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PCSM Narrative & Report

- Prepared for:

Data Centers

13 S. Bacton Hill Road
Malvern, PA 19355
East & West Whiteland Townships
Chester County, PA

- Applicant/Client:

Sentinel Green Fig, LLC

505 5th Ave., Floor 27
New York, NY 10017



Prepared By:

JMR Project #1508

November 10, 2023

REVISED DECEMBER 1, 2025

This report has been prepared together with plans entitled "Final Land Development Plan for Data Centers," prepared by JMR Engineering, LLC, Dated November 10, 2023, as amended.

REGISTERED PROFESSIONAL ENGINEERS
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PLAN PREPARER RECORD OF TRAINING AND EXPERIENCE IN STORMWATER MANAGEMENT METHODS AND TECHNIQUES
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RECENT PCSM PLANS PREPARED:

Name of Project:	<u>Swedesford Partners</u>	<u>Foulk Manor Estates</u>	<u>446 Lenni Developers</u>
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County:	<u>Chester</u>	<u>Delaware</u>	<u>Delaware</u>
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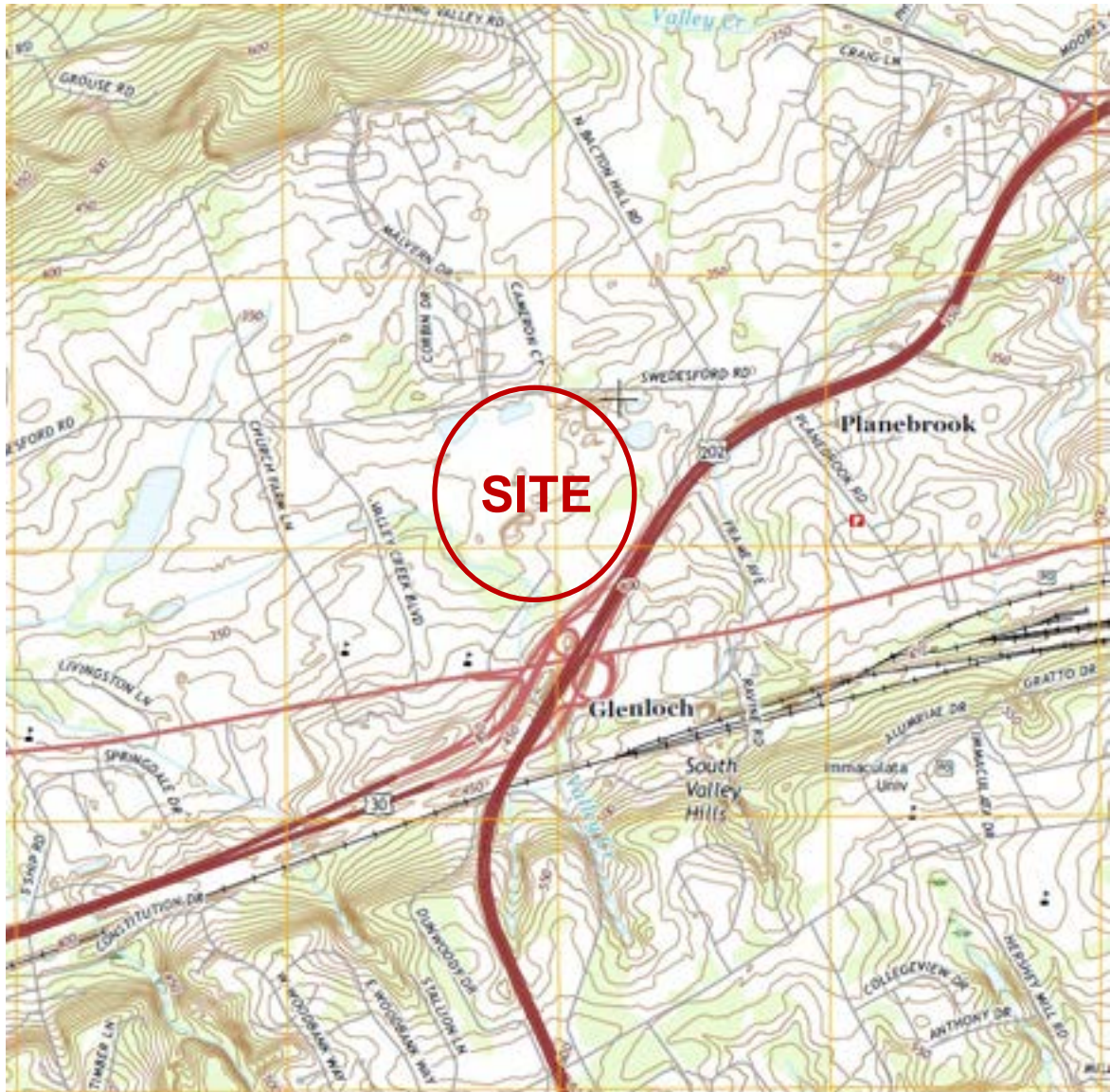
Municipality:	<u>East Whiteland</u>	<u>Bethel</u>	<u>Chester Heights</u>
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Permit Number:	<u>PAI011514043</u>	<u>PAG02002313003</u>	<u>PAG02002315009</u>
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Approving Agency:	<u>CCCD</u>	<u>DCCD</u>	<u>DCCD</u>
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LOCATION MAP

Data Centers



USGS MAP

East Whiteland Township – Chester County – Pennsylvania

Quadrangle: Malvern

Scale: NTS

HISTORIC AERIAL

Data Centers



GOOGLE EARTH IMAGE

East Whiteland Township – Chester County – Pennsylvania

Image Date: March 1992

Scale: NTS

AERIAL

Data Centers



GOOGLE EARTH IMAGE

East Whiteland Township – Chester County – Pennsylvania

Image Date: 2020

Scale: NTS

PCSM PROJECT NARRATIVE

- Data Centers -

Background:

Green Fig Land Company is the owner of multiple tracts of land located in East Whiteland Township totaling approximately 70± acres. The site is situated at 13 S. Bacton Hill Road and is identified as Tax Parcel Numbers 42-3-128, 42-3-130, 130.1 & 130.2. The parcels lie within the Institutional (INS) – Continuing Care Retirement Community (CCRC) zoning district as delineated on the East Whiteland Township Zoning Map.

The site is formerly home to the Foote Mineral Company which produced lithium metal, lithium chemicals and a variety of ores. At the height of its operations, the main plant area had 52+ buildings and process areas. Foote Mineral operated from 1941 until 1991. The site was added to the National Priorities List (NPL) in 1992, making it eligible for cleanup under the Superfund program. The site has since been remediated and removed from the National Priorities List in accordance with DEP requirements.

Since the Foote Mineral operation, the site went under a zoning modification and design development for a Continuing Care Retirement Community (CCRC) from 2002 through 2012. Plans were approved for ‘Whiteland Village’, an 850-unit retirement community. Two (2) miles of offsite sanitary sewer main extension were constructed to serve the future community, which was never built due to the 2008 economic downturn. The site was abandoned, and leased to local contractors for temporary lay down areas. All Brownfield remediation was completed despite the abandoned plans for construction, and onsite monitoring has continued to the present.

The Applicant is proposing to construct two Data Center buildings which will be approximately 410,000+ s.f. each, for a total of approximately 828,315 s.f. of building footprint area. The main access to the site will be from Swedesford Road, with a private/emergency access road provided to S. Bacton Hill Road. The site will be served by public water and sewer. It is the applicant’s intention to begin construction of the proposed improvements after securing the required permits from the Township, as well as the Chester County Conservation District.

Stormwater for the site will be handled through multiple BMP’s consisting of MRC rain gardens and a wet pond. Runoff from key impervious features (buildings and parking areas) will flow through pipe networks to pre-treatment forebays for each MRC facility. Water will then be slowly released from the MRC facilities and into the wet pond, which then discharge to the Valley Creek.

Controlling Ordinances:

A PCSM Plan has been developed to mitigate the impacts on the waters of the Commonwealth once the proposed project is completed. On November 9, 2022, East Whiteland Township adopted an Act 167 stormwater ordinance (Ordinance No. 2022-34). The PCSM Plan is in conformance with the Act 167 ordinance adopted as well as the requirements of the Pennsylvania Stormwater BMP Manual adopted December 30, 2006.

The calculations have been completed in accordance with the Re-development criteria of the Township stormwater management ordinance. §170-309(D)(3)(c)[1], which states “Apply the stormwater standards (redevelopment or new development) that are associated with the activity that involves the greatest land area. A drainage area plan entitled, Redevelopment Area Plan, is included within the attachments of this report and documents the areas. The entire limits of disturbance is 52% redevelopment to 48% new development. The entire project area discharges to one stormwater management facility therefor providing a quantitative means of volume and rate analysis would not be possible.

Site Features

- **Topography & Vegetation:**

The existing site was formerly known as the Foote Mineral site and is located between Swedesford Road and Route 202 in East Whiteland Township and is bordered by West Whiteland Township to the West. The site generally slopes moderately from east to west towards Valley Creek and consists of existing compacted soil / gravel areas and overgrown fields. Aerial imagery shows that up until about 4 years ago the parcel was being leased and used as large storage areas.

The tract has been the subject of multiple land development proposals ranging from healthcare and medical facilities to an active adult community. In the early 2000's, site work began and disturbed a large portion of the tract, Whiteland Village. A large wet pond was constructed and the construction was halted due to funding issues and the wet pond was filled in.

- **Receiving Waters of the Commonwealth:**

The site drains from the east to west and into Valley Creek. The site is located within the East Valley Creek Watershed, which has a Chapter 93 designation of **Cold Water Fishes (CWF), Migratory Fishes (MF)**. The site has areas that lie within a regulated floodplain zone AE, elevations determined. The majority of the parcel is located outside of the floodplain area, in Zone X.

PCSM Planning & Design

- **Preserve and Protect Receiving Stream Channels:**

The proposed stormwater management design will provide volume and rate control for the improvements in accordance with the East Whiteland Township stormwater management ordinance and PA DEP requirements which will preserve and protect the receiving stream channels.

Furthermore, the project is proposing to implement multiple Managed Release Concept Facilities and is therefore required to provide a rate reduction from 2-yr post-developed runoff rate to the 1-yr pre-developed runoff rate.

- **Prevent An Increase in The Rate of Stormwater Runoff:**

The project will utilize multiple Managed Release Concept Rain Gardens which will discharge to a large wet pond in order to provide significant runoff rate reduction for the proposed improvements.

- **Minimize Any Increase in Stormwater Runoff Volume:**

As discussed in the **Stormwater Management Calculations** section below, volume reduction is provided by MRC and Infiltration facilities.

- **Protection of Existing Drainage Features & Vegetation:**

There is hardly any existing vegetation onsite, however, Limited clearing measures have been provided as shown on the E&S Plan. The contractor shall install tree protection fencing prior to beginning any earth disturbance. The stormwater facilities have been designed to provide the volume reduction from the disturbed areas. The post-development runoff rates for the storm events will be less than or equal to their corresponding pre-development rates for all drainage areas.

- **Minimize Land Clearing & Grading:**

Limited clearing measures have been provided as shown on the PCSM plan. The contractor shall install tree protection fencing prior to beginning any earth disturbance.

- **Minimize Soil Compaction:**

The areas outside of the limits of disturbance will be protected from compaction, however, due to the underlying karst geologic formation, infiltration is not proposed onsite.

- **BMP Control Measures that Minimizes Changes to Stormwater Runoff:**

As discussed above, limited clearing, protection of existing vegetation, management of stormwater runoff and installation of the detention will minimize any changes to the existing stormwater runoff patterns from the site.

- **Thermal Impact Mitigation:**

The four (4) proposed MRC rain garden facilities capture runoff generated by smaller storm events and slowly release it over a period no longer than 72 hours. Release rates for the MRC facilities are limited to 0.01 CFS per acre of contributing impervious area. The MRC facilities discharge to a proposed wet pond to control larger storm events.

The Valley Creek Watershed is listed as Cold-Water Fishes, therefore, it is important to provide appropriate thermal impact mitigation measures. The wet pond has been designed with a siphon outfall to provide excellent temperature mitigation during storm events.

- **Soils and Geology:**

The project site lies within the limits of the ledger formation which is known to contain karst geology.

The soil types listed below are based on the USDA Natural Resources Conservation Soil Survey;

Urban Land-Conestoga Complex, 0 to 8% slopes (UrgB). The average depth to bedrock is 10-99 inches and the depth to the water table is 80 inches. The soil is classified with an HSG rating of "B."

Conestoga Silt Loam, 0 to 3% slopes (CtA). The average depth to bedrock is 60-99 inches and the depth to the water table is 80 inches. The soil is classified with an HSG rating of "B."

Conestoga Silt Loam, 3 to 8% slopes (CtB). The average depth to bedrock is 60-99 inches and the depth to the water table is 80 inches. The soil is classified with an HSG rating of "B."

In order to provide appropriate information in accordance with the Pre-Development Site Characterization and Assessment of Soil and Geology outlined in the Managed Release Concept document, one (1) infiltration test must be completed for every 40,000 s.f. of disturbed area. The area of disturbance for the project is **2,395,000 s.f.**, which requires a total of 60 test. The testing was completed by Uzman Engineering of Malvern PA from February 21 to March 1, 2024. In total, 67 test pits were completed to provide the geotechnical consultant with adequate information to make a recommendation for, or against, infiltration. Many of the test pits had rates ranging between 0.0 in/hr and 0.5 in/hr. The average of all testing was 0.71 in/hr. The attached geotechnical report provides recommendations again infiltration onsite.

STORMWATER MANAGEMENT DESIGN APPROACH:

Post-developed stormwater management for the site will be handled by multiple MRC Rain Gardens and a large wet pond. Stormwater runoff from the proposed buildings and adjacent pavement areas will be conveyed to the MRC Rain Gardens to provide stormwater filtration for small storm events. Runoff from larger storm events will overflow through pipe networks and will be conveyed to a large wet pond prior to being discharged to the creek.

The wet pond has been designed with an 8' deep permanent pool that will utilize the soil temperatures to cool the water during warmer months. The pond was also designed with a siphon outfall which will discharge water from the lower portions of the basin. The proposed basin and outfall structure was approved and constructed around 2008.

The MRC facilities have been designed with forebays to provide pre-treatment for runoff prior to entering the BMP's. The MRC Rain Gardens have been sized in accordance with DEP guidance for the 1.2"/2-hr event. The facility is designed to capture runoff and allow it to filter through the media, which then is slowly released via an underdrain with a limiting orifice during the 1.2"/2-hr event. Larger events have been routed through the facility, but are not permanently impounded and are bypassed into the rate control basin.

All stormwater from the project discharges to Valley Creek, therefore, a single analysis point has been utilized.

WET POND FEASIBILITY:

The proposed Wet pond is located within a watershed classified as Cold Water Fishes (CWF). In order to provide a stormwater management design that will appropriately dissipate the heat, a wet pond with a deep permanent pool has been selected as the final BMP prior to discharging to the surface waters.

The following analysis discusses in the factors that determine pond water temperature during warm weather. Various reference sources have been used to estimate the temperature of water entering and discharging from the pond. This analysis attempts to provide a conservative measure of water temperatures at different times of the year, including a "worst case scenario" in the hottest time of the year. The findings of this analysis have been compared with actual field observations completed by previous applicants in the past.

Steps to Forecasting Wet Pond Temperature

1. Determine rainfall event to model
2. Determine rainfall volume entering stormwater facility during storm event
3. Determine temperature of rainfall entering wet pond
4. Determine temperature within permanent pool
5. Determine post-discharge cooling of stormwater runoff

Step 1 involves the determination of the most appropriate rainfall event to consider in our model. The design storm event has been determined by choosing a rainfall event representative of a large percentage of annual rainfall, while being a small enough rainfall event to yield maximum runoff temperatures (i.e. smaller rainfall events will have a brief cooling effect on the impervious surfaces, and thus yield higher runoff temperatures).

The 1" storm represents 91.8% of annual rainfall and has therefore been chosen as the design storm event. The 1" rainfall event is smaller than the 2-year rainfall event and therefore considered a more frequent and/or common rainfall event. For the purposes of this analysis, it is assumed that the 1" rainfall event will have minimal heat loss on the impervious surfaces. However, it should be noted that the 1" storm will cool

impervious surfaces to some extent.

Step 2 involves the determination of stormwater runoff entering the wet pond during the design 1" rainfall event. The stormwater management wet pond shall be designed in accordance with the soil cover complex method and the procedures developed by the U.S. Department of Agriculture, Soil Conservation Service as outlined in their technical release No. 55, Urban Hydrology for small Watersheds. The wet pond inflow volume has been calculated using Hydroflow software and is shown in attached calculations.

The volume entering the Wet Pond is about 240,000 cu.ft. during the 1" storm event.

Step 3 is to calculate the temperature of the rainfall entering the wet pond. The warmest time of year the United States is statically between July and September. According to a graduate study prepared Patrick Bahr, 1996 (M.S. Thesis, University of Maryland, Solomons Island, MD 60 pg and appendices), runoff temperatures from impervious areas average 77° F.

Estimating runoff temperature is not an exact science; however some conservative assumptions can be made:

- From our hydroCAD model, we know that 41.3% of the 62.8-acre drainage area is impervious.
- From our HydroCAD Model we also know that 35.4 ac's of the 62.8 ac's, or 56% of the total drainage area to the basin is pre-treated by MRC Rain Garden BMP's. The Rain Garden facilities extend below the frost line, which remains at a constant 55° F temperature. The subsurface Rain Garden facilities will provide a natural cooling effect to the stormwater during rain events.

Runoff Temperature Calculations:

- Anticipated Runoff Temperature
 - a. 50% of the runoff to pass through a subsurface Rain Garden BMP's with a soil temperature of 55° F ~ therefore the BMP discharge temperature is estimated at 59° F
 - b. 50% of the runoff will enter the basin without passing through a subsurface BMP ~ therefore the discharge temperature is estimated at 77° F.
$$\frac{(77^{\circ} \text{ F} \times 50\%) + (59^{\circ} \text{ F} \times 50\%)}{100\%} = 68.0^{\circ} \text{ F}$$
- Worst Case Runoff Temperature - The above-mentioned graduate study by Patrick Bahr states that the worst-case runoff temperature during the warmest time of year is 87° F. Assuming the BMP's provide no cooling during a storm event, the worst case discharge temperature is 87° F.

Both temperatures will be used in the wet pond discharge analysis. It is assumed that the 1" storm will represent a rainfall event with the highest runoff temperature, as larger storm events will cause an increased cooling effect on impervious surfaces, yielding lower runoff temperatures.

