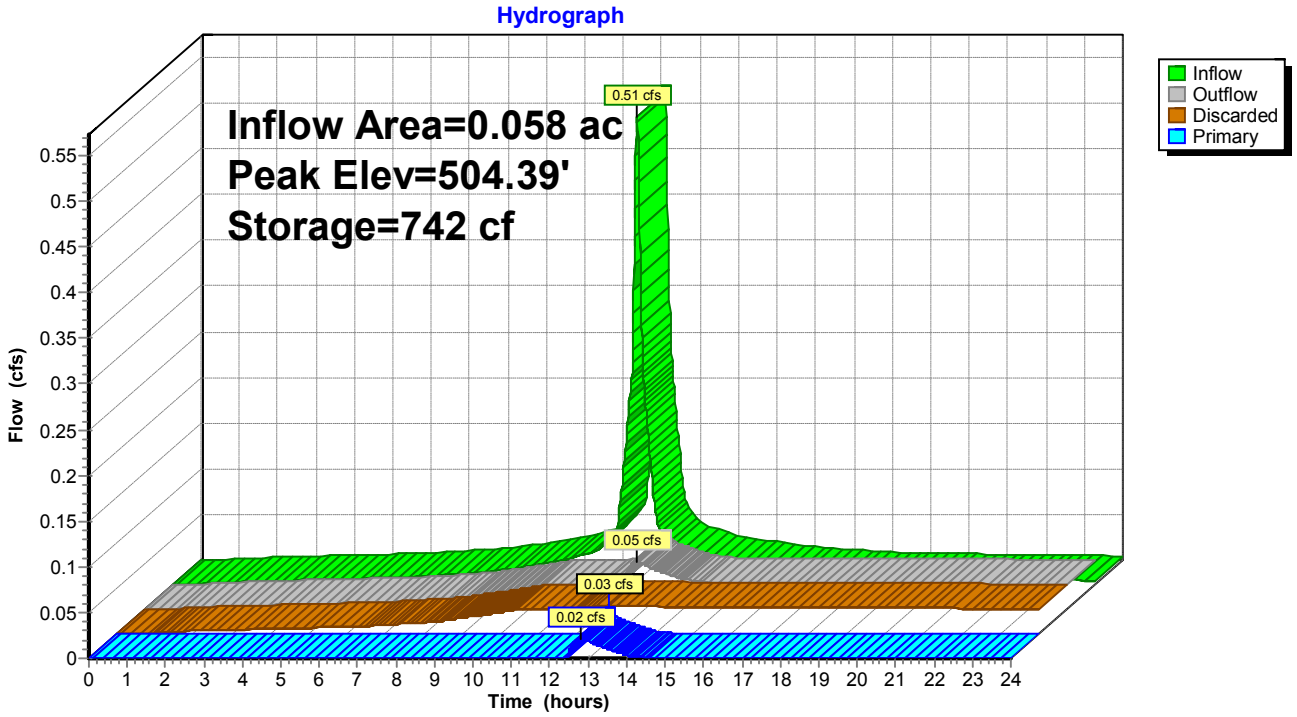
Volume	Invert	Avail.Storage	Storage Description
#1	502.80'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	502.80'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 488.00'
#2	Primary	504.30'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 504.30' / 503.03' S= 0.0747 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.82 hrs HW=504.39' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.02 cfs @ 12.82 hrs HW=504.39' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.02 cfs @ 1.04 fps)

Pond DW-#4: DW-#4


Hydrograph
Inflow Area=0.058 ac
Peak Elev=504.39'
Storage=742 cf
0.51 cfs
0.05 cfs
0.03 cfs
0.02 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond DW-#5: DW-#5

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af
Outflow = 0.07 cfs @ 12.63 hrs, Volume= 0.042 af, Atten= 87%, Lag= 32.5 min
Discarded = 0.03 cfs @ 12.63 hrs, Volume= 0.040 af
Primary = 0.04 cfs @ 12.63 hrs, Volume= 0.003 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 500.98' @ 12.63 hrs Surf.Area= 456 sf Storage= 756 cf
Flood Elev= 504.23' Storage= 1,157 cf

Plug-Flow detention time= 190.9 min calculated for 0.042 af (97% of inflow)
Center-of-Mass det. time= 170.0 min (909.3 - 739.3)

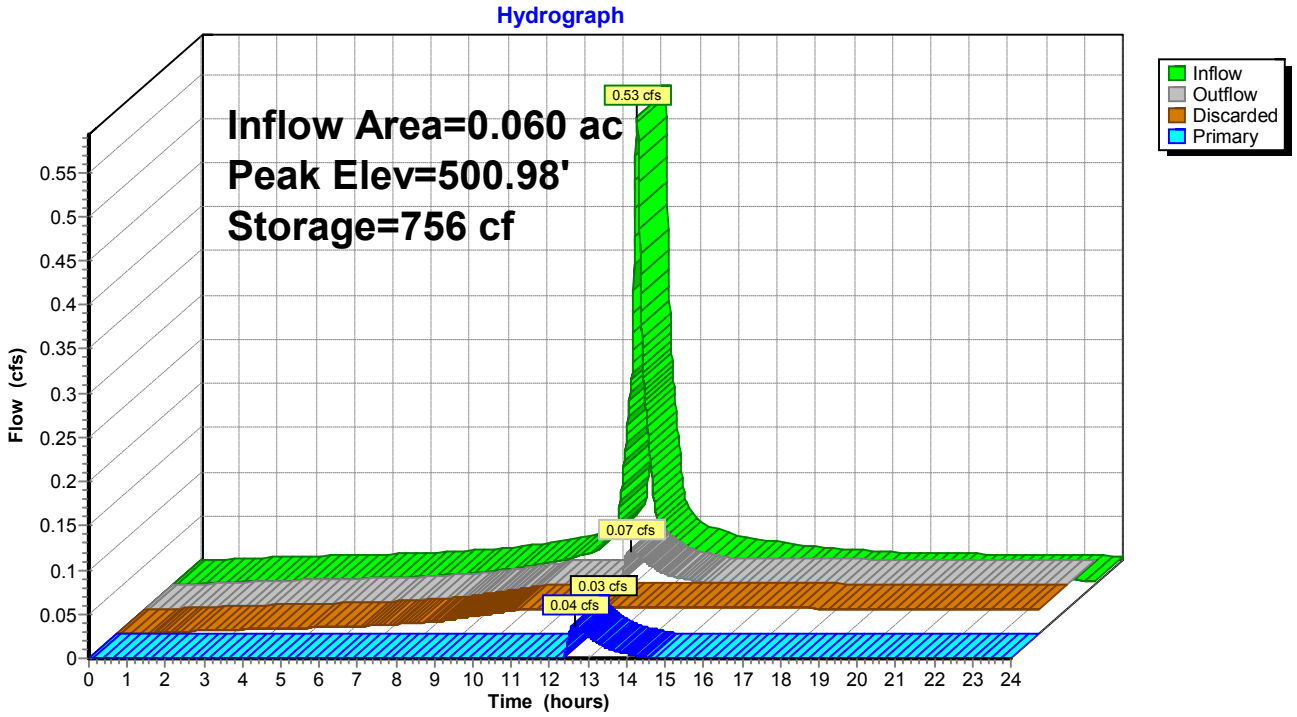
Volume	Invert	Avail.Storage	Storage Description
#1	499.36'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	499.36'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 483.00'
#2	Primary	500.86'	**4.0" Round Culvert** L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.86' / 500.35' S= 0.0300 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.63 hrs HW=500.98' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.04 cfs @ 12.63 hrs HW=500.98' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.04 cfs @ 1.20 fps)

Pond DW-#5: DW-#5


Hydrograph
Inflow Area=0.060 ac
Peak Elev=500.98'
Storage=756 cf
0.53 cfs
0.07 cfs
0.03 cfs
0.04 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond DW-#6: DW-#6

Inflow Area = 0.060 ac,100.00% Impervious, Inflow Depth > 8.75" for 100-year event
Inflow = 0.53 cfs @ 12.08 hrs, Volume= 0.044 af
Outflow = 0.06 cfs @ 12.64 hrs, Volume= 0.043 af, Atten= 88%, Lag= 33.2 min
Discarded = 0.03 cfs @ 12.64 hrs, Volume= 0.041 af
Primary = 0.03 cfs @ 12.64 hrs, Volume= 0.002 af
Routed to Pond CB-#3 : CB-#3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 499.49' @ 12.64 hrs Surf.Area= 456 sf Storage= 752 cf
Flood Elev= 502.70' Storage= 1,157 cf

Plug-Flow detention time= 177.5 min calculated for 0.043 af (99% of inflow)
Center-of-Mass det. time= 172.2 min (911.5 - 739.3)

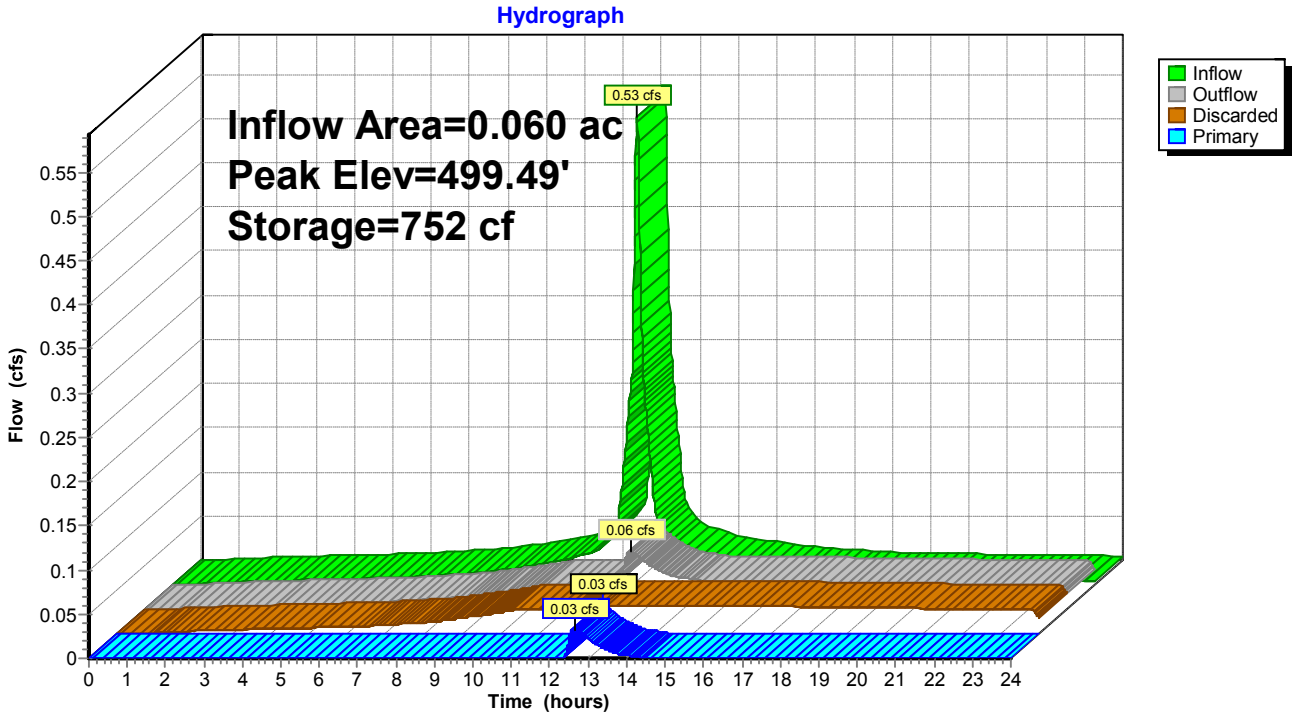
Volume	Invert	Avail.Storage	Storage Description
#1	497.87'	1,157 cf	**Shea Dry Well 1000gal** x 9 Inside= 62.0"W x 30.0"H => 12.86 sf x 10.00'L = 128.6 cf Outside= 68.0"W x 34.0"H => 15.80 sf x 10.50'L = 165.9 cf

Device	Routing	Invert	Outlet Devices
#1	Discarded	497.87'	**2.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 490.00'
#2	Primary	499.37'	**4.0" Round Culvert** L= 13.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 499.37' / 496.88' S= 0.1791 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.03 cfs @ 12.64 hrs HW=499.49' (Free Discharge)
1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.03 cfs @ 12.64 hrs HW=499.49' (Free Discharge)
2=Culvert (Inlet Controls 0.03 cfs @ 1.16 fps)

Pond DW-#6: DW-#6


Hydrograph
Inflow Area=0.060 ac
Peak Elev=499.49'
Storage=752 cf
0.53 cfs
0.06 cfs
0.03 cfs
0.03 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond SDMH #5: SDMH #5