Step 4 is performed to determine the temperatures within the permanent pool during the warmest time of year. The following assumptions shall be made to determine the permanent pool temperature:

- The permanent pool of water shall be 8' deep, which will allow for a stratification of water temperature.
- The entire permanent pool will be graded below existing grade, which will expose the surface of the pond to the cooler soil temperatures below the frost line.
- The water temperature of the bottom 4' of the pond is assumed to be 59° F. Existing soil temperature below the frost line is 55° F.
- The water temperature of the upper 4' of the pond is assumed to be the average historic monthly air temperature (as shown in the following table).

- Temperature Resource

Philadelphia Weather

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	54°	58°	67°	75°	81°	88°	90°	90°	85°	76°	66°	57°
Avg. Low	31°	34°	42°	50°	58°	65°	68°	68°	62°	48°	41°	34°
Mean	44°	47°	55°	64°	70°	77°	80°	78°	74°	64°	54°	46°
Avg. Precip.	5.6 in	5.3 in	6.4 in	5.7 in	4.9 in	3.9 in	5.4 in	3.5 in	3.7 in	3.4 in	5.0 in	5.8 in

Source: U.S. Department of State

Step 5 utilizes the information calculated in Steps 1 through 4 in order to determine the potential wet pond discharge temperatures to the west branch of the Valley Creek. Temperatures within the wet pond shall be calculated under the assumption that “full mixing” is occurring (i.e. the warmer stormwater inflow and upper water surface completely mixes with the cooler lower surface). Discharge temperatures shall be compared to actual field tested stream temperatures taken by a previous applicant who utilized Edward B. Walsh & Associates during the month of September 2005 (temperatures taken from digital thermometer with submersible probe). Temperature samples were taken at the locations shown on the USGS map below.

Trout are extremely sensitive to thermal pollution and temperature stress (Galli 1990). The water quality standards established by the Maryland Department of the Environment call for a temperature of no more than 68°F in a natural trout stream (COMAR 26.08.02.03-3D(3)(a)). In *Thermal impacts Associated with urbanization and stormwater management best practices*, Galli (1990, Appendix p. 91) states that brook trout begin dying at a water temperature of 75°F.



Location #1: Upstream side of Valley Creek Blvd. box culvert.

Location #2: Upstream side of culvert beneath Church Farm School access driveway.

WET POND DISCHARGE TEMPERATURE CALCULATIONS

Volume Type	Volume (cu ft.)	Percentage
Wet Pond Inflow Volume	240,000	36.66
Upper 4' of Permanent Pool	243,087	37.13
Lower 4' of Permanent Pool	171,650	26.22
Total Volume	654,747	100.00

Volume During Storm:

MONTH	Inflow Temperature (Anticipated)	Inflow Temperature (Worst-Case)	*Upper Permanent Pool Temperature	**Lower Permanent Pool Temperature	Average Anticipated Discharge Temperature	Average Worst-Case Discharge Temperature	Sample Stream Temperature (6:30AM) 87° Air Temperature 9/22/05	Sample Stream Temperature (10AM) 81° Air Temperature 9/17/05	Sample Stream Temperature (5PM) 83° Air Temperature 9/18/05	Lethal Trout Temperature			
							Sample #1	Sample #2	Sample #1	Sample #2	Sample #1	Sample #2	
January	-	-	44.0	59.0	47.9	47.9							-
February	-	-	47.0	59.0	50.1	50.1							-
March	-	-	55.0	59.0	56.0	56.0							-
April	-	-	64.0	59.0	62.7	62.7							-
May	-	-	70.0	59.0	67.1	67.1							-
June	68.0	87.0	77.0	59.0	69.0	75.9							68.0
July	68.0	87.0	80.0	59.0	70.1	77.1							68.0
August	68.0	87.0	79.0	59.0	69.4	76.3							68.0
September	68.0	87.0	74.0	59.0	67.9	74.8	68.6	65.3	70.9	70.4	70.0	70.4	68.0
October	-	-	64.0	59.0	62.7	62.7							-
November	-	-	54.0	59.0	55.3	55.3							-
December	-	-	46.0	59.0	49.4	49.4							-

Red - Indicates stream temperature greater than 68 degrees

* Taken from Philadelphia Weather chart by the U.S. Department of State

** Based upon soil temperatures below the frostline

Average Anticipated Discharge Temperature = Weighted Average of Anticipated Inflow, Upper Permanent Pool & Lower Permanent Pool

Average Worst-Case Discharge Temperature = Weighted Average of Worst-Case Inflow, Upper Permanent Pool & Lower Permanent Pool

Conclusion

The calculated discharge temperature results favor the wet pond design for the following reasons:

- The water quality standards established by the Maryland Department of the Environment call for a temperature of no more than 68°F in a natural trout stream, which is exceeded with the current stream temperatures recorded in the month of September. The projected stream temperatures in the month of July would most likely be greater than or equal to September stream temperatures.
- Anticipated and Worst-case discharge temperatures are below the field tested stream temperatures for the month of September.
- The proposed subsurface permanent pool is designed up to 8' below existing grade, which will provide a continuous cooling effect to the permanent pool.
- The Anticipated discharge temperature assumes "full mixing" of the water, which will likely not occur due to the 8' permanent pool depth. The wet pond discharge siphon pipes will draw water from the lowest depths of the permanent pool. Therefore, the likely discharge temperatures will likely be cooler than either of the calculated temperatures (anticipated or worst case).
- The wet pond is designed "offline" per the Maryland Manual
- The 160' corridor between the wet pond discharge point and the stream is shaded with existing mature trees. According to John Galli of the Washington Council of Governments, discharge waters can cool -0.3° F for every 100'. This could account for an additional 0.5° F of cooling before the discharge waters reach the stream.
- Rain Garden BMP's will remove nutrients from runoff prior to discharge into the wet pond, which will help prevent eutrophication of the wet pond.
- A wet pond is an excellent visual amenity to the community.

We conclude that the above-mentioned reasoning indicates the wet pond is a superior design for this project over the typical above-grade permanent pool wet pond design and the alternative stormwater wetland system designs.

2-YR Volume & Stormwater Management Facility Calculations:

Storm water runoff for the increase in post-developed volume for the 2-yr storm event was analyzed utilizing the PADEP PCSM Spreadsheet which utilizes the **SCS Methodology** as described in the NRCS Technical Release-55, Urban Hydrology for Small Watersheds and as recommended by the Pennsylvania Storm Water Best management Practices Manual (BMP Manual). ***All rainfall amounts used in the design calculations were obtained from NOAA Atlas 14 data as recommended by the PA BMP Manual.***

The proposed site layout changes have been discussed with the Conservation District and the Environmental Program Manager of the PA DEP Bureau of Clean Water, NPDES Permitting Division, to determine if the MRC design utilized in the original design could be utilized in the revised design. It was confirmed that the design standards utilized for the original permit could also be utilized for the revised design. This means that the project is not subject to the new MRC Design Criteria.

The DEP PCSM Spreadsheet has been included following the narrative of this report and summarizes the 2-yr increase volume for the new site layout, as well as the anticipated volume credits provide by the MRC facilities. It is important to note that the approved plan had a surplus of approximately 200,000 C.F. of volume credits. The new design does include additional impervious, however the proposed MRC's provide a deeper soil section and are also slightly larger than the previous design. In addition, one new MRC facility has been added to the site. The PCSM Spreadsheet included in this report shows the required volume and anticipated MRC credits.

The 2-year pre-developed volume for the site was calculated as **282,768 ft³** and the total post-developed runoff for the site was calculated as **368,095 ft³**, giving a 2-yr volume increase of **115,327 ft³** to be managed by structural and non-structural BMP's. The 2-yr volume credits for the MRC facilities have been determined utilizing the PA DEP PCSM Spreadsheet, and are for the old layout as discussed above, which does not include the additional new facility. The total volume provided for the project is **350,325 ft³**, which far exceeds the required volume.

Dewatering of the Managed Release Concept Rain Gardens will occur through an underdrain which limits outflow through a reduced orifice. The SCS model was used in hydroCAD to obtain the dewatering times and can be found in the 2-yr volumes and managed releases BMP calculations. Ponding depth for the 2-year storm, in conformance with the MRC Design Guidelines, does not exceed 2.0 feet, even during larger storm events.

Forebays have been provided in the MRC facilities to provide additional pre-treatment since larger storm events are routed through the BMP's. The facilities have been designed in accordance with the Maryland Stormwater Design Manual and have been sized as %10 of the total facility volume.

Waivers from the appropriate ordinance sections have been requested to allow the MRC facilities to be constructed in accordance with DEP Guidance.

Runoff Rate Calculations

Stormwater runoff rates have been calculated by utilizing the *SCS Methodology*. *All rainfall intensity data used in the design calculations were obtained from NOAA Atlas 14 data as recommended by the PA BMP Manual.*

The proposed rate calculations have been provided in accordance with the Re-development rate criteria in the ordinance.

REQUIRED RATE REDUCTIONS (WEST WHITELAND TOWNSHIP)

Pre-Developed Storm Event	Required Post Developed Storm Event
2-yr	2-yr
5-yr	5-yr
10-yr	10-yr
25-yr	25-yr
50-yr	50-yr
100-yr	100-yr

REQUIRED RATE REDUCTIONS (EAST WHITELAND TOWNSHIP)

Pre-Developed Storm Event	Required Post Developed Storm Event
2-yr	1-yr*
5-yr	90% 5-yr
10-yr	90% 10-yr
25-yr	90% 25-yr
50-yr	90% 50-yr
100-yr	90% 100-yr

*Per MRC Design Guidance

The “Maximum Allowable Post” row of the table below has been calculated for the post developed 2-yr event by adding the “Pre Developed Onsite” value of the 1-yr event to the Pre Developed Offsite value for the 2-yr event because the stormwater design is not required to reduce offsite flows through the site. For example, below 42.45 (1-yr pre onsite) + 7.19 (2-yr pre offsite) = 49.64 (max allowable post developed 2-yr).

The “Maximum Allowable Post” row of the table below has been calculated for the post developed 5-yr through 100-yr event by adding the 90% of the corresponding “Pre Developed Onsite” value to the corresponding Pre Developed Offsite value for the event because the stormwater design is not required to reduce offsite flows through the site. For example, below 0.90 x 76.28 (5-yr pre onsite) + 12.63 (5-yr pre offsite) = 81.28 (max allowable post developed 5-yr).

The runoff rate table below outlines the pre-developed and post-developed runoff rates for the project at Drainage Point 01.

RUNOFF RATES

Peak Flow Summary (cfs) - POA001 (REDEVELOPMENT)							
	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Pre Developed Onsite	42.45	54.62	76.28	96.91	128.76	157.33	189.18
Predevelopment Offsite	4.42	7.19	12.63	18.04	26.58	34.40	43.22
Total Pre to POI #1	46.87	61.82	88.88	114.87	155.16	191.39	231.95
Maximum Allowable Post	-	49.64	81.28	105.26	142.46	176.00	213.48
Total Post to POI #1	5.17	8.38	14.98	29.10	60.78	92.71	125.45
Total Rate Reduction	-41.70	-53.44	-73.90	-85.77	-94.38	-98.68	-106.50
Reduction Percentage	-89%	-86%	-83%	-75%	-61%	-52%	-46%

In accordance with DEP Guidance for MRC facilities, the 2-yr post developed rates leaving the rate control basin have been reduced to the 1-yr pre-developed rate. Language in the DEP PCMS spreadsheet specifies the following:

“An applicant may take credit for volume routed to the MRC BMP up to the 2-year/24-hour storm event if the volume exceeding the 1.2-inch/2-hour storm event is designed to bypass the MRC BMP into a downstream BMP, assuming the downstream BMP reduces the post-construction 2-year/24-hour peak flow to the pre-construction 1-year/24-hour peak flow associated with the MRC.”

Stormwater Conveyance Calculations

Stormpipes

Stormwater conveyance has been calculated by utilizing the ***Rational Methodology for the 100-yr storm event. All rainfall intensity data used in the design calculations were obtained from NOAA Atlas 14 data as recommended by the PA BMP Manual.*** The starting water surface elevation in BMP's was taken as the top of berm elevation to be conservative. The design incorporates flows leaving the stormwater facilities and entering the conveyance networks and has been taken from the HydroCAD modeling which utilized the SCS Methodology.

Roof leader sizing was completed using the rational method and manning's equation.

Conclusions:

It is our professional opinion, as outlined above and as shown in the enclosed supporting calculations, that the proposed site development will not have a detrimental impact on downstream property owners or existing waters of the Commonwealth after the stormwater management facility is constructed and is properly maintained. The proposed design will retain and filter the required amount of stormwater runoff volume to comply with both Township and PADEP requirements.

Soils Data



United States
Department of
Agriculture

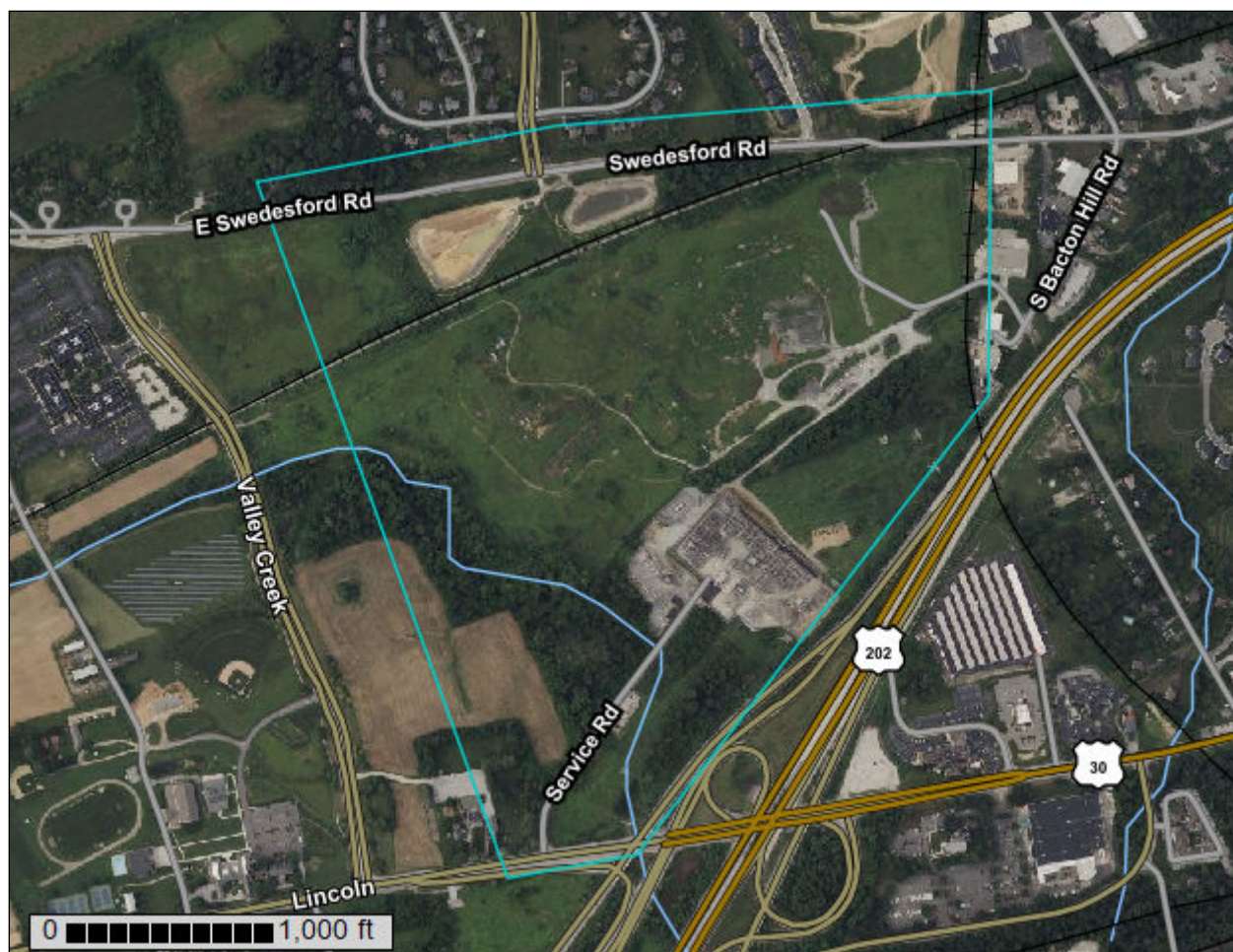
NRCS

Natural
Resources
Conservation
Service

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

Custom Soil Resource Report for Chester County, Pennsylvania

Data Center



Preface

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

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

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

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

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

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

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Soil Map

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

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Chester County, Pennsylvania
Survey Area Data: Version 16, Sep 4, 2023

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

Date(s) aerial images were photographed: Jun 3, 2022—Jul 20, 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
CtA	Conestoga silt loam, 0 to 3 percent slopes	14.7	7.4%
CtB	Conestoga silt loam, 3 to 8 percent slopes	106.2	53.4%
EdB	Edgemont channery loam, 3 to 8 percent slopes	9.6	4.8%
PdB	Penlaw silt loam, 3 to 8 percent slopes	4.5	2.3%
Th	Thorndale silt loam	9.5	4.8%
UrB	Urban land, 0 to 8 percent slopes	7.3	3.7%
UrgB	Urban land-Conestoga complex, 0 to 8 percent slopes	47.3	23.7%
Totals for Area of Interest		199.0	100.0%

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit

descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Chester County, Pennsylvania

CtA—Conestoga silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: pjhy
Elevation: 300 to 1,600 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 140 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Conestoga

Setting

Landform: Hillsides
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from schist and/or residuum weathered from limestone

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 38 inches: silty clay loam
C - 38 to 75 inches: channery loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 60 to 99 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F148XY026PA - Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest
Hydric soil rating: No

Minor Components

Clarksburg

Percent of map unit: 5 percent
Landform: Valley flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Hollinger

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Letort

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Duffield

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Pequea

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Penlaw

Percent of map unit: 1 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

CtB—Conestoga silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: pjJ0
Elevation: 300 to 1,600 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 140 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Conestoga

Setting

Landform: Hillsides
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone and/or residuum weathered from schist

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 38 inches: silty clay loam
C - 38 to 75 inches: channery loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 60 to 99 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F148XY026PA - Moist, High Base-Saturation, Upland, Mixed Oak
- Hickory - Conifer Forest
Hydric soil rating: No

Minor Components

Clarksburg

Percent of map unit: 5 percent
Landform: Valley flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Pequea

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Duffield

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hollinger

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Letort

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Penlaw

Percent of map unit: 1 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

EdB—Edgemont channery loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: pjcq
Elevation: 500 to 2,400 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 120 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Edgemont and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edgemont

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Residuum weathered from quartzite and/or residuum weathered from orthoquartzite

Typical profile

Ap - 0 to 8 inches: channery loam
Bt - 8 to 36 inches: channery fine sandy loam
C - 36 to 60 inches: channery sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 42 to 84 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak - Hardwood - Conifer Forest
Hydric soil rating: No

Minor Components

Buchanan

Percent of map unit: 4 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Andover