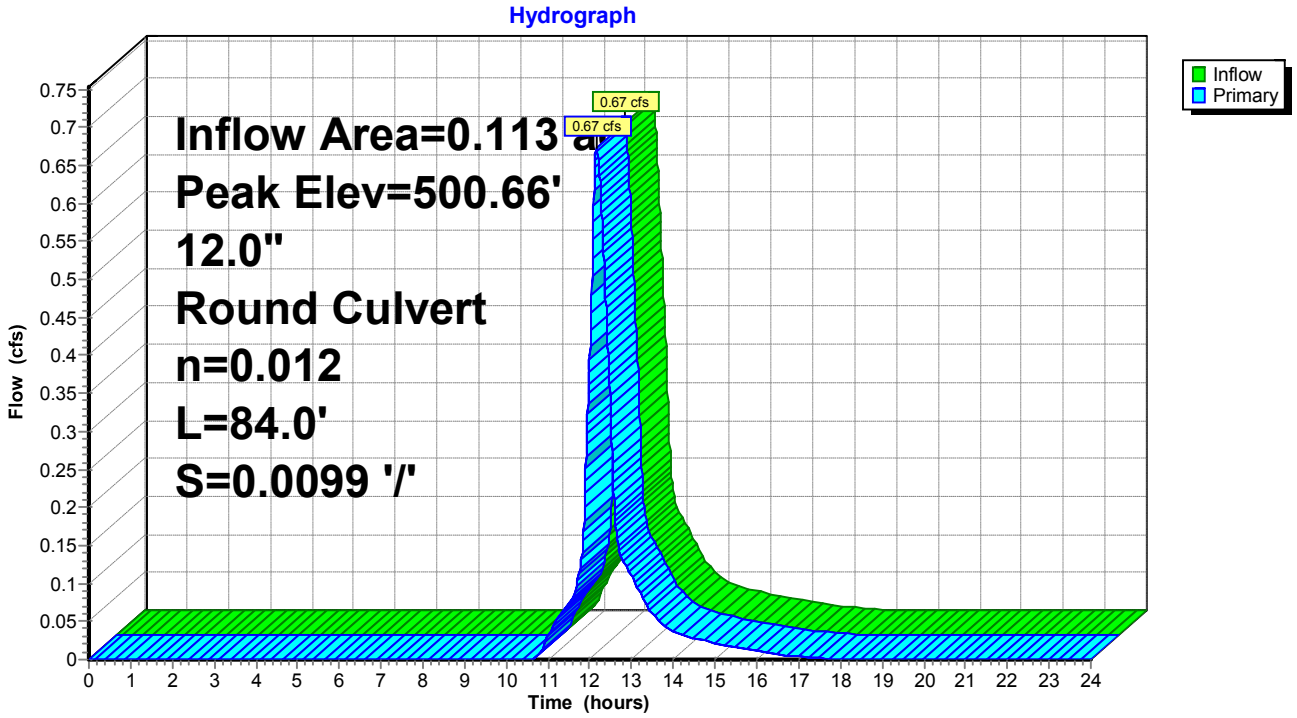
Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 5.02" for 100-year event
Inflow = 0.67 cfs @ 12.16 hrs, Volume= 0.047 af
Outflow = 0.67 cfs @ 12.16 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.16 hrs, Volume= 0.047 af
Routed to Pond SDMH #6 : SDMH #6

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 500.66' @ 12.16 hrs
Flood Elev= 505.64'

Device	Routing	Invert	Outlet Devices
#1	Primary	500.25'	**12.0" Round Culvert** L= 84.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 500.25' / 499.42' S= 0.0099 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.16 hrs HW=500.66' (Free Discharge)
1=Culvert (Inlet Controls 0.67 cfs @ 2.19 fps)

Pond SDMH #5: SDMH #5



Summary for Pond SDMH #6: SDMH #6

[79] Warning: Submerged Pond SDMH #5 Primary device # 1 OUTLET by 0.61'

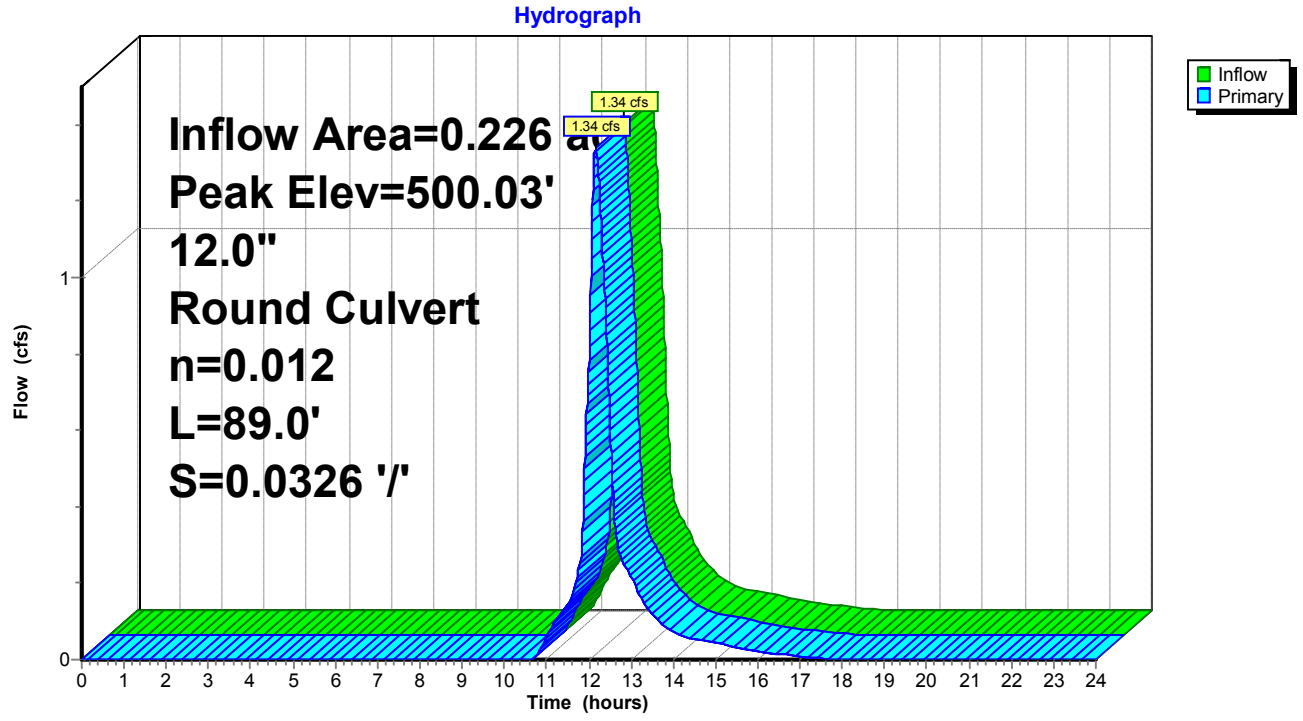
Inflow Area = 0.226 ac,100.00% Impervious, Inflow Depth = 5.00" for 100-year event
Inflow = 1.34 cfs @ 12.16 hrs, Volume= 0.094 af
Outflow = 1.34 cfs @ 12.16 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.16 hrs, Volume= 0.094 af
Routed to Pond SDMH #7 : SDMH #7