Percent of map unit: 3 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

PdB—Penlaw silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: pjks
Elevation: 300 to 1,500 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 140 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Penlaw

Setting

Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt - 9 to 18 inches: silty clay loam
Bx1 - 18 to 31 inches: silty clay
Bx2 - 31 to 58 inches: silty clay loam
C - 58 to 60 inches: silty clay loam

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 15 to 30 inches to fragipan; 40 to 72 inches to lithic bedrock

Drainage class: Somewhat poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: D

Ecological site: F148XY026PA - Moist, High Base-Saturation, Upland, Mixed Oak
- Hickory - Conifer Forest

Hydric soil rating: No

Th—Thorndale silt loam

Map Unit Setting

National map unit symbol: pjkf

Elevation: 200 to 1,000 feet

Mean annual precipitation: 32 to 48 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 120 to 200 days

Farmland classification: Not prime farmland

Map Unit Composition

Thorndale and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Thorndale

Setting

Landform: Depressions, valleys, drainageways

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Head slope, side slope

Down-slope shape: Concave, linear

Across-slope shape: Concave

Parent material: Colluvium derived from calcareous shale and/or colluvium derived from limestone and siltstone

Typical profile

Ap - 0 to 9 inches: silt loam

Btg - 9 to 27 inches: silty clay loam

Bxg - 27 to 36 inches: silt loam

C - 36 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 20 to 36 inches to fragipan; 60 to 99 inches to lithic bedrock

Drainage class: Poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: C/D

Ecological site: F148XY032PA - Hydric, High Base-Saturation, Riparian Zone, Swamp Meadow-Shrub-Forest

Hydric soil rating: Yes

UrB—Urban land, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1r3nt

Elevation: 800 to 1,500 feet

Mean annual precipitation: 36 to 46 inches

Mean annual air temperature: 41 to 62 degrees F

Frost-free period: 130 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Pavement, buildings and other artificially covered areas human transported material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Minor Components

Udorthents, unstable fill

Percent of map unit: 10 percent

Down-slope shape: Linear

Across-slope shape: Linear
Hydric soil rating: No

UrgB—Urban land-Conestoga complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: pjn7
Elevation: 300 to 1,600 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 140 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Conestoga and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Pavement, buildings and other artificially covered areas

Typical profile

C - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

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

Description of Conestoga

Setting

Landform: Hillsides
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Residuum weathered from schist and/or residuum weathered from limestone

Typical profile

Ap - 0 to 9 inches: silt loam
Bt - 9 to 40 inches: silty clay loam
C - 40 to 60 inches: loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 60 to 99 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F148XY026PA - Moist, High Base-Saturation, Upland, Mixed Oak
- Hickory - Conifer Forest
Hydric soil rating: No

Minor Components

Clarksburg

Percent of map unit: 5 percent
Landform: Valley flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Catoctin

Percent of map unit: 5 percent
Landform: Mountainsides
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hagerstown

Percent of map unit: 3 percent
Landform: Valley floors
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Custom Soil Resource Report

Penlaw

Percent of map unit: 2 percent

Landform: Swales

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Custom Soil Resource Report

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Chester County, Pennsylvania
 Survey Area Data: Version 16, Sep 4, 2023

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

Date(s) aerial images were photographed: Jun 3, 2022—Jul 20, 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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CtA	Conestoga silt loam, 0 to 3 percent slopes	B	14.7	7.4%
CtB	Conestoga silt loam, 3 to 8 percent slopes	B	106.2	53.4%
EdB	Edgemont channery loam, 3 to 8 percent slopes	A	9.6	4.8%
PdB	Penlaw silt loam, 3 to 8 percent slopes	D	4.5	2.3%
Th	Thorndale silt loam	C/D	9.5	4.8%
UrB	Urban land, 0 to 8 percent slopes		7.3	3.7%
UrgB	Urban land-Conestoga complex, 0 to 8 percent slopes		47.3	23.7%
Totals for Area of Interest			199.0	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Depth to Bedrock

The term bedrock in soil survey refers to a continuous root and water restrictive layer of rock that occurs within the soil profile.

There are many types of restrictions that can occur within the soil profile but this theme only includes the three restrictions that use the term bedrock. These are:

- 1) Lithic Bedrock
- 2) Paralithic Bedrock
- 3) Densic Bedrock

Lithic bedrock and paralithic bedrock are comprised of igneous, metamorphic, and sedimentary rocks, which are coherent and consolidated into rock through pressure, heat, cementation, or fusion. Lithic bedrock represents the hardest type of bedrock, with a hardness of strongly coherent to indurated. Paralithic bedrock has a hardness of extremely weakly coherent to moderately coherent. It can occur as a

Custom Soil Resource Report

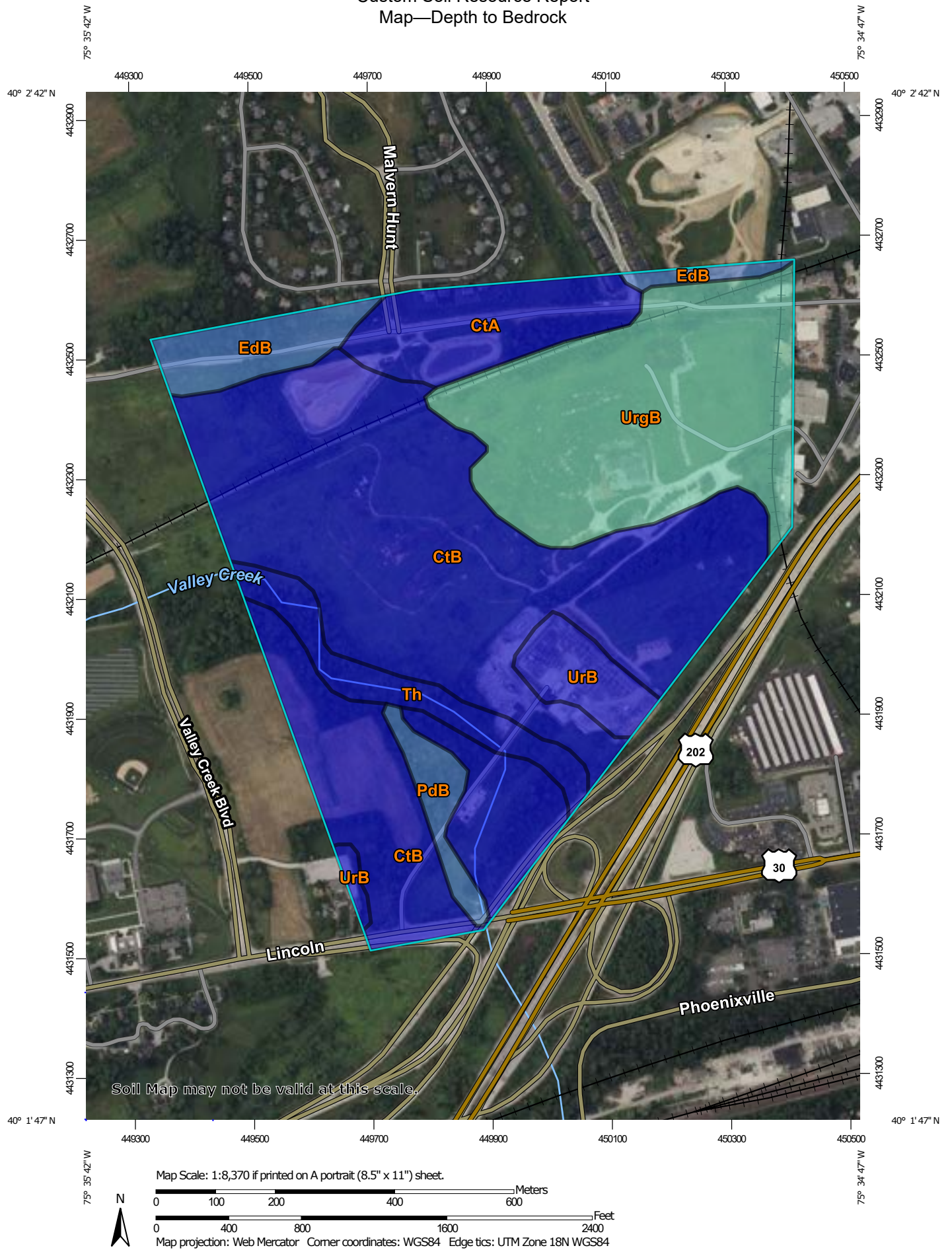
thin layer of weathered bedrock above harder lithic bedrock. Paralithic bedrock can also be much thicker, extending well below the soil profile.

Densic bedrock represents a unique kind of bedrock recognized within the soil survey. It is non-coherent and consolidated, dense root restrictive material, formed by pressure, heat, and dewatering of earth materials or sediments. Densic bedrock differs from densic materials, which formed under the compaction of glaciers, mudflows, and or human-caused compaction.

If more than one type of bedrock is described for an individual soil type, the depth to the shallowest one is given. If no bedrock is described in a map unit, it is represented by the "greater than 200" depth class.

Depth to bedrock is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report Map—Depth to Bedrock



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 0 - 25
 25 - 50
 50 - 100
 100 - 150
 150 - 200
 > 200
 Not rated or not available

Soil Rating Lines

 0 - 25
 25 - 50
 50 - 100
 100 - 150
 150 - 200
 > 200
 Not rated or not available

Soil Rating Points

 0 - 25
 25 - 50
 50 - 100
 100 - 150
 150 - 200
 > 200

 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Chester County, Pennsylvania
 Survey Area Data: Version 16, Sep 4, 2023

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

Date(s) aerial images were photographed: Jun 3, 2022—Jul 20, 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.

Table—Depth to Bedrock

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
CtA	Conestoga silt loam, 0 to 3 percent slopes	202	14.7	7.4%
CtB	Conestoga silt loam, 3 to 8 percent slopes	202	106.2	53.4%
EdB	Edgemont channery loam, 3 to 8 percent slopes	158	9.6	4.8%
PdB	Penlaw silt loam, 3 to 8 percent slopes	183	4.5	2.3%
Th	Thorndale silt loam	201	9.5	4.8%
UrB	Urban land, 0 to 8 percent slopes	>200	7.3	3.7%
UrgB	Urban land-Conestoga complex, 0 to 8 percent slopes	138	47.3	23.7%
Totals for Area of Interest			199.0	100.0%

Rating Options—Depth to Bedrock*Units of Measure:* centimeters*Aggregation Method:* Dominant Component*Component Percent Cutoff:* None Specified*Tie-break Rule:* Lower*Interpret Nulls as Zero:* No

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Custom Soil Resource Report

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Rainfall Data



NOAA Atlas 14, Volume 2, Version 3
Location name: Exton, Pennsylvania, USA*
Latitude: 40.0404°, Longitude: -75.5966°
Elevation: 372.85 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.350 (0.321-0.382)	0.417 (0.383-0.455)	0.487 (0.446-0.531)	0.536 (0.490-0.585)	0.592 (0.538-0.645)	0.630 (0.569-0.686)	0.666 (0.600-0.727)	0.698 (0.624-0.762)	0.732 (0.650-0.802)	0.757 (0.667-0.832)
10-min	0.559 (0.513-0.610)	0.667 (0.612-0.728)	0.780 (0.713-0.851)	0.857 (0.783-0.935)	0.943 (0.858-1.03)	1.00 (0.906-1.09)	1.06 (0.953-1.16)	1.11 (0.990-1.21)	1.16 (1.03-1.27)	1.19 (1.05-1.31)
15-min	0.698 (0.641-0.763)	0.839 (0.769-0.916)	0.987 (0.903-1.08)	1.08 (0.991-1.18)	1.20 (1.09-1.30)	1.27 (1.15-1.38)	1.34 (1.21-1.46)	1.40 (1.25-1.53)	1.46 (1.29-1.60)	1.50 (1.32-1.64)
30-min	0.958 (0.879-1.05)	1.16 (1.06-1.26)	1.40 (1.28-1.53)	1.57 (1.44-1.71)	1.77 (1.61-1.93)	1.91 (1.73-2.08)	2.05 (1.85-2.24)	2.17 (1.94-2.37)	2.32 (2.06-2.54)	2.42 (2.14-2.66)
60-min	1.19 (1.10-1.30)	1.45 (1.33-1.59)	1.80 (1.64-1.96)	2.05 (1.87-2.23)	2.36 (2.14-2.57)	2.59 (2.34-2.82)	2.82 (2.54-3.08)	3.05 (2.73-3.33)	3.33 (2.95-3.64)	3.54 (3.12-3.89)
2-hr	1.42 (1.29-1.57)	1.73 (1.57-1.91)	2.15 (1.95-2.37)	2.47 (2.24-2.72)	2.89 (2.60-3.18)	3.23 (2.88-3.55)	3.55 (3.16-3.91)	3.89 (3.43-4.28)	4.33 (3.78-4.77)	4.67 (4.03-5.16)
3-hr	1.55 (1.41-1.71)	1.88 (1.71-2.07)	2.34 (2.12-2.58)	2.69 (2.44-2.97)	3.16 (2.84-3.47)	3.52 (3.14-3.87)	3.88 (3.45-4.27)	4.25 (3.74-4.68)	4.74 (4.13-5.23)	5.11 (4.41-5.65)
6-hr	1.91 (1.74-2.12)	2.31 (2.10-2.56)	2.87 (2.60-3.17)	3.32 (3.00-3.67)	3.94 (3.54-4.34)	4.44 (3.96-4.89)	4.97 (4.39-5.46)	5.51 (4.82-6.06)	6.26 (5.39-6.91)	6.86 (5.83-7.58)
12-hr	2.32 (2.11-2.60)	2.80 (2.54-3.13)	3.50 (3.17-3.90)	4.08 (3.67-4.54)	4.91 (4.38-5.44)	5.60 (4.95-6.19)	6.35 (5.55-7.03)	7.15 (6.17-7.91)	8.30 (7.02-9.20)	9.25 (7.69-10.3)
24-hr	2.69 (2.46-2.95)	3.24 (2.96-3.55)	4.06 (3.71-4.45)	4.74 (4.32-5.19)	5.73 (5.19-6.26)	6.55 (5.91-7.15)	7.44 (6.68-8.11)	8.40 (7.49-9.14)	9.79 (8.64-10.7)	10.9 (9.57-11.9)
2-day	3.11 (2.84-3.43)	3.76 (3.43-4.14)	4.71 (4.30-5.19)	5.49 (4.99-6.04)	6.60 (5.97-7.24)	7.50 (6.77-8.24)	8.47 (7.60-9.30)	9.50 (8.47-10.4)	11.0 (9.69-12.1)	12.2 (10.7-13.4)
3-day	3.28 (3.00-3.62)	3.96 (3.61-4.37)	4.95 (4.52-5.46)	5.76 (5.24-6.35)	6.91 (6.26-7.59)	7.85 (7.08-8.62)	8.85 (7.95-9.72)	9.92 (8.85-10.9)	11.4 (10.1-12.6)	12.7 (11.1-13.9)
4-day	3.45 (3.15-3.81)	4.16 (3.80-4.59)	5.20 (4.74-5.73)	6.04 (5.49-6.65)	7.23 (6.55-7.95)	8.20 (7.40-9.01)	9.24 (8.29-10.1)	10.3 (9.22-11.3)	11.9 (10.5-13.1)	13.2 (11.6-14.5)
7-day	4.03 (3.71-4.41)	4.83 (4.45-5.29)	5.98 (5.49-6.54)	6.91 (6.34-7.55)	8.24 (7.53-8.99)	9.35 (8.49-10.2)	10.5 (9.50-11.4)	11.8 (10.6-12.8)	13.5 (12.0-14.7)	15.0 (13.2-16.3)
10-day	4.59 (4.25-4.97)	5.48 (5.07-5.94)	6.68 (6.17-7.24)	7.64 (7.04-8.27)	8.97 (8.24-9.71)	10.1 (9.21-10.9)	11.2 (10.2-12.1)	12.3 (11.2-13.3)	13.9 (12.6-15.1)	15.2 (13.6-16.5)
20-day	6.20 (5.77-6.68)	7.35 (6.84-7.92)	8.77 (8.15-9.44)	9.88 (9.18-10.6)	11.4 (10.6-12.2)	12.6 (11.6-13.5)	13.7 (12.7-14.8)	14.9 (13.7-16.0)	16.5 (15.1-17.8)	17.7 (16.1-19.1)
30-day	7.71 (7.25-8.20)	9.09 (8.54-9.67)	10.6 (9.95-11.3)	11.8 (11.0-12.5)	13.3 (12.4-14.1)	14.4 (13.5-15.4)	15.6 (14.5-16.6)	16.7 (15.5-17.8)	18.1 (16.8-19.3)	19.2 (17.7-20.5)
45-day	9.78 (9.25-10.4)	11.5 (10.9-12.2)	13.2 (12.5-14.0)	14.5 (13.7-15.3)	16.1 (15.2-17.1)	17.3 (16.3-18.4)	18.5 (17.4-19.6)	19.5 (18.4-20.7)	20.9 (19.6-22.1)	21.8 (20.4-23.2)
60-day	11.7 (11.1-12.4)	13.7 (13.0-14.5)	15.7 (14.9-16.5)	17.1 (16.2-18.0)	18.9 (17.9-19.9)	20.2 (19.1-21.3)	21.4 (20.2-22.6)	22.5 (21.3-23.8)	23.9 (22.5-25.3)	24.9 (23.4-26.3)