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 500.03' @ 12.16 hrs
Flood Elev= 505.89'

Device	Routing	Invert	Outlet Devices
#1	Primary	499.42'	**12.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 499.42' / 496.52' S= 0.0326 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.34 cfs @ 12.16 hrs HW=500.03' (Free Discharge)
1=Culvert (Inlet Controls 1.34 cfs @ 2.66 fps)

Pond SDMH #6: SDMH #6



Summary for Pond SDMH #7: SDMH #7

[79] Warning: Submerged Pond SDMH #6 Primary device # 1 OUTLET by 0.42'

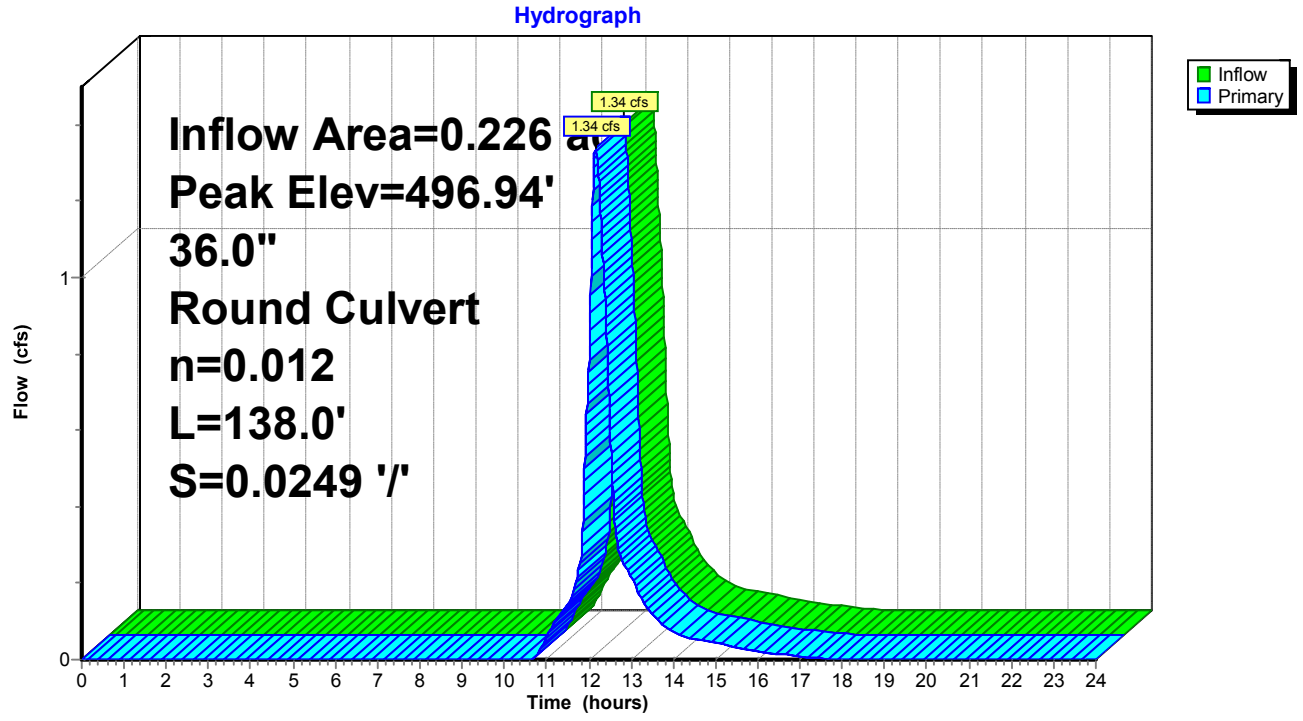
Inflow Area = 0.226 ac,100.00% Impervious, Inflow Depth = 5.00" for 100-year event
Inflow = 1.34 cfs @ 12.16 hrs, Volume= 0.094 af
Outflow = 1.34 cfs @ 12.16 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.16 hrs, Volume= 0.094 af
Routed to Reach POST : POST

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 496.94' @ 12.16 hrs
Flood Elev= 503.74'

Device	Routing	Invert	Outlet Devices
#1	Primary	496.52'	**36.0" Round Culvert** L= 138.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 496.52' / 493.08' S= 0.0249 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=1.34 cfs @ 12.16 hrs HW=496.94' (Free Discharge)
1=Culvert (Inlet Controls 1.34 cfs @ 2.21 fps)

Pond SDMH #7: SDMH #7



APPENDIX C

ATTACHMENT 1

Construction Stormwater Compliance Inspection Report

Project Name and Location: Municipality: County:	Date:	Page 1 of 2
	Permit # (if any): **NYR**	
	Entry Time:	Exit Time:
On-site Representative(s) and contact information:	Weather Conditions:	
Name and Address of SPDES Permittee/Title/Phone/Fax Numbers: Contacted: Yes ☐ No ☐		

INSPECTION CHECKLIST

SPDES Authority

	Yes	No	N/A		Law, rule or permit citation
1.	☐	☐	☐	Is a copy of the NOI posted at the construction site for public viewing?	
2.	☐	☐	☐	Is an up-to-date copy of the signed SWPPP retained at the construction site?	
3.	☐	☐	☐	Is a copy of the SPDES General Permit retained at the construction site?	

SWPPP Content

	Yes	No	N/A		Law, rule or permit citation
4.	☐	☐	☐	Does the SWPPP describe and identify the erosion & sediment control measures to be employed?	
5.	☐	☐	☐	Does the SWPPP provide a maintenance schedule for the erosion & sediment control measures?	
6.	☐	☐	☐	Does the SWPPP describe and identify the post-construction SW control measures to be employed?	
7.	☐	☐	☐	Does the SWPPP identify the contractor(s) and subcontractor(s) responsible for each measure?	
8.	☐	☐	☐	Does the SWPPP include all the necessary 'CONTRACTOR CERTIFICATION' statements?	
9.	☐	☐	☐	Is the SWPPP signed/certified by the permittee?	

Recordkeeping

	Yes	No	N/A		Law, rule or permit citation
10.	☐	☐	☐	Are inspections performed as required by the permit (every 7 days and after ½" rain event)?	
11.	☐	☐	☐	Are the site inspections performed by a qualified professional?	
12.	☐	☐	☐	Are all required reports properly signed/certified?	
13.	☐	☐	☐	Does the SWPPP include copies of the monthly/quarterly written summaries of compliance status?	

Visual Observations

	Yes	No	N/A		Law, rule or permit citation
14.	☐	☐	☐	Are all erosion and sediment control measures installed/constructed?	
15.	☐	☐	☐	Are all erosion and sediment control measures maintained properly?	
16.	☐	☐	☐	Have all disturbances of 5 acres or more been approved prior to the disturbance?	
17.	☐	☐	☐	Are stabilization measures initiated in inactive areas?	
18.	☐	☐	☐	Are permanent stormwater control measures implemented?	
19.	☐	☐	☐	Was there a discharge into the receiving water on the day of inspection?	
20.	☐	☐	☐	Are receiving waters free of there evidence of turbidity, sedimentation, or oil ? (If no , complete Page 2)	

Overall Inspection Rating: ❑ Satisfactory ❑ Marginal ❑ Unsatisfactory	
Name/Agency of Lead Inspector:	**Signature of Lead Inspector:**
Names/Agencies of Other Inspectors:	

Water Quality Observations

Describe the discharge(s) [source(s), impact on receiving water(s), etc.] _____

_____

_____

_____

_____

Describe the quality of the receiving water(s) both upstream and downstream of the discharge_____

_____

_____

_____

_____

Describe any other water quality standards or permit violations _____

_____

_____

Additional Comments:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

☐ Photographs attached

APPENDIX H

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

CONSTRUCTION SITE LOG BOOK

Table of Contents

Properly completing forms such as those contained in Appendix H meet the inspection requirement of NYS-DEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

I. PRE-CONSTRUCTION MEETING DOCUMENTS
Project Name _____
Permit No. _____ Date of Authorization _____
Name of Operator _____
Prime Contractor _____

a. Preamble to Site Assessment and Inspections
The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

c. Qualified Professional's Credentials & Certification

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

d. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

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

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

(4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass
water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

_____ _____

Inspector (print name) **Date of Inspection**

_____ _____

Qualified Professional (print name) **Qualified Professional Signature**

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

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions
Yes No NA
[ ] [ ] [ ] Is construction site litter and debris appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing
Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering
Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales
Yes No NA
[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

Runoff Control Practices (continued)

4. Stone Check Dam
Yes No NA
[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles
Yes No NA
[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation
Yes No NA
[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Stabilized Construction Entrance
Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence
Yes No NA
[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

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

Yes No NA

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

Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

Yes No NA

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

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:
1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Signature of Permittee or Duly Authorized Representative

Name of Permittee or Duly Authorized Representative Date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

CONSTRUCTION WASTE MANAGEMENT & SPILL PREVENTION PLAN

At the commencement of construction, land clearing materials will be collected and stored on-site for re-use. Construction debris such as cardboard, concrete, metal, wood and similar garbage will be collected in dumpsters and disposed of properly. An open top container will be on site during construction. The contractor will be responsible for organizing and placing containers on site and timely removal/replacement when containers are filled to capacity.

On-site storage of fuel chemicals shall be equipped with a spill kit. The contractor must provide secondary containment for storing any hazardous chemicals on site.

All equipment stored on site shall be inspected daily by the contractor for any oil or lubricant spills or leaks. Any leaks shall be repaired immediately. In addition, all equipment must be closely inspected prior to working in the Village R.O.W.

The contractor shall clean all spills immediately and shall report all spills to the New York State Department of Environmental Conservation.

This plan will be displayed in the construction jobsite trailer at all times.

APPENDIX D

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.40

(Submission #: HQ8-2F1P-53FN0, version 1)

Details

Originally Started By	Michael Morgante
Alternate Identifier	Phase II Site Plan for Route 208 & Chestnut Drive
Submission ID	HQ8-2F1P-53FN0
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Private Owner

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Wagschal

Owner/Operator Contact Person First Name
Yoel

Owner/Operator Mailing Address
14 Taramar Lane

City
Washingtonville

State
NY

Zip
10992

Phone
845-662-9188

Email
nuta@diligentdevelopersny.com

Federal Tax ID
N/A

> If the owner/operator is an organization, provide the Federal Tax ID number, or Employer Identification Number (EIN), in the format xx-xxxxxxx. If the owner/operator is an individual and not an organization, enter "Not Applicable" or "N/A" and do not provide the individual's social security number.

Project Location

Project/Site Name
Phase II Site Plan for Route 208 & Chestnut Drive

Street Address (Not P.O. Box)
Old Town Road

Side of Street
North

City/Town/Village (THAT ISSUES BUILDING PERMIT)
V. South Blooming Grove

State
NY

Zip
10950

DEC Region
3

> The DEC Region must be provided. Please use the NYSDEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm which DEC Region this site is located in. To view the DEC Regions, click on "Other Useful Reference Layers" on the left side of the map, then click on "DEC Administrative Boundary." Zoom out as needed to see the Region boundaries.
>
> For projects that span multiple Regions, please select a primary Region and then provide the additional Regions as a note in Question 39.

County
ORANGE

Name of Nearest Cross Street
Strawberry Lane

Distance to Nearest Cross Street (Feet)
115

Project In Relation to Cross Street
West

Tax Map Numbers Section-Block-Parcel
209-2-2

Tax Map Numbers
NONE PROVIDED

> If the project does not have tax map numbers (e.g. linear projects), enter “Not Applicable” or "N/A".

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
41.36937698375454,-74.18536327925803

Project Details

2. What is the nature of this project?
New Construction

> For the purposes of this eNOI, “New Construction” refers to any project that does not involve the disturbance of existing impervious area (i.e. 0 acres). If existing impervious area will be disturbed on the project site, it is considered redevelopment with either increase in impervious area or no increase in impervious area.