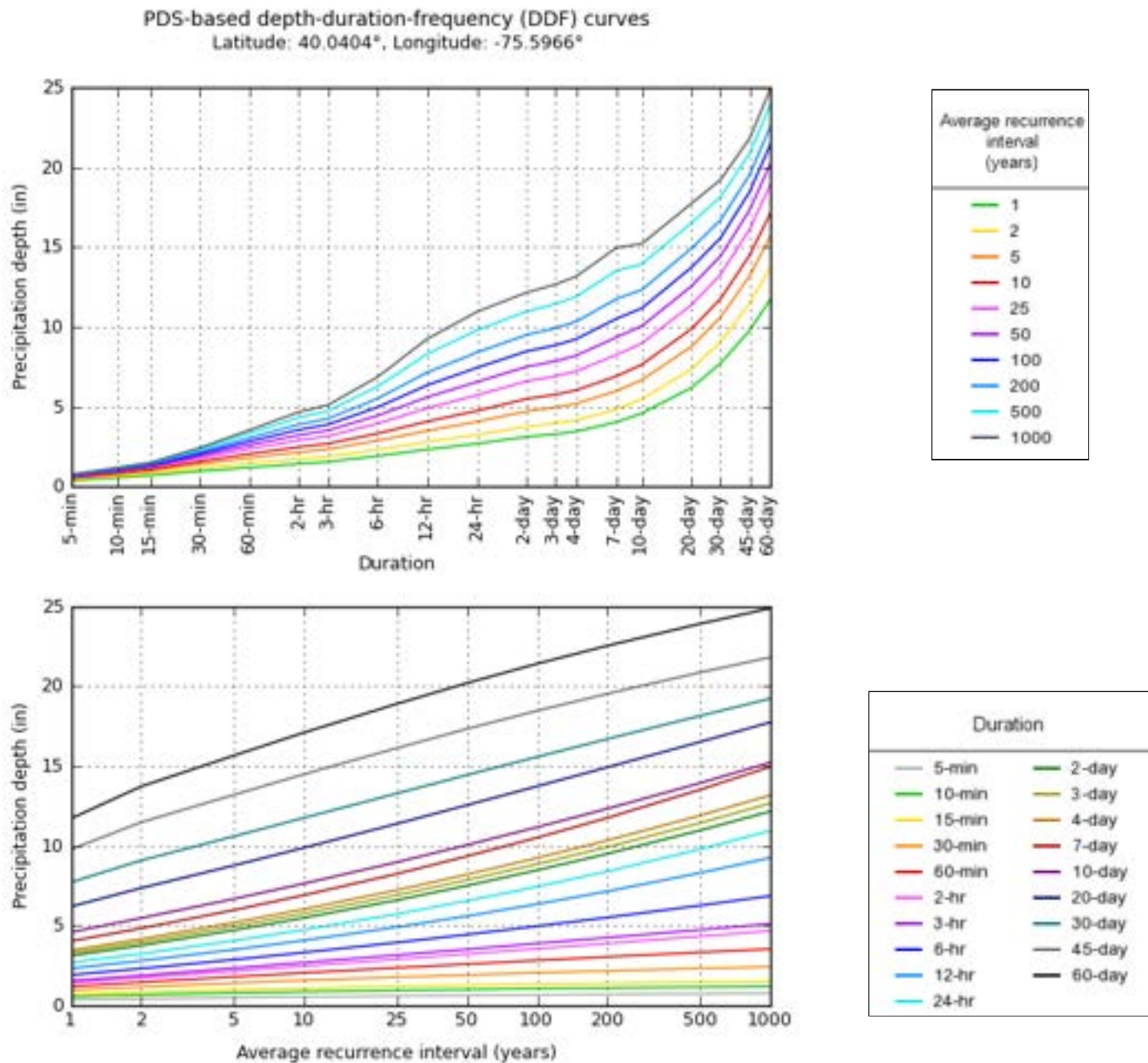
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Apr 14 14:25:09 2020

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Maps & aerials

Small scale terrain



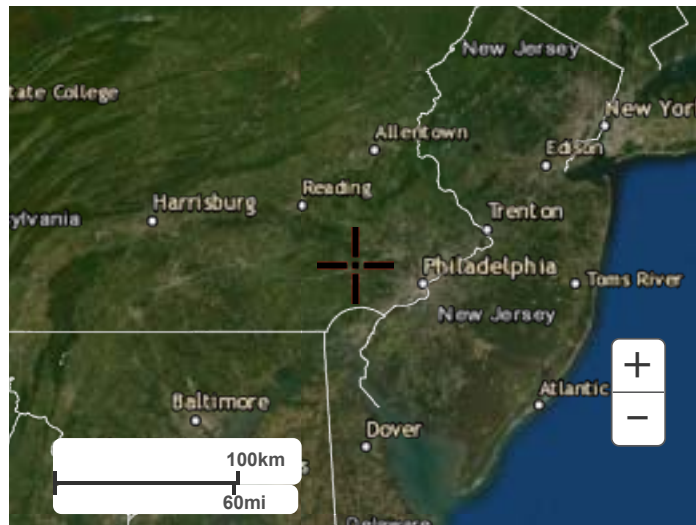
Large scale terrain



Large scale map



Large scale aerial

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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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VOLUME AND WATER QUALITY CALCULATIONS

PA DEP PCSM Spreadsheet

General Information

Instructions

General

Volume

Rate

Quality

Project Name: **Data Centers**

Application Type: **PAG-02 NOI**

County: **Chester**

Municipality: **East Whiteland Township**

Project Type: **Redevelopment**

☒ New Project ☐ Minor / Major Amendment

Area: **58.78** acres
(In Watershed)

Total Earth Disturbance: **54.98** acres
(In Watershed)

No. of Post-Construction Discharge Points: **1**

Start DP Numbering at: **001**

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	51.71	48.81	26.52	24.97	Valley Creek	CWF, MF	Yes
Undetained Areas	7.07	6.17	0.99	0.61	Valley Creek	CWF, MF	
Totals:	58.78	54.98	27.51	25.58			

Volume Management

Project: Data Centers

Instructions General **Volume** Rate Quality

2-Year / 24-Hour Storm Event (NOAA Atlas 14): 3.24 inches Alternative 2-Year / 24-Hour Storm Event inches

Alternative Source:

Pre-Construction Conditions:

No. Rows: 3

☐ Exempt from Meadow in Good Condition ☐ Automatically Calculate CN, Ia, Runoff and Volume

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	27.47	B	58	1.448	0.36	35,438
Impervious as Meadow	5.50	B	58	1.448	0.36	7,098
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	22.01	B	98	0.041	3.01	240,232

TOTAL (ACRES): 54.98

TOTAL (CF): 282,768

Post-Construction Conditions:

No. Rows: 2

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	33.12	B	98	0.041	3.01	361,559
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	21.86	B	61	1.279	0.46	36,536

TOTAL (ACRES): 54.98

TOTAL (CF): 398,095

IET CHANGE IN VOLUME TO MANAGE (CF): 115,327

Non-Structural BMP Volume Credits:

☐ Tree Planting Credit

☐ Other (attach calculations):

Structural BMP Volume Credits:

No. Structural BMPs:

9

Start BMP Numbering at:

1

DP No.	BMP No.	BMP Name	MRC	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegetated?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
001	1	Wet Pond / Retention Basin	-	Off-Site	14.11	64,442	0	0.00		Yes		0		
001	2	Rain Garden / Bioretention	Y	Off-Site	8.22	64,747	7,500	0.00		Yes	1.0	20,991		2,303
001	3	Rain Garden / Bioretention	Y	Off-Site	6.18	49,183	7,500	0.00		Yes	1.0	15,629		2,303
001	4	Rain Garden / Bioretention	Y	Off-Site	11.20	67,625	10,000	0.00		Yes	1.0	19,755		3,070
001	5	Rain Garden / Bioretention	Y	Off-Site	9.04	64,536	10,000	0.00		Yes	1.0	20,222		3,070
	6													
	7													
	8													
	9													

Totals: 10,745

INFILTRATION & ET CREDITS (CF): 10,745

MANAGED RELEASE CREDIT (CF): 235,346

NET CHANGE IN VOLUME TO MANAGE (CF): 115,327

TOTAL CREDITS (CF): 246,091

VOLUME REQUIREMENT SATISFIED

Rate Control

Project: Data Centers

- Instructions General Volume **Rate** Quality

Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):

3.24

NOAA 10-Year 24-Hour Storm Event (in):

NOAA 50-Year 24-Hour Storm Event (in):

NOAA 100-Year 24-Hour Storm Event (in):

Alternative 2-Year 24-Hour Storm Event (in):

Alternative 10-Year 24-Hour Storm Event (in):

Alternative 50-Year 24-Hour Storm Event (in):

Alternative 100-Year 24-Hour Storm Event (in):

☐ Report Summary of Peak Rates Only

☐ Time of Concentration (Tc) - Pre-Construction

☐ Use Default (0.1 hr)

☐ Time of Concentration (Tc) - Post-Construction

☐ Use Default (0.1 hr)

☐ Sheet Flow

☐ Shallow Concentrated Flow

☐ Channel Flow

Tc, 2-Year Storm (hr):

Tc, 2-Year Storm (min):

Tc, 10-Year Storm (hr):

Tc, 10-Year Storm (min):

Tc, 50-Year Storm (hr):

Tc, 50-Year Storm (min):

Tc, 100-Year Storm (hr):

Tc, 100-Year Storm (min):

Peak Rate Analysis:

	Pre-Construction	Post-Construction without BMPs
<i>Disturbed Area (mi²)</i>	0.086	0.086
	<i>Runoff Depth (inches)</i>	
2-Year Storm:	1.30	1.66
10-Year Storm:		
50-Year Storm:		
100-Year Storm:		
	<i>Unit Peak Discharge (csm/in)</i>	
2-Year Storm:		
10-Year Storm:		
50-Year Storm:		
100-Year Storm:		
	<i>Peak Discharge Rate (cfs)</i>	
2-Year Storm:		
10-Year Storm:		
50-Year Storm:		
100-Year Storm:		

Water Quality

Project: Data Centers

PRINT

Instructions

General

Volume

Rate

Quality

Pre-Construction Pollutant Loads:

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Pervious as Meadow	Grassland/Herbaceous	27.47	B	35,438	48.8	0.22	2.30	107.99	0.49	5.09
Impervious as Meadow	Grassland/Herbaceous	5.50	B	7,098	48.8	0.22	2.30	21.63	0.10	1.02
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	22.01	B	240,232	65.0	0.29	2.05	975.05	4.35	30.75
TOTAL (ACRES):		54.98			TOTALS:			#####	4.93	36.86

Post-Construction Pollutant Loads (without BMPs):

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	33.12	B	361,559	65.0	0.29	2.05	#####	6.55	46.28
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	21.86	B	36,536	78.0	0.25	1.25	177.95	0.57	2.85

TOTAL (ACRES): 54.98

TOTALS: ##### 7.12 49.13

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS): **540.77** **2.18** **12.27**☐ Characterize Undetained Areas (for Untreated Stormwater)

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)

Non-Structural BMP Water Quality Credits:

☐ Pervious Undetained Area Credit☐ Other (attach calculations)

Structural BMP Water Quality Credits:

☐ Use default BMP Outflows and Median BMP Outflow Concentrations

DP No.	BMP No.	BMP Name	MRC?	BMP DA (acres)	Vol. Routed to BMP (CF)	Inf. & ET Credits (CF)	Capture & Buffer Credits (CF)	Outflow (CF)	Outflow Conc. (mg/L)			Pollutant Loads (lbs)		
									TSS	TP	TN	TSS	TP	TN
001	1	Wet Pond / Retention Basin	-	14.11	64,442			64,442	12.00	0.12	1.20	48.29	0.48	4.83
001	2	Rain Garden / Bioretention	Y	8.22	64,747	2,303		62,445	-	-	-	-	-	-
001	3	Rain Garden / Bioretention	Y	6.18	49,183	2,303		46,881	-	-	-	-	-	-
001	4	Rain Garden / Bioretention	Y	11.20	67,625	3,070		64,555	-	-	-	-	-	-
001	5	Rain Garden / Bioretention	Y	9.04	64,536	3,070		61,466	-	-	-	-	-	-

	6													
	7													
	8													
	9													

	TSS	TP	TN
POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):	48.29	0.48	4.83
POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):	361.92	1.57	10.81
NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):			
NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):	410.20	2.05	15.64
POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):	#####	4.93	36.86

WATER QUALITY REQUIREMENT SATISFIED

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) 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 further certify that the structure, function, and calculations contained in this spreadsheet have not been modified in comparison to the spreadsheet DEP has posted to its website or, if modifications were made, an explanation of the modifications made is attached to this spreadsheet.

SED

Spreadsheet User Name

12/1/2025

Date

MRC Design Summary Sheets (RESERVED)

MRC Release Rates and 2-yr Volume (RESERVED)

Dewatering Hydrographs (RESERVED)

MRC Stage Storage Tables

2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

Prepared by S. Deisher, P.E. of JMR Engineering, LLC

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

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Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

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Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

**MRC Rain
Garden
Underdrain Flow
(RESERVED)**

STORMWATER MANAGEMENT MODELLING CALCULATIONS

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2025-1201 SCS

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2025-1201 SCS

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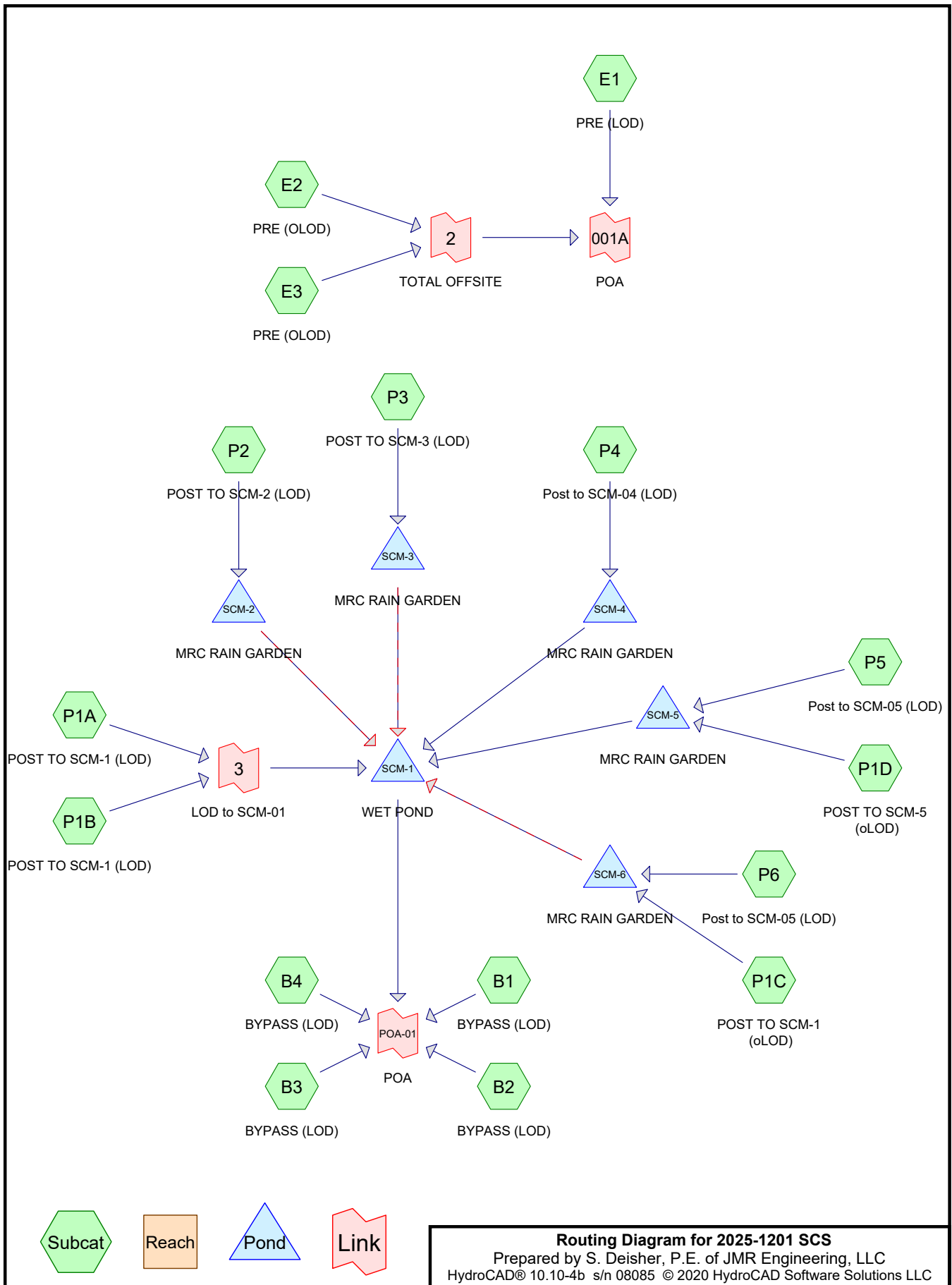
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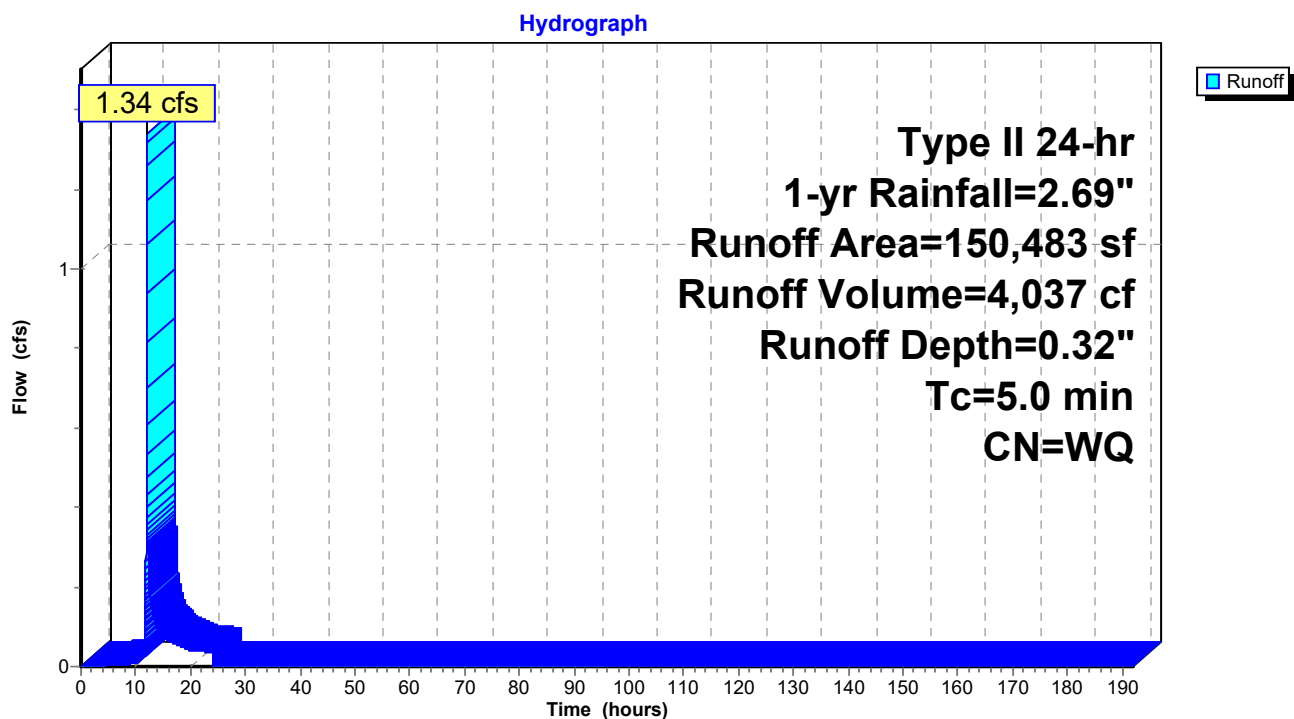
Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 1.34 cfs @ 11.99 hrs, Volume= 4,037 cf, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
* 4,557	98	Impervious
145,926	61	>75% Grass cover, Good, HSG B
150,483		Weighted Average
145,926	61	96.97% Pervious Area
4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Summary for Subcatchment B2: BYPASS (LOD)