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Forest

Post-Development Future Land Use
Multifamily Residential

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
3.3

Total Area to be Disturbed (acres)
3.035

Existing Impervious Area to be Disturbed (acres)
0.1

Future Impervious Area Within Disturbed Area (acres)
2.8

5. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
0

B (%)
0

C (%)
100

D (%)
0

7. Is this a phased project?
Yes

8. Enter the planned start and end dates of the disturbance activities.

Start Date
12/31/2024

End Date
01/31/2026

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Unnamed tributary to Satterly Creek

> Drainage ditches and storm sewer systems are not considered surface waterbodies. Please identify the surface waterbody that they discharge to. If the nearest surface waterbody is unnamed, provide a description of the waterbody, such as, “Unnamed tributary to Niagara River.”

9a. Type of waterbody identified in question 9?
Stream/Creek Off Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
NONE PROVIDED

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

> Please use the DEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm if this site is located in one of the watersheds of an AA or AA-S classified water. To view the watershed areas, click on “Permit Related Layers” on the left side of the map, then click on “Class AA AAS Watersheds.”

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?
NONE PROVIDED

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

16. What is the name of the municipality/entity that owns the separate storm sewer system?
V. South Blooming Grove

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the 2015 or 2024 NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
Arden Consulting Engineers, PLLC

Contact Name (Last, First)
Morgante, Michael

Mailing Address
PO Box 340

City
Monroe

State
New York

Zip
10949

Phone
8457828114

Email
mam@ardenconsulting.net

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification
SWPPP Preparer Certification Form.pdf - 11/12/2024 08:34 AM
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Construction Road Stabilization
Sediment Basin
Silt Fence
Stabilized Construction Entrance

Biotechnical
None

Vegetative Measures
Mulching

Permanent Structural
Retaining Wall

Other
NONE PROVIDED

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Building Footprint Reduction
Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual.
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
0.14

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0.12

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
No

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
0.02

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
Yes

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
0.142

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
0.262

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
NONE PROVIDED

CPv Provided (acre-feet)
NONE PROVIDED

36a. The need to provide channel protection has been waived because:
Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
9.22

Post-Development (CFS)
8.27

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
20.65

Post-Development (CFS)
18.49

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
Private Owner

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
NONE PROVIDED

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
1.25

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
1.2

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
Yes

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload

NONE PROVIDED

Comment

NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

Owner-Operator Certification.pdf - 11/12/2024 08:40 AM

Comment

NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
11/12/2024 8:40 AM	Owner-Operator Certification.pdf	Attachment	Michael Morgante
11/12/2024 8:34 AM	SWPPP Preparer Certification Form.pdf	Attachment	Michael Morgante

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Phase II Site Plan for Route 208 & Chestnut Drive

Owner/Operator Information

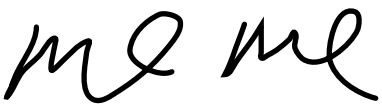
Owner/Operator (Company Name/Private Owner/Municipality Name)

Yoel Wagschal

Certification Statement – SWPPP Preparer

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

Michael	A	Morgante
First name	MI	Last Name



11/11/2024

Signature Date

Revised: January 2020

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Yoel Wagschal
2. Contact Person:	Yoel Wagcchal
3. Street Address:	14 Taramar Lane
4. City/State/Zip:	Washingtonville, NY 10992
II. Project Site Information	
5. Project/Site Name:	Phase II Site Plan for Route 208 & Chestnut Drive
6. Street Address:	Old Town Road
7. City/State/Zip:	Monroe, NY 10950
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	Al Fusco, P.E.
9. Title/Position:	Planning Board Engineer
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	Village of South Blooming Grove
12. MS4 SPDES Permit Identification Number: NYR20A	542
13. Contact Person:	Isaac Eckstein or Joel Stern
14. Street Address:	811 Route 208
15. City/State/Zip:	Monroe, NY 10950
16. Telephone Number:	845-782-2600

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: Isaac Eckstein or Joel Stern

Title/Position: MS4 Officers

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Phase II Site Plan for Route 208 & Chestnut Drive

eNOI Submission Number: HQ8-2F1P-53FN0

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

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

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

APPENDIX E

Contractor/Subcontractor Certification Statement

Site Name:_____

Site Address:_____

In accordance with Part III.A.6 of the General Permit GP-0-20-001, all contractors and subcontractors identified in the SWPPP shall sign a copy of the following certification statement before undertaking any construction activity at the site identified in the SWPPP.

"I hereby certify that 1 understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor Name: _____

Contractor Address: _____

Contractor Phone Number: _____

Name (please print): _____ **Title:**_____

Signature: _____ **Date:**_____

Contractor/Subcontractor SWPPP Responsibilities

The above reference contractor/subcontractor is responsible for the following elements of the SWPPP:

APPENDIX F

Village of South Blooming Grove
Stormwater Management Facility Easement and Maintenance Agreement

THIS AGREEMENT is made this ____ day of _____ 2025 by and between the Village of South Blooming Grove, having an address at 811 Route 208, Monroe, NY 10950 ("Municipality" or "Village") and Yoel Wagschal (or individual or corporation) having an address at 14 Taramar Lane, Washingtonville, NY 10992 (the "Facility Owner").

WHEREAS, the Facility Owner is the owner of certain real property in the Village of South Blooming Grove, County of Orange, State of New York, consisting of approximately 3.336 acres more particularly described in Schedule "A" annexed hereto and made a part hereof (the "Property"); and with a street address of Old Town Road, Monroe, NY 10950 and further known as S-B-L 209-2-2; and further known as the Phase II Site Plan for Route 208 & Chestnut, LLC commercial site plan; and

WHEREAS, the project plans were approved by the Village of South Blooming Grove Planning Board on _____, 20___ with various conditions; and

WHEREAS, the Municipality and the Facility Owner have to enter into an agreement to provide for the long-term maintenance and continuation of stormwater control measures and facilities approved by the Municipality for the below named project; and

WHEREAS, the Municipality and the Facility Owner desire that the stormwater control measures and facilities be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components.

NOW, THEREFORE, the Municipality and the Facility Owner agree as follows:

1. This agreement binds the Municipality and the Facility Owner, its successors and assigns to the maintenance provisions depicted in the approved project plans and described in the Stormwater Pollution Prevention Plan (SWPPP) which are on file with the Municipality's Stormwater Management Officer and where the operation and maintenance requirements are clearly set forth. The Facility Owner shall remain solely responsible for operation and maintenance in perpetuity and the Village assumes no operation, maintenance, control or responsibility in respect thereof.

2. The Facility Owner shall install, maintain, clean, repair, replace and continue the stormwater control measures depicted on the approved project plans for the Facility on and about the Property, as necessary to ensure optimum performance of the measures and in accordance with the approved design specifications. The stormwater control measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) approved by the Municipality and shall be in accord with the project plans approved by the Planning Board.

3. The Facility Owner shall be responsible for all expenses, costs and professional fees related to the installation and perpetual maintenance of the stormwater control measures and shall promptly comply with any future regulatory requirements as applicable and shall indemnify and hold the Municipality harmless from all actions, proceedings, including regulatory proceedings, including the Villages reasonable professional fees related thereto, and for all claims, damages, injuries and fines relative to the stormwater control measures and facilities.

4. The Facility Owner shall provide for the periodic inspection of the stormwater control measures, not less than once every 2 years, to determine the condition and integrity of the measures. Such inspection shall be performed by a Professional Engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Municipality within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the stormwater control measures. The Facility Owner shall undertake necessary maintenance, repairs and replacement of the stormwater control measures pursuant to the SWPPP or at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.

5. The Facility Owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality. The obligations of the Facility Owner under paragraphs 2, 3 and 4 of this Agreement shall toll upon the completion of the establishment of a drainage district of the Municipality and the acceptance of the dedication of the stormwater control measures by the Municipality. Notwithstanding, the Municipality shall have no obligation to establish any such drainage district nor accept ownership of any of the stormwater control measures.

6. This agreement shall be recorded in the Office of the County Clerk, County of Orange at the expense of the Facility owner and shall be referenced in any offering plan and/or prospectus, lease, contract of sale or future transfer, however, the failure to so reference shall not affect the validity of this Agreement. All rights, title and privileges herein granted, including all benefits and burdens, shall run with the land and shall be binding upon and inure to the benefit of the parties hereto, their respective heirs, executors, administrators, successors, assigns and legal representatives.

7. If ever the Municipality determines that the Facility Owner has failed to construct or maintain the stormwater control measures and facilities in accordance with the project plans or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and facilities and is hereby authorized by the owner to assess the expenses thereof as a lien against the property to be collected in the same fashion as other municipal taxes. In lieu thereof, the Facility Owner shall reimburse the Municipality for all actual costs and expenses, incurred in enforcing this Agreement and curing a violation.

8. At any time after a violation of this Agreement is alleged by the Municipality, the owner, at the sole discretion of the Municipality, shall post security in an amount and in a form acceptable to the Municipality to ensure the owner's future performance and maintenance of the stormwater control measures.

9. The Facility Owner hereby grants to the Village, its authorized agents, contractors and employees, a permanent easement which runs with the land to enter upon the Property at reasonable times to inspect the stormwater control measures whenever the Village deems necessary to ensure that the facility is maintained in proper working condition to meet design standards, and to undertake such steps as the Village deems reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures. The Facility Owner hereby releases and shall hold the Village harmless from any damages as a result of such entry and work. It is expressly understood and agreed that the Village is under no obligation to construct or routinely maintain or repair the stormwater control facilities, and in no event shall this agreement be construed to impose any such obligation on the Village.

10. The Facility Owner shall complete the site work within one (1) year of the issuance of permits for the site work, and conduct all site disturbance work in accordance with the approved SWPPP and in compliance with the approved project plans. In the event that the Facility Owner fails to complete the site work within one (1) year of the issuance of permits for the site work or fails to maintain/repair the facilities, the Municipality, upon giving twenty (20) days written notice to the Facility Owner, and a demand to complete, perform and correct by a date certain, and upon default of said Facility Owner, the Municipality shall have the right to complete the site work and/or to maintain/repair the facilities and to take such steps as it deems appropriate to either complete the site work or to stabilize and restore the site and/or to maintain/repair the facilities, and to recover its cost per paragraph 7 above. The time required to notice may be reduced to that deemed practicable and reasonable upon recommendation of the Engineer for the Village and upon the engineer's certification that an emergency condition exists which requires action to be undertaken immediately and does not allow time to give notice to the Facility Owner and an opportunity to correct in the manner specified above.

11. The governing bodies of the parties hereto have authorized the respective signatories to this Agreement.

IN WITNESS WHEREOF, the parties have duly executed this agreement as of the day and year first above written.

VILLAGE OF SOUTH BLOOMING GROVE MS4 Officer:

By: _____
Isaac Eckstein or Joel Stern

NAME OF RECORD

By: _____
Joel Wagschal

STATE OF NEW YORK:)
) SS.
COUNTY OF ORANGE:)

On the ___ day of _____, in the year 2023 before me, the undersigned, personally appeared **Joel Wagschal** personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK:)
) SS.
COUNTY OF ORANGE:)

On the ___ day of _____, in the year 2023 before me, the undersigned, personally appeared **Isaac Eckstein or Joel Stern** personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

APPENDIX H

STORMWATER
OPERATION, MAINTENANCE AND MANAGEMENT INSPECTION CHECKLIST

Project: *****
Location: ****

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory / Unsatisfactory	Comments
1.		
2.		
3.		

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

Actions to be taken:

_____

_____

_____

_____

_____

_____

_____

_____

CATCH BASIN INSPECTION FORM

Job No: _____ **Town:** _____ **Inspector:** _____ **Date:** _____

Catch Basin I.D.	_____	**Final Discharge from Structure?** Yes ☐ No ☐ **If Yes, Discharge to Outfall No:** _____	
Catch Basin Label:	**Stencil** ☐ **Ground Insert** ☐	**Sign** ☐ **None** ☐ **Other** _____	
Basin Material :	Concrete ☐ Corrygated metal ☐ Stone ☐ Brick ☐ Other: _____ ☐	**Catch basin Condition :**	Good ☐ Poor ☐ Fair ☐ Crumbling ☐
Pipe Material:	Concrete ☐ HDPE ☐ PVC ☐ Clay Tile ☐ Other: _____	**Pipe Measurements:**	Inlet Dia. (in) d= _____ Outlet Dia.(in) D= _____

Required Maintenance / Problems (Check all that apply):

☐ Tree Work Required
☐ New Grate is Required
☐ Pipe is Blocked
☐ Frame Maintenance is Required
☐ Remove Accumulated Sediment
☐ Pipe Maintenance is Required
☐ Basin Undermined or Bypassed
☐ Cannot Remove Cover
☐ Ditch Work
☐ Corrosion at Structure
☐ Erosion Around Structure
☐ Remove Trash & Debris
☐ Need Cement Around Grate
Other: _____

Catch Basin Grate Type:	**Sediment Buildup Depth:**	**More than 50% full?**	**Description of Flow:**	**Street Name/ Structure Location:**
Bar ☐ Cascade: ☐ Other: _____ Properly Aligned : Yes ☐ No ☐	0-6 (in): _____ 6-12(in): _____ 12-18(in): _____ 18-24(in): _____ 24+ (in): _____	Yes ☐ No ☐	Heavy ☐ Moderate ☐ Slight ☐ Trickling ☐	