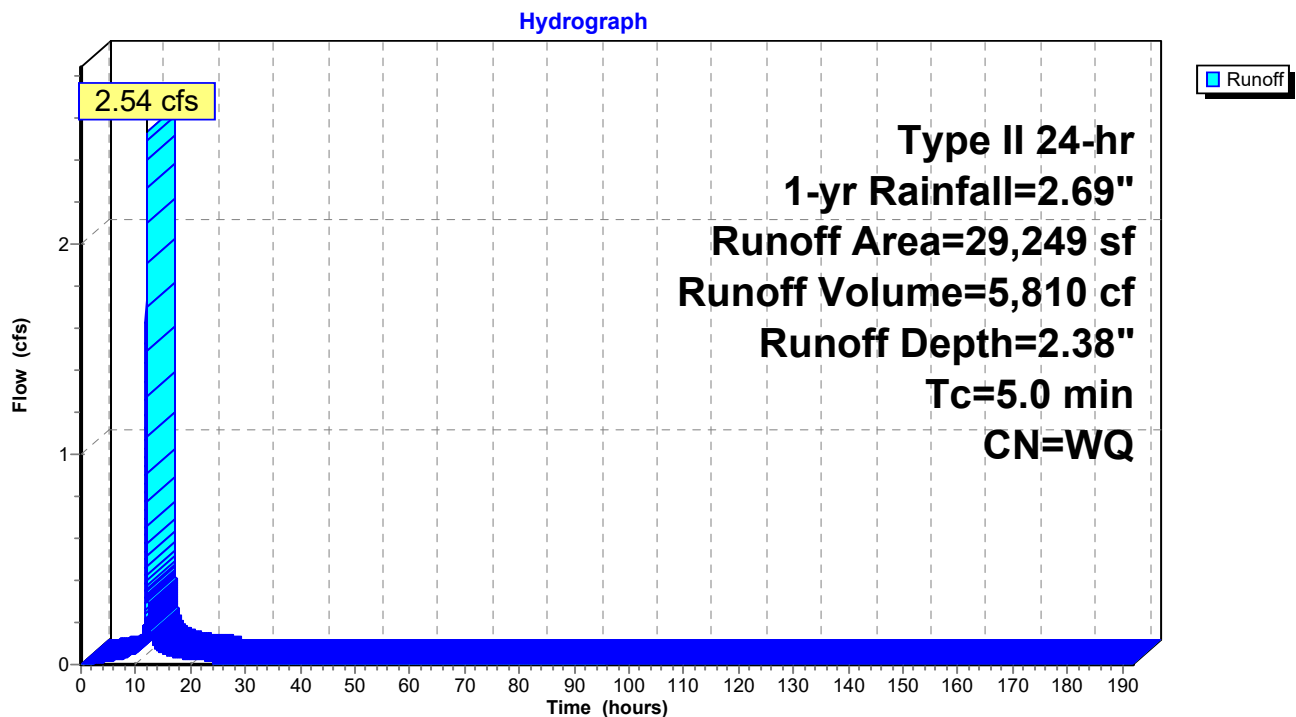
Runoff = 2.54 cfs @ 11.96 hrs, Volume= 5,810 cf, Depth= 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)



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Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 0.54 cfs @ 11.99 hrs, Volume= 1,683 cf, Depth= 0.28"

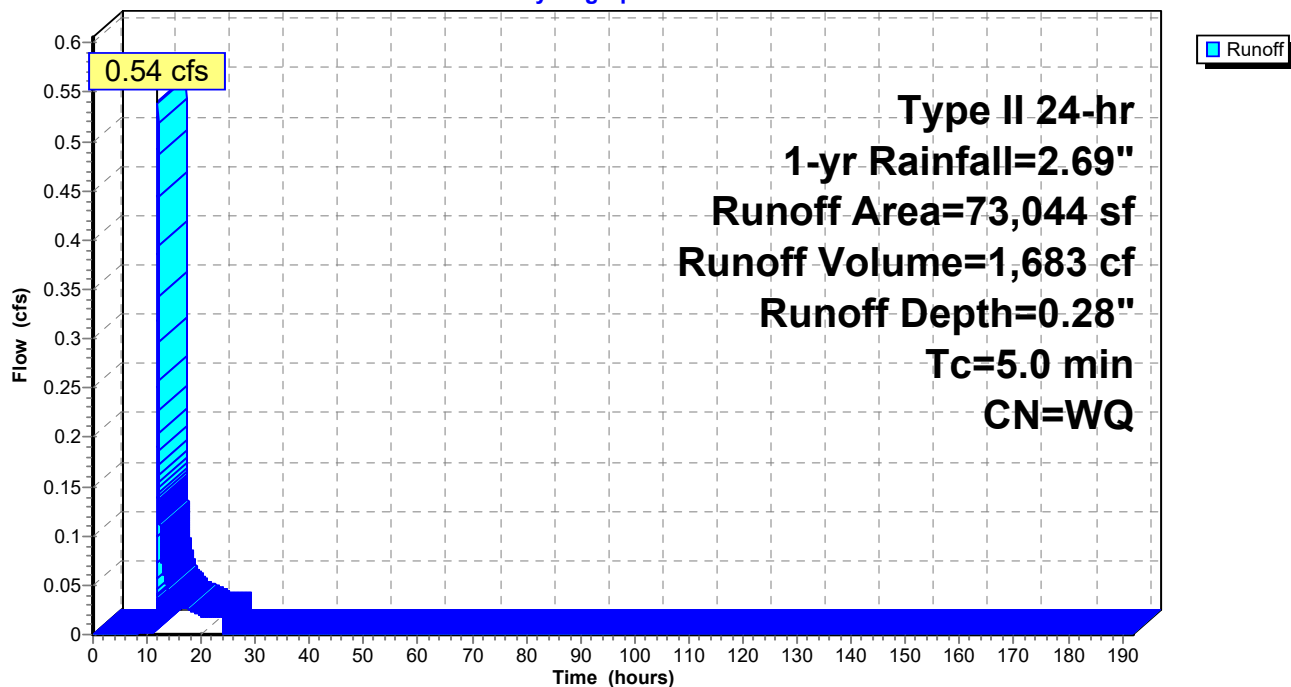
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Hydrograph



Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.28 cfs @ 11.96 hrs, Volume= 672 cf, Depth= 1.40"

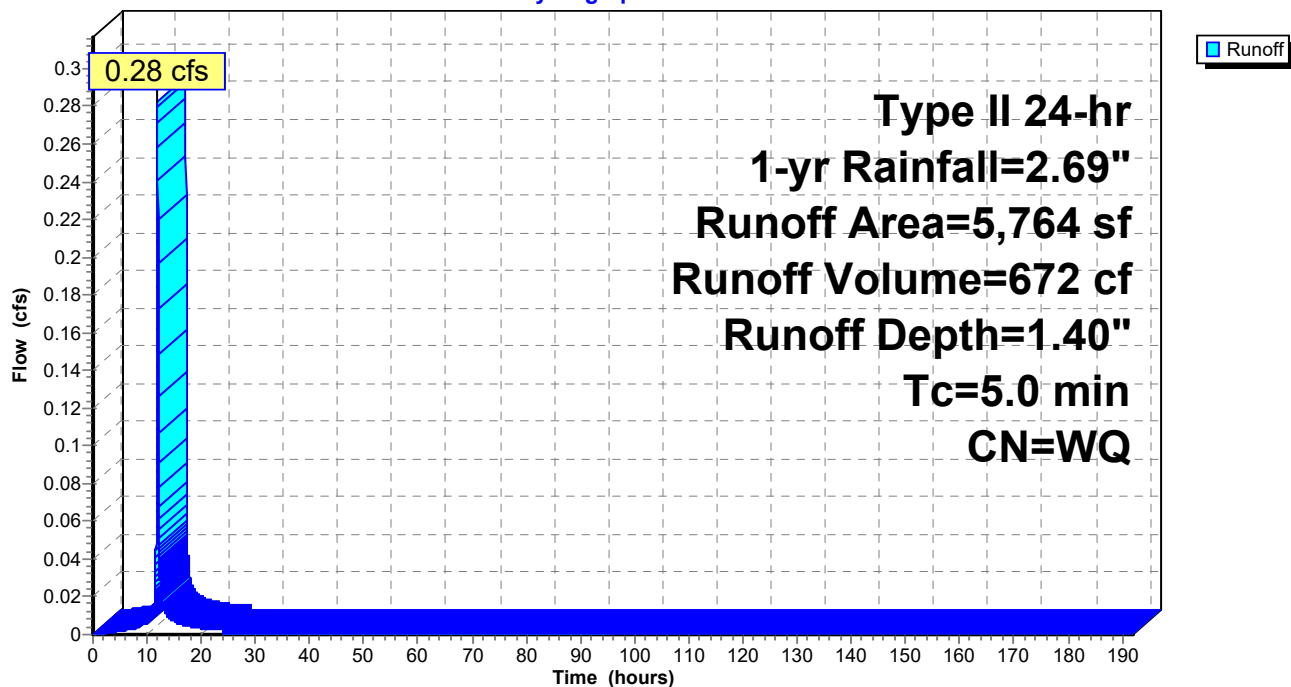
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 42.45 cfs @ 12.24 hrs, Volume= 219,059 cf, Depth= 1.07"

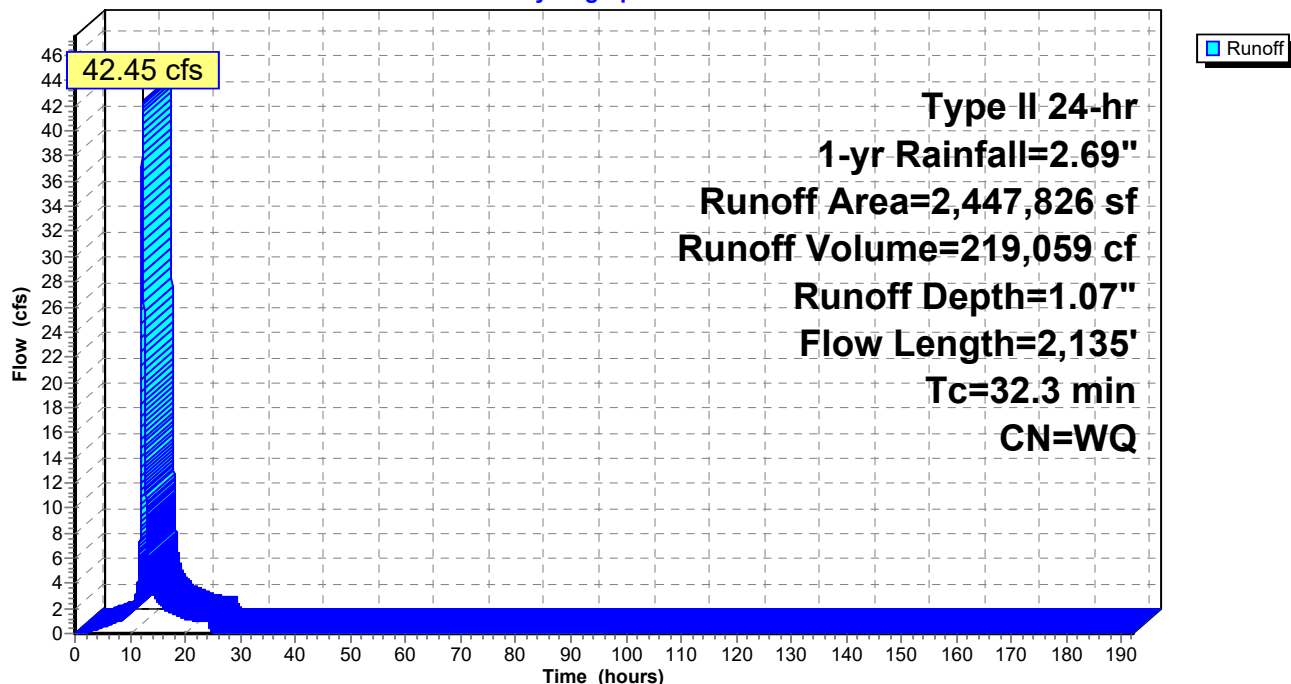
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment E2: PRE (OLOD)

Runoff = 0.28 cfs @ 12.38 hrs, Volume= 2,529 cf, Depth= 0.26"

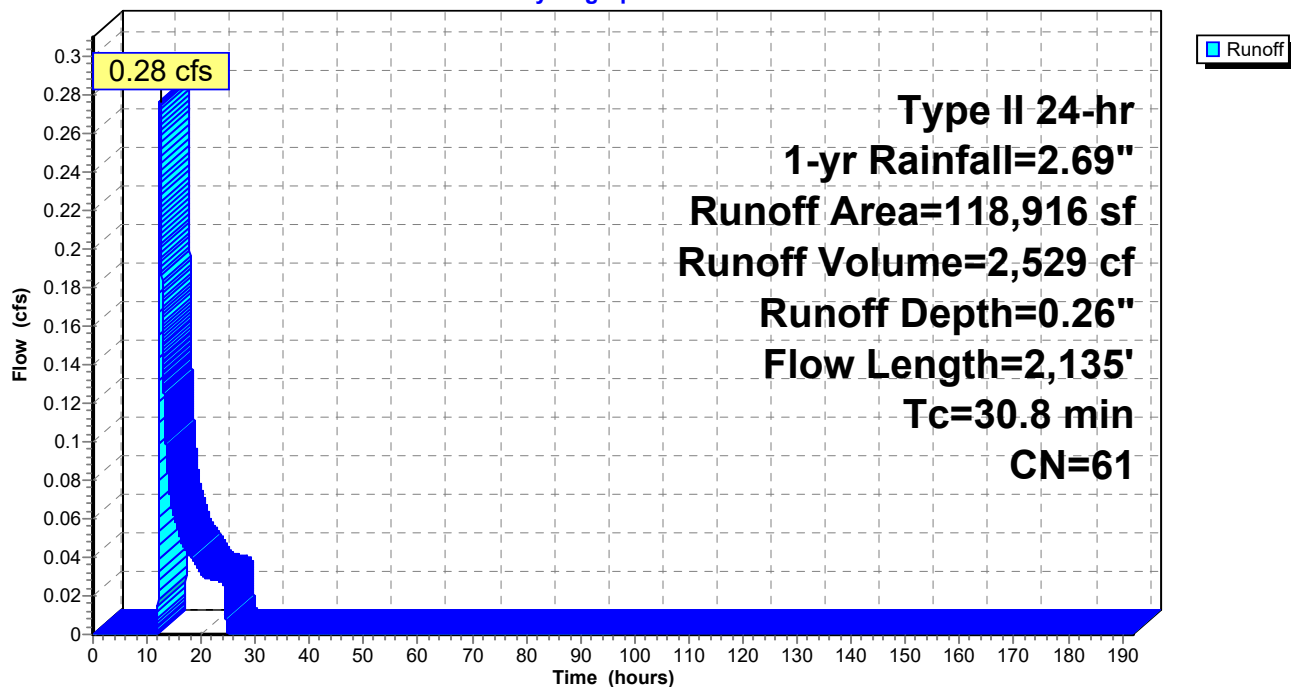
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 4.19 cfs @ 12.25 hrs, Volume= 24,010 cf, Depth= 0.55"

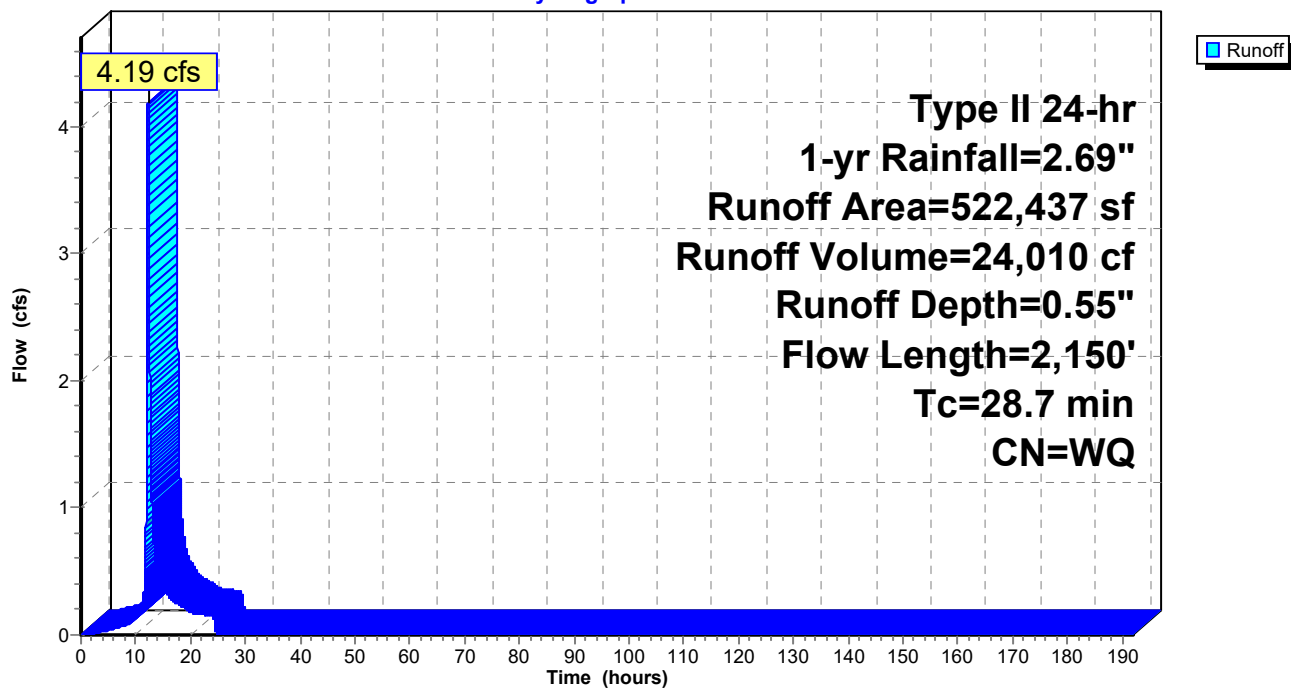
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



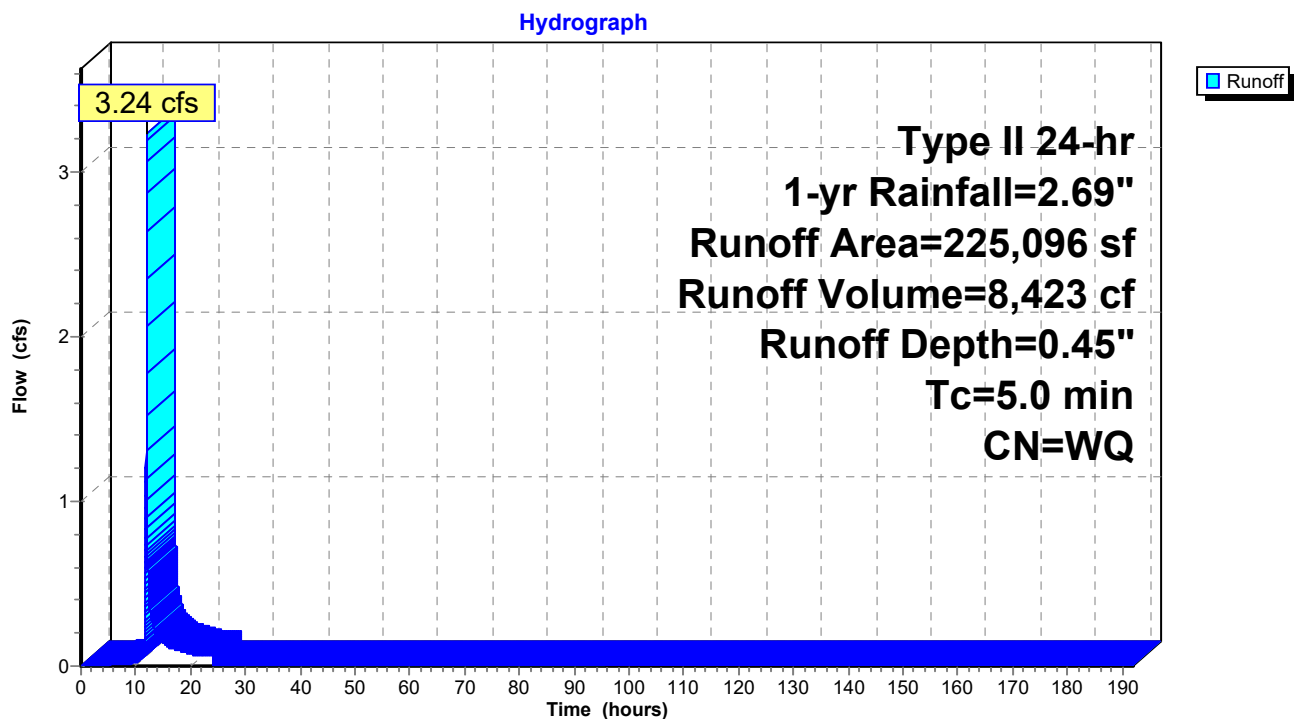
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 3.24 cfs @ 11.98 hrs, Volume= 8,423 cf, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 8.67 cfs @ 11.96 hrs, Volume= 19,809 cf, Depth= 2.46"

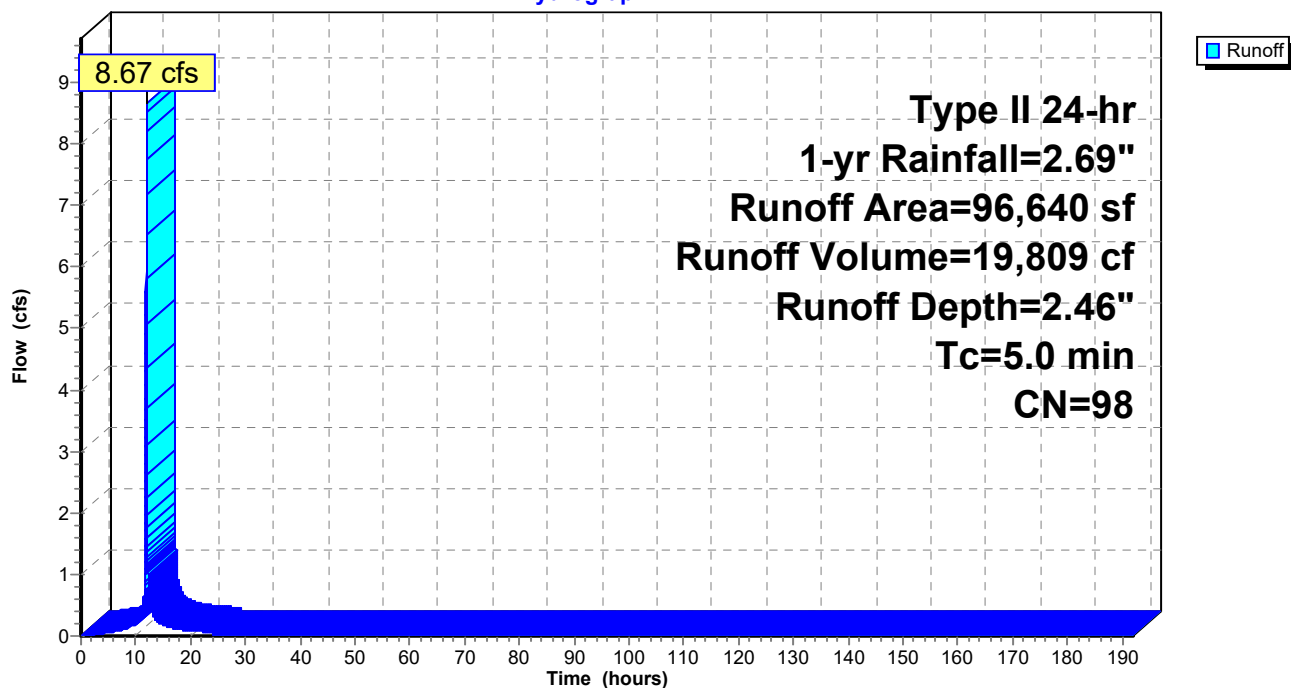
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 8.89 cfs @ 11.97 hrs, Volume= 24,010 cf, Depth= 0.55"

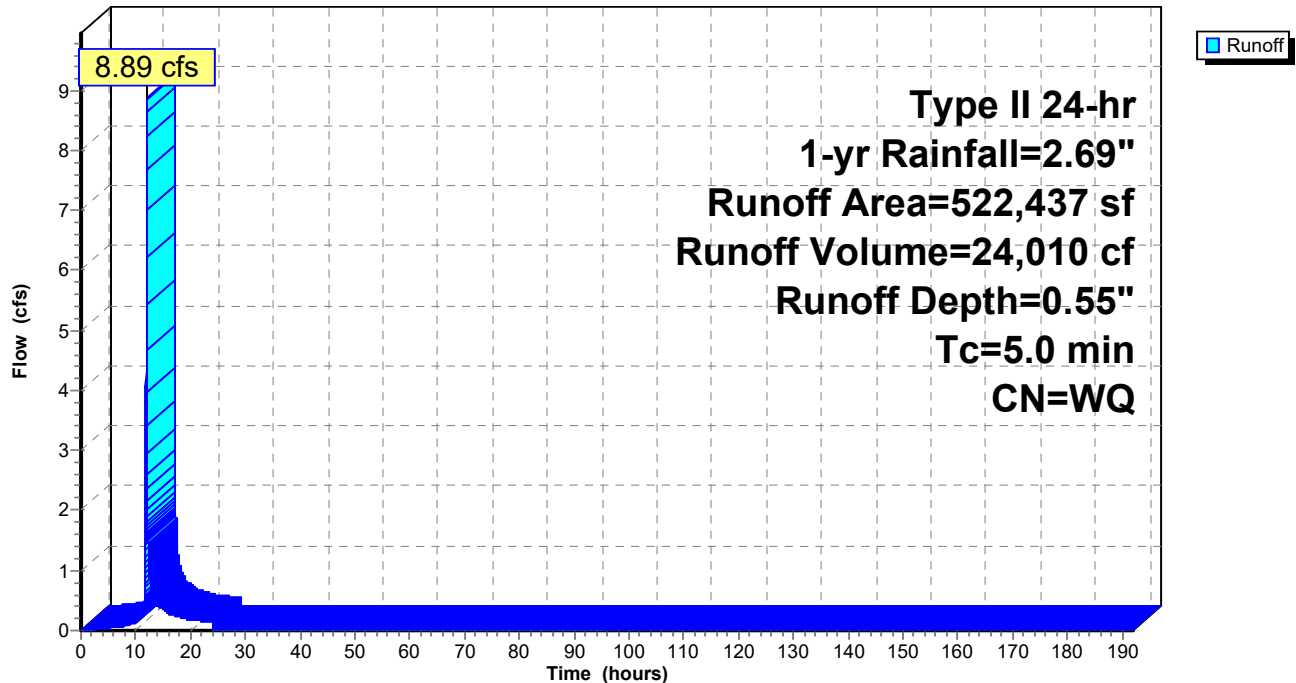
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 0.80 cfs @ 12.00 hrs, Volume= 2,529 cf, Depth= 0.26"

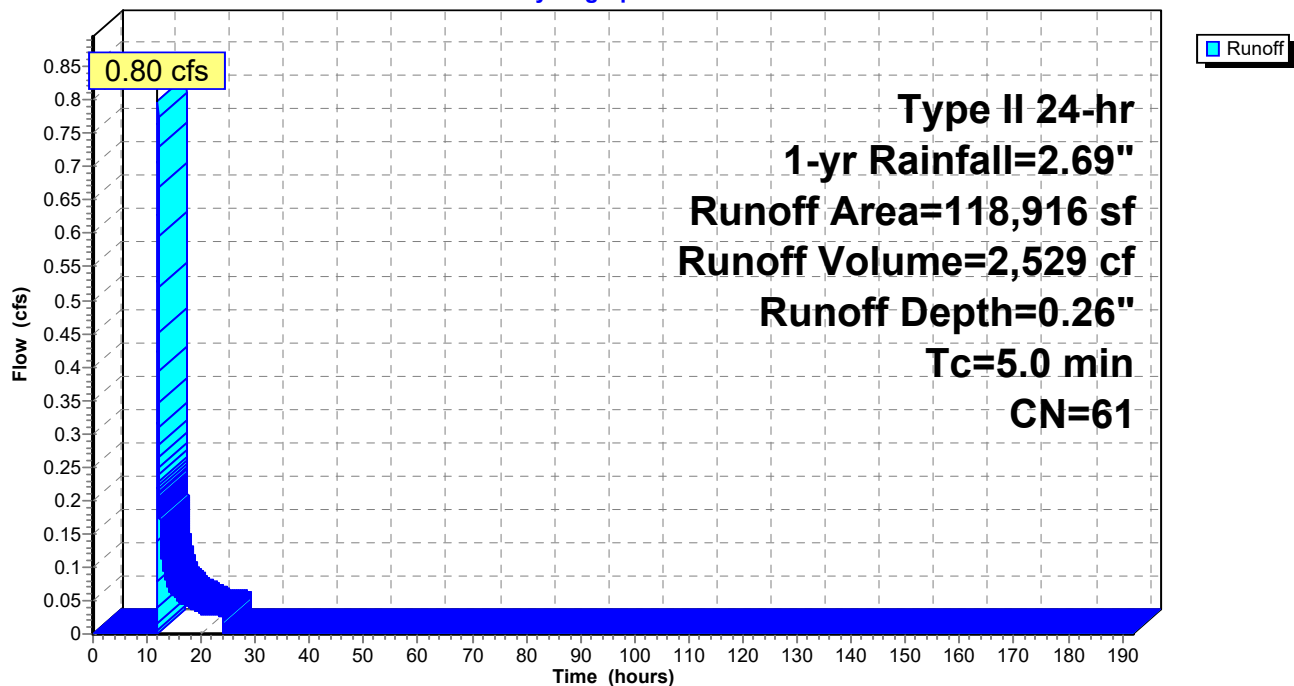
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Hydrograph



Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 25.97 cfs @ 11.96 hrs, Volume= 59,774 cf, Depth= 2.17"

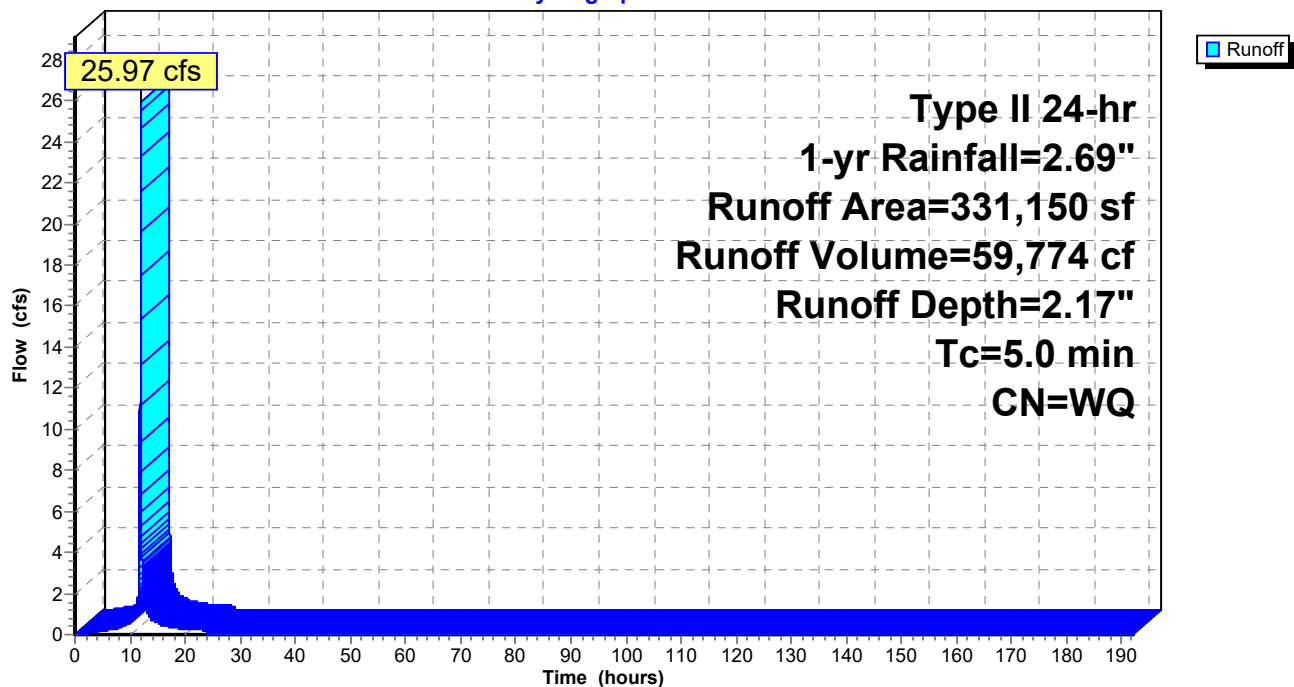
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 23.41 cfs @ 11.96 hrs, Volume= 53,020 cf, Depth= 1.89"

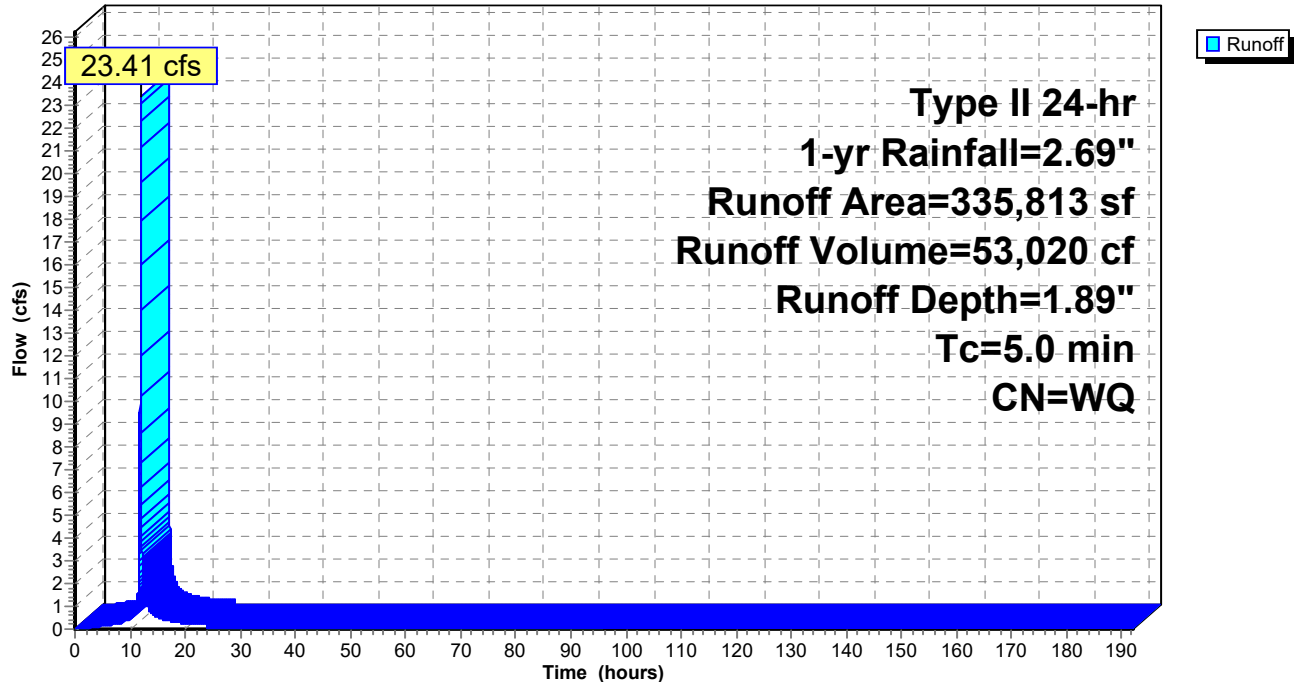
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
	57,394	61	>75% Grass cover, Good, HSG B
*	188,667	98	Building
*	19,774	98	Impervious
*	13,923	98	Generators
*	56,055	85	Gravel
	335,813		Weighted Average
	113,449	73	33.78% Pervious Area
	222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 36.36 cfs @ 11.96 hrs, Volume= 82,664 cf, Depth= 2.00"