***If the outlet is submerged check yes and indicate approximate height of water above the Outlet invert.** H above invert (in): _	Yes ☐	No ☐

☐ **Flow** ☐ **Standing Water (check one or both)**	**Observations:**		**Circle those present:**
	Color:		Foam / Oil Sheen / Sanitary Waste / Bacterial Sheen / Orange Staining / Floatables / Excessive sediment / Pet Waste / Optical Enhancers / Other: _____
	Odor:		
Weather Conditions:		Dry > 24 hours ☐ Wet ☐	
Sample of Screenings Collected for Analysis? Yes ☐ No ☐			
Amount of sediment removed:			
Comment:			

StormTech®
Detention • Retention • Water Quality
An ADS company

Isolator® Row PLUS O&M Manual


SC-740


MC-3500


FLAMP

THE MOST **ADVANCED** NAME IN WATER MANAGEMENT SOLUTIONS®

ADS®

THE ISOLATOR® ROW PLUS

INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row PLUS is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

THE ISOLATOR ROW PLUS

The Isolator Row PLUS is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row PLUS and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row PLUS protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row PLUS chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row PLUS is designed to capture the "first flush" runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole not only provides access to the Isolator Row PLUS but includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row PLUS bypass through a manifold to the other chambers. This is achieved with either an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row PLUS row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row PLUS. After Stormwater flows through the Isolator Row PLUS and into the rest of the StormTech chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

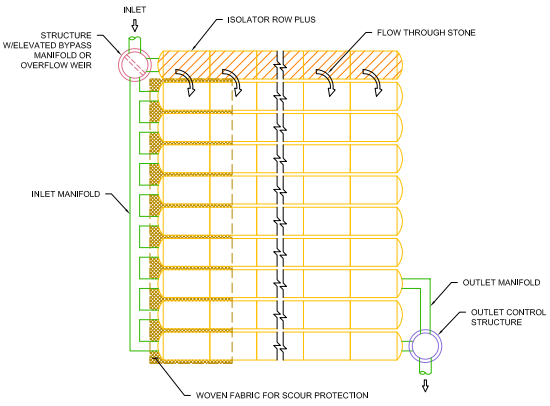
The Isolator Row FLAMP™ (patent pending) is a flared end ramp apparatus that is attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance over time by enhancing outflow of solid debris that would otherwise collect at an end of the chamber. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row PLUS may be part of a treatment train system. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row PLUS is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row PLUS.

Looking down the Isolator Row PLUS from the manhole opening, ADS PLUS Fabric is shown between the chamber and stone base.

StormTech Isolator Row PLUS with Overflow Spillway (not to scale)



ISOLATOR ROW PLUS INSPECTION/MAINTENANCE

INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row PLUS should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row PLUS incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row PLUS, clean-out should be performed.

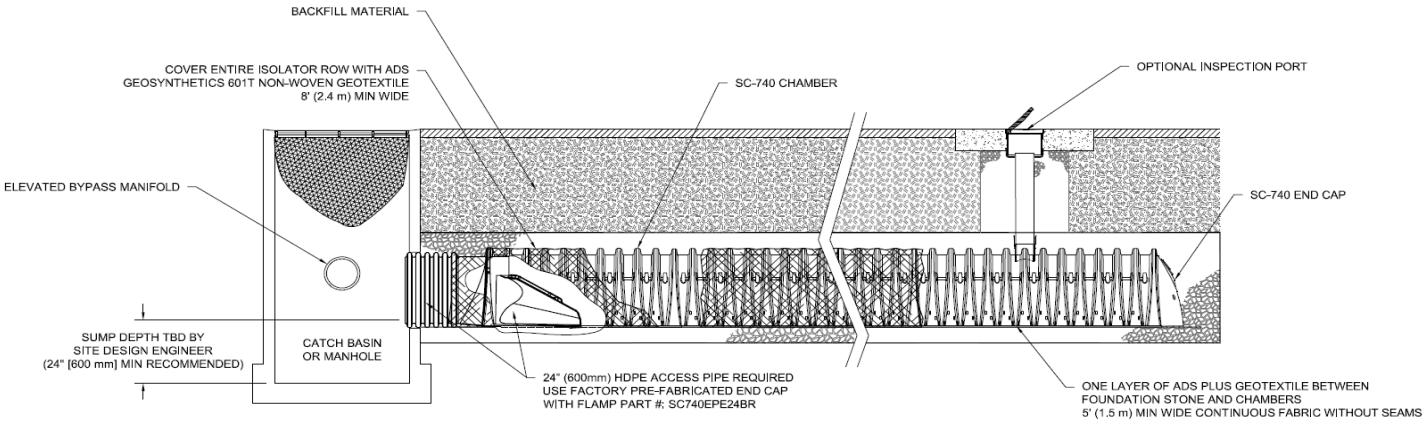
MAINTENANCE

The Isolator Row PLUS was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row PLUS while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row PLUS up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Row PLUS that have ADS PLUS Fabric (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row PLUS (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row PLUS.



ISOLATOR ROW PLUS STEP BY STEP MAINTENANCE PROCEDURES

STEP 1

Inspect Isolator Row PLUS for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row PLUS
   i. Remove cover from manhole at upstream end of Isolator Row PLUS
   ii. Using a flashlight, inspect down Isolator Row PLUS through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

STEP 2

Clean out Isolator Row PLUS using the JetVac process.

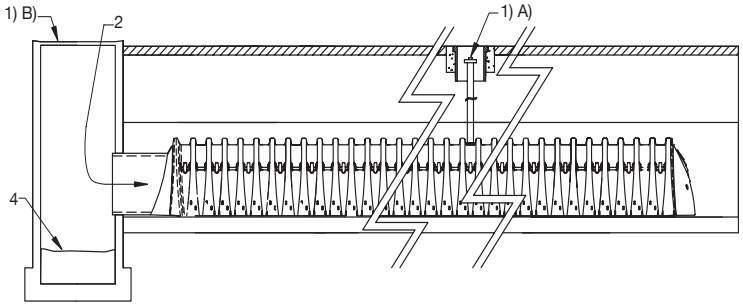
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

STEP 3

Replace all caps, lids and covers, record observations and actions.

STEP 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



SAMPLE MAINTENANCE LOG

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row PLUS, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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