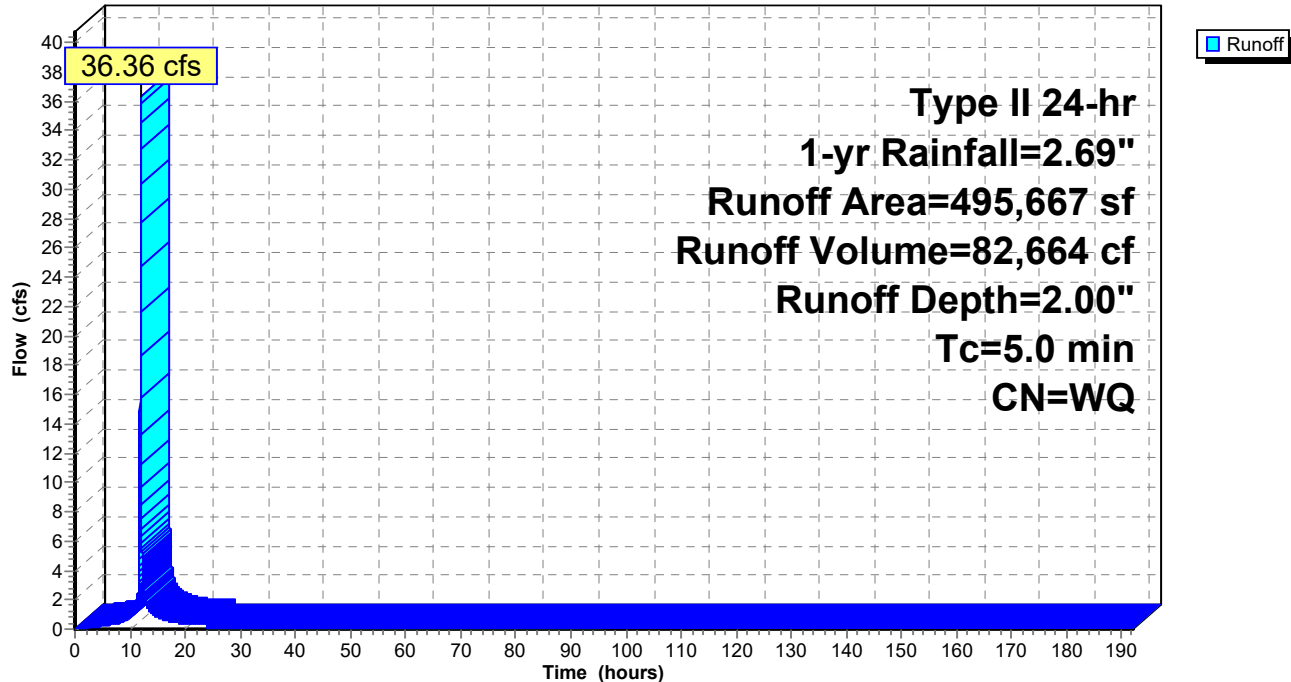
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.69"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 28.57 cfs @ 11.96 hrs, Volume= 64,182 cf, Depth= 1.69"

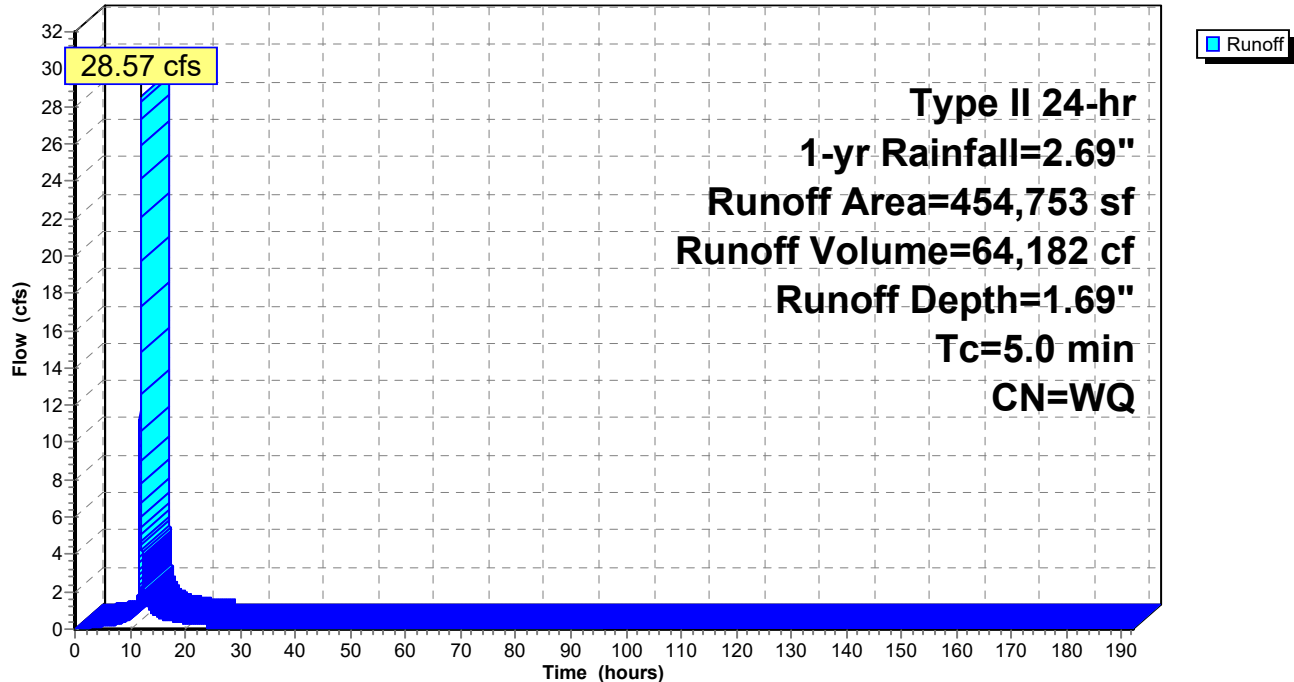
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



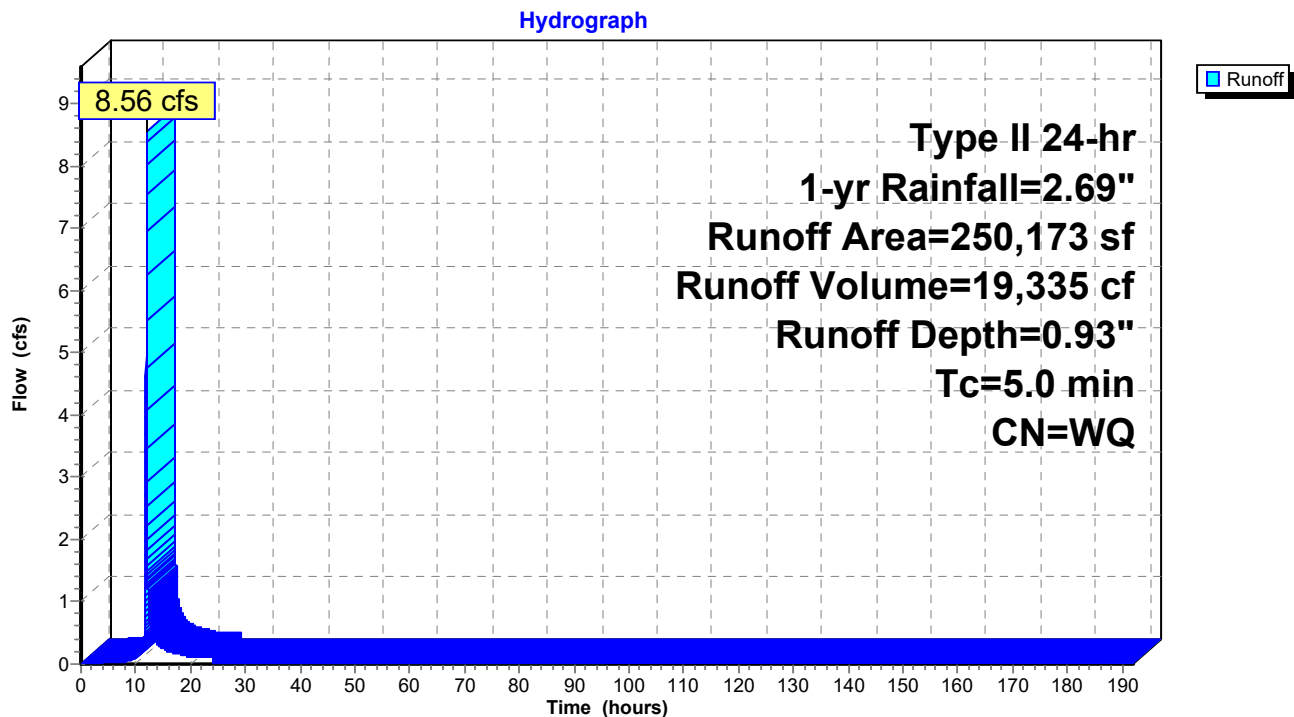
Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 8.56 cfs @ 11.97 hrs, Volume= 19,335 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.69"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 1.25" for 1-yr event
 Inflow = 12.05 cfs @ 11.96 hrs, Volume= 295,659 cf
 Outflow = 3.56 cfs @ 15.30 hrs, Volume= 288,749 cf, Atten= 70%, Lag= 200.3 min
 Primary = 3.56 cfs @ 15.30 hrs, Volume= 288,749 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 355.60' @ 15.30 hrs Surf.Area= 72,572 sf Storage= 42,564 cf

Plug-Flow detention time= 397.8 min calculated for 288,749 cf (98% of inflow)
 Center-of-Mass det. time= 214.9 min (3,723.7 - 3,508.8)

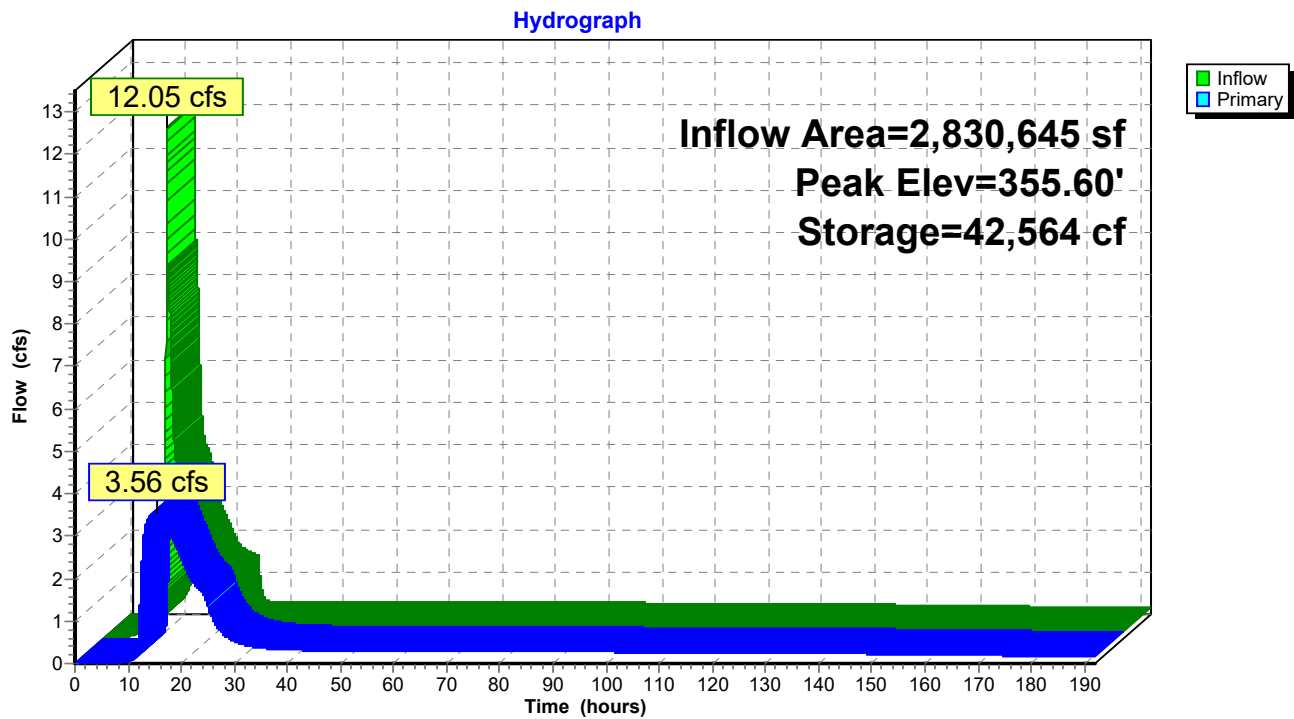
Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.56 cfs @ 15.30 hrs HW=355.60' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 3.56 cfs of 13.20 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 3.56 cfs @ 2.67 fps)
 3=19"Wx30"H Weir (Controls 0.00 cfs)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

2025-1201 SCS*Type II 24-hr 1-yr Rainfall=2.69"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 2.17" for 1-yr event
 Inflow = 25.97 cfs @ 11.96 hrs, Volume= 59,774 cf
 Outflow = 4.48 cfs @ 12.12 hrs, Volume= 57,873 cf, Atten= 83%, Lag= 9.8 min
 Primary = 4.48 cfs @ 12.12 hrs, Volume= 57,873 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.24' @ 12.12 hrs Surf.Area= 36,325 sf Storage= 35,571 cf

Plug-Flow detention time= 2,634.0 min calculated for 57,870 cf (97% of inflow)
 Center-of-Mass det. time= 2,614.3 min (3,372.6 - 758.4)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=4.48 cfs @ 12.12 hrs HW=361.24' TW=355.27' (Dynamic Tailwater)

1=Outflow Pipe (Passes 4.48 cfs of 65.82 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 9.86 fps)

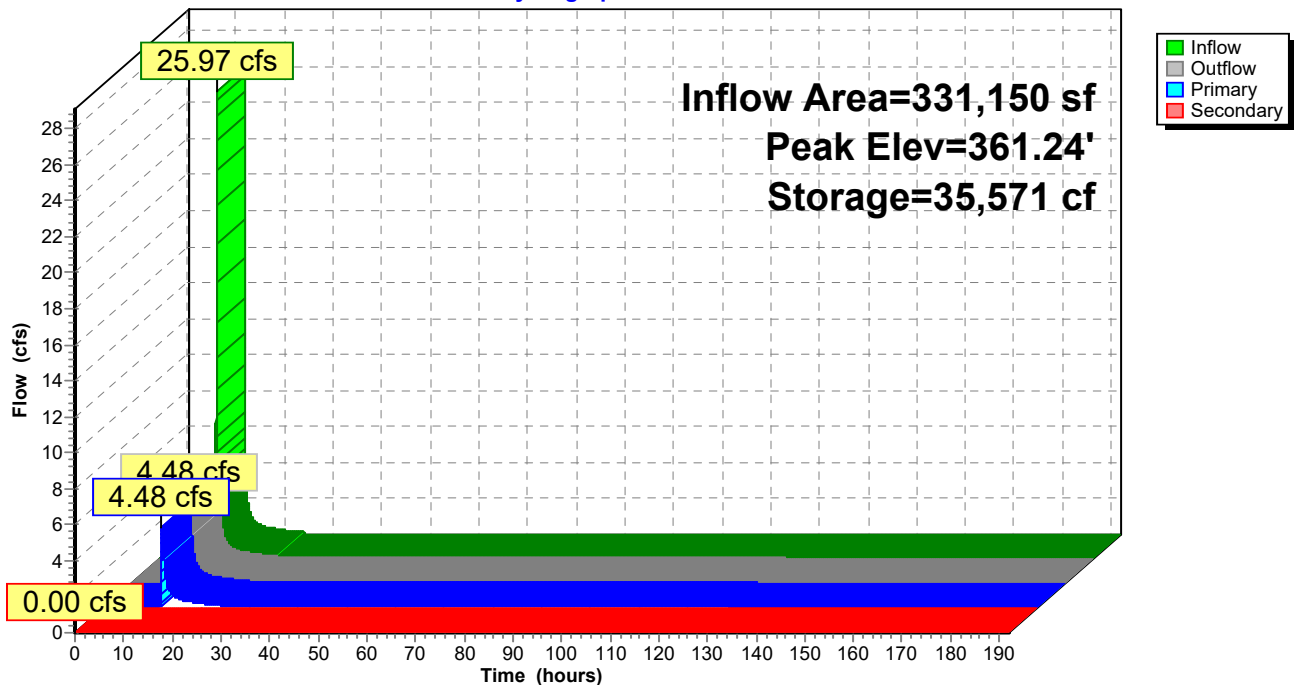
3=Type M Overflow (Weir Controls 4.41 cfs @ 1.60 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-2: MRC RAIN GARDEN

Hydrograph



2025-1201 SCS*Type II 24-hr 1-yr Rainfall=2.69"*

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 1.89" for 1-yr event
 Inflow = 23.41 cfs @ 11.96 hrs, Volume= 53,020 cf
 Outflow = 0.50 cfs @ 15.21 hrs, Volume= 45,512 cf, Atten= 98%, Lag= 195.2 min
 Primary = 0.50 cfs @ 15.21 hrs, Volume= 45,512 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.05' @ 15.21 hrs Surf.Area= 42,791 sf Storage= 41,297 cf

Plug-Flow detention time= 4,078.9 min calculated for 45,512 cf (86% of inflow)
 Center-of-Mass det. time= 4,011.6 min (4,780.0 - 768.5)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.50 cfs @ 15.21 hrs HW=361.05' TW=355.60' (Dynamic Tailwater)

1=Outflow Pipe (Passes 0.50 cfs of 64.14 cfs potential flow)

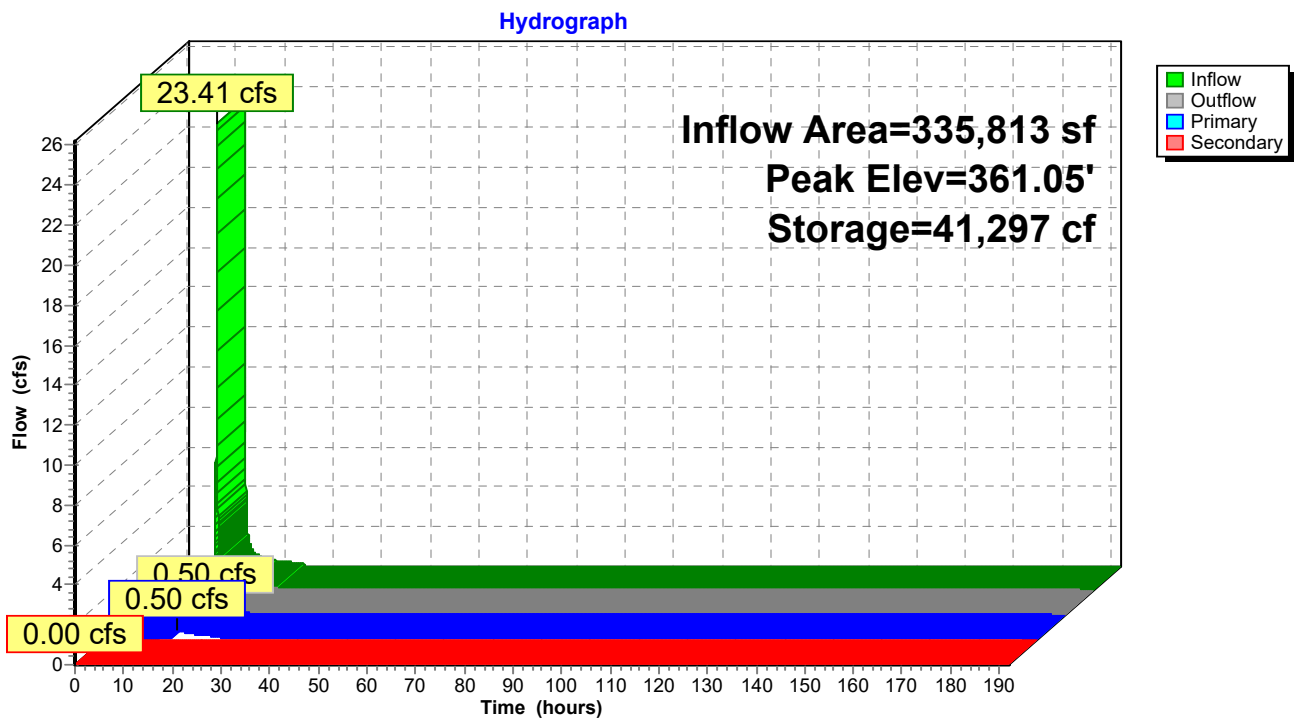
2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.64 fps)

3=Type M Overflow (Weir Controls 0.44 cfs @ 0.74 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-3: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 2.00" for 1-yr event
 Inflow = 36.36 cfs @ 11.96 hrs, Volume= 82,664 cf
 Outflow = 2.89 cfs @ 12.47 hrs, Volume= 68,794 cf, Atten= 92%, Lag= 30.8 min
 Primary = 2.89 cfs @ 12.47 hrs, Volume= 68,794 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.18' @ 12.47 hrs Surf.Area= 54,683 sf Storage= 52,347 cf

Plug-Flow detention time= 2,878.7 min calculated for 68,794 cf (83% of inflow)
 Center-of-Mass det. time= 2,804.2 min (3,569.2 - 765.0)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

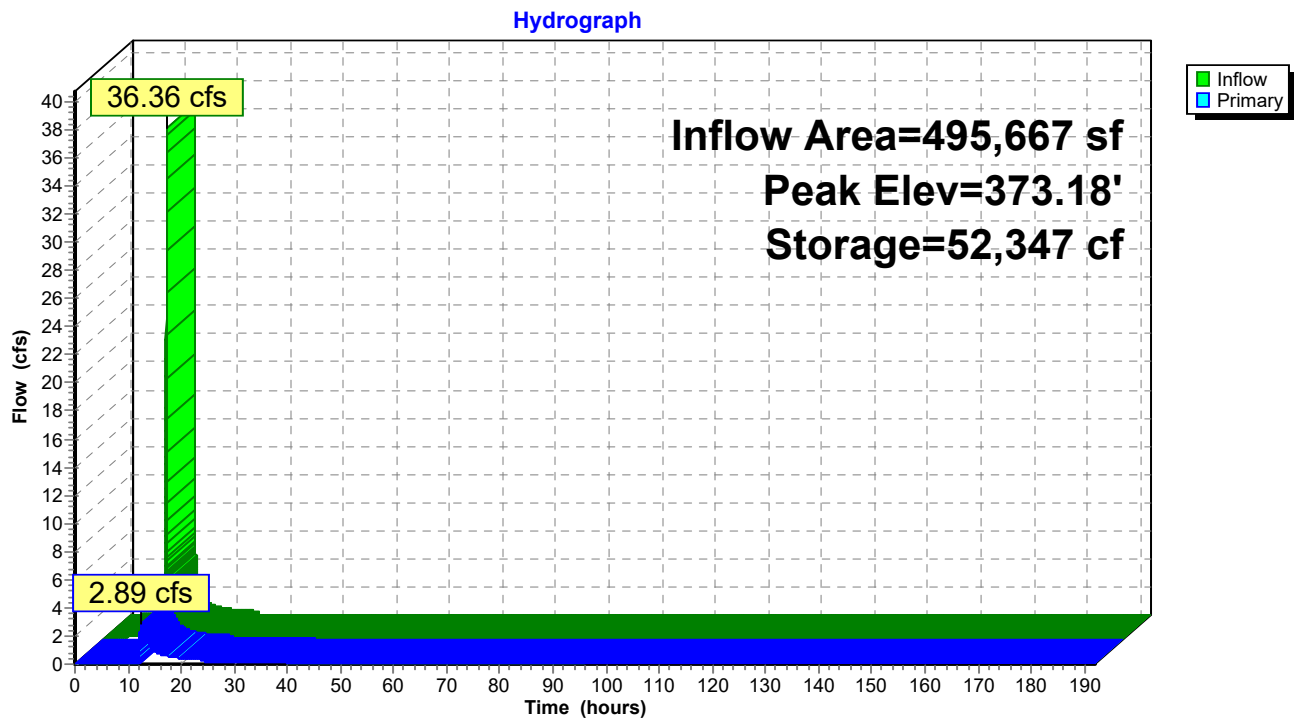
Primary OutFlow Max=2.89 cfs @ 12.47 hrs HW=373.18' TW=355.39' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 2.89 cfs of 58.73 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.79 fps)

3=Type M Overflow (Weir Controls 2.82 cfs @ 1.38 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 1-yr Rainfall=2.69"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 1.40" for 1-yr event
 Inflow = 29.20 cfs @ 11.96 hrs, Volume= 66,711 cf
 Outflow = 0.76 cfs @ 14.78 hrs, Volume= 52,850 cf, Atten= 97%, Lag= 168.9 min
 Primary = 0.76 cfs @ 14.78 hrs, Volume= 52,850 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.07' @ 14.78 hrs Surf.Area= 54,209 sf Storage= 49,358 cf

Plug-Flow detention time= 3,707.1 min calculated for 52,850 cf (79% of inflow)
 Center-of-Mass det. time= 3,619.6 min (4,402.0 - 782.4)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

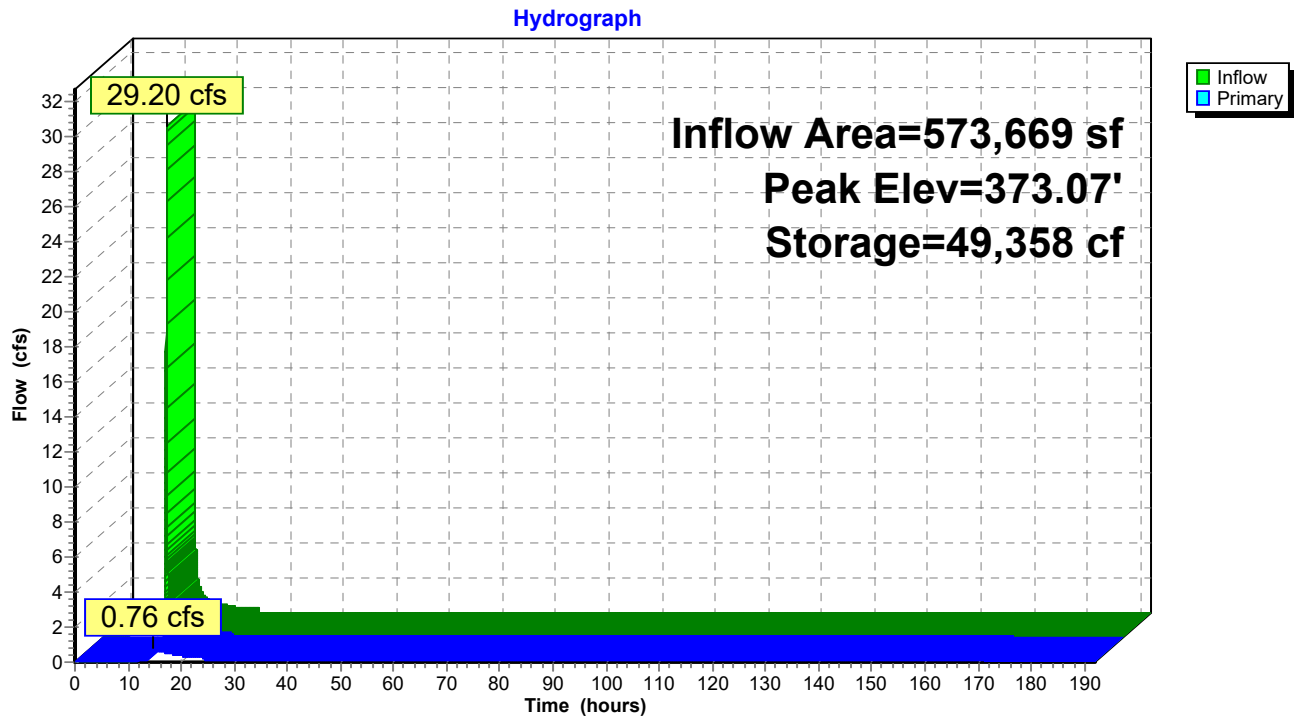
Primary OutFlow Max=0.76 cfs @ 14.78 hrs HW=373.07' TW=355.59' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 0.76 cfs of 57.66 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.66 fps)

3=Type M Overflow (Weir Controls 0.70 cfs @ 0.87 fps)

Pond SCM-5: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 0.67" for 1-yr event
 Inflow = 17.42 cfs @ 11.97 hrs, Volume= 43,345 cf
 Outflow = 1.65 cfs @ 12.53 hrs, Volume= 42,398 cf, Atten= 91%, Lag= 33.7 min
 Primary = 1.65 cfs @ 12.53 hrs, Volume= 42,398 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 368.12' @ 12.53 hrs Surf.Area= 23,366 sf Storage= 22,264 cf

Plug-Flow detention time= 2,119.2 min calculated for 42,396 cf (98% of inflow)
 Center-of-Mass det. time= 2,106.4 min (2,929.8 - 823.4)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=1.65 cfs @ 12.53 hrs HW=368.12' TW=355.41' (Dynamic Tailwater)

1=Outflow Pipe (Passes 1.65 cfs of 12.53 cfs potential flow)

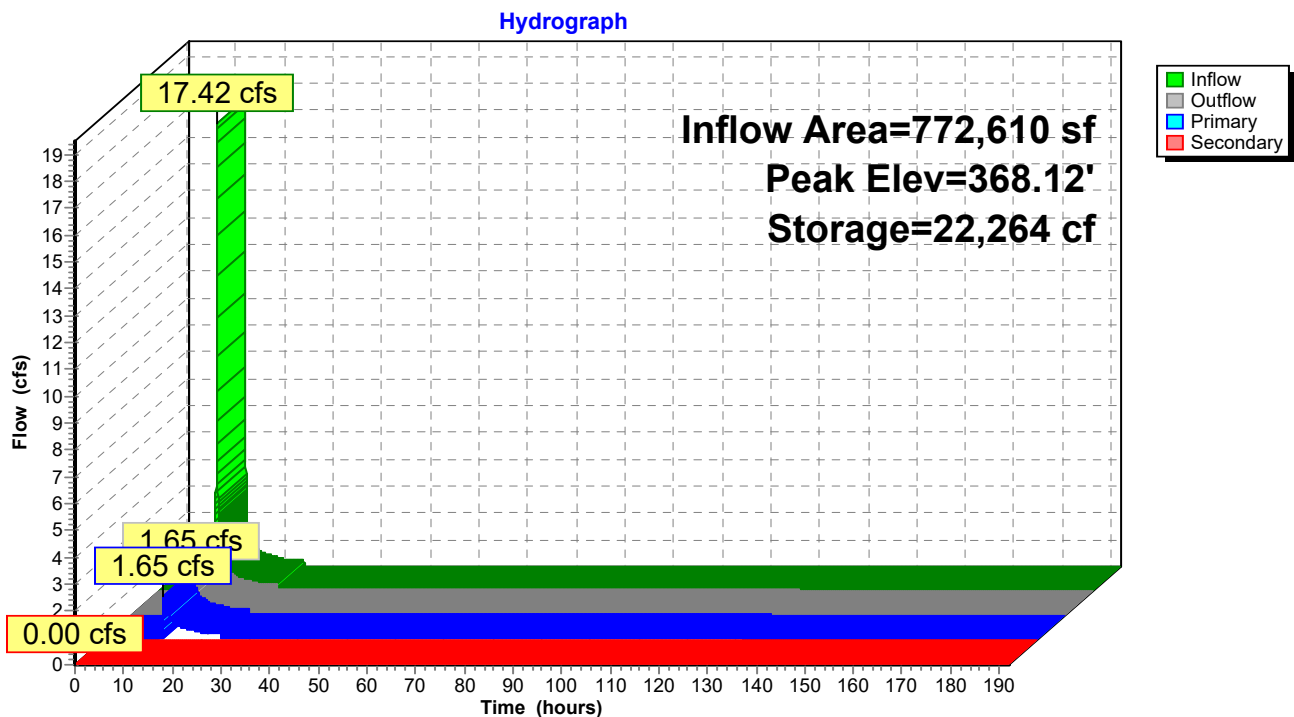
2=MRC Low Flow Orifice (Orifice Controls 0.05 cfs @ 9.73 fps)

3=Type M Overflow (Weir Controls 1.60 cfs @ 1.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=363.00' TW=355.00' (Dynamic Tailwater)

4=Spillway (Controls 0.00 cfs)

Pond SCM-6: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

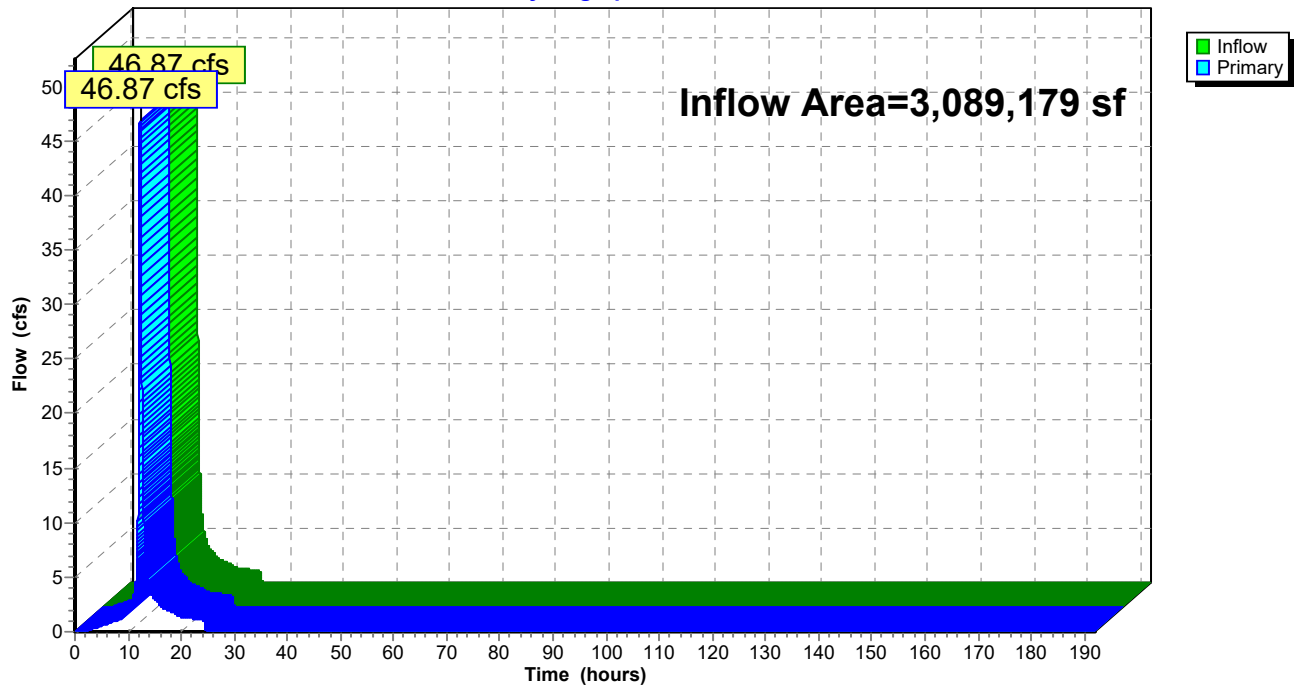
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 0.95" for 1-yr event
Inflow = 46.87 cfs @ 12.25 hrs, Volume= 245,598 cf
Primary = 46.87 cfs @ 12.25 hrs, Volume= 245,598 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

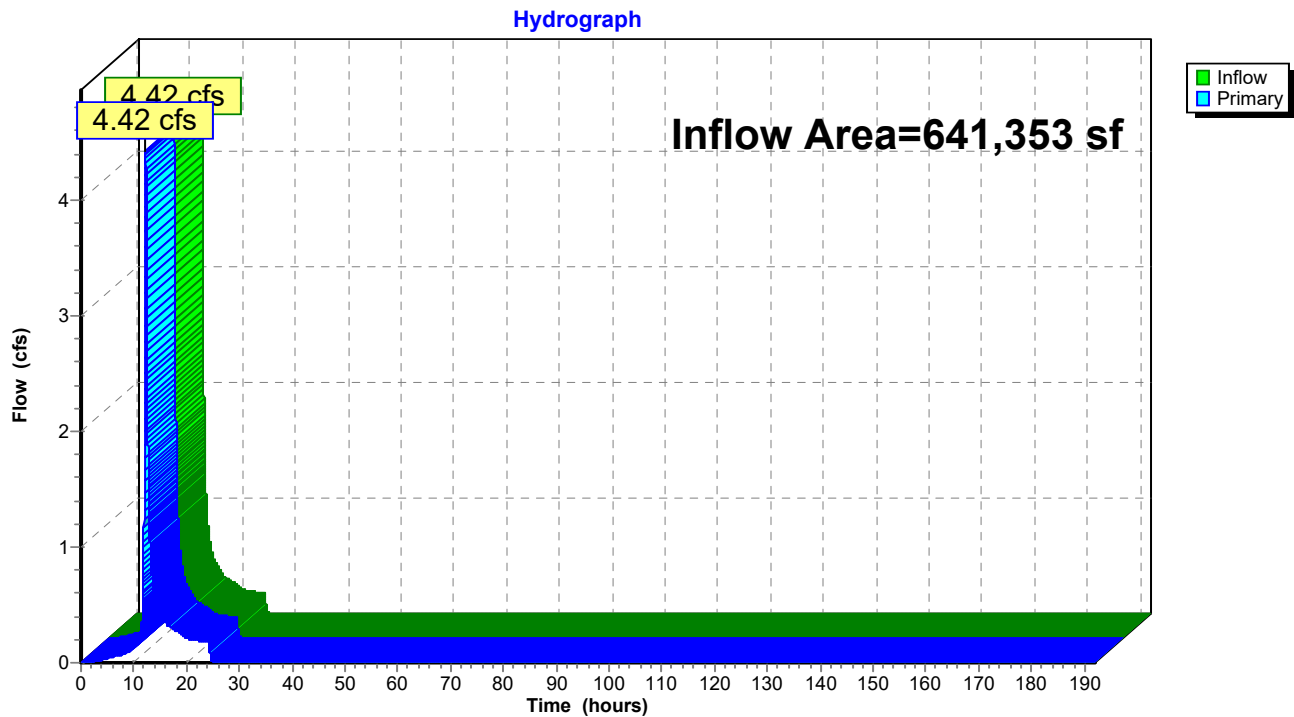
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 0.50" for 1-yr event
Inflow = 4.42 cfs @ 12.25 hrs, Volume= 26,539 cf
Primary = 4.42 cfs @ 12.25 hrs, Volume= 26,539 cf, Atten= 0%, Lag= 0.0 min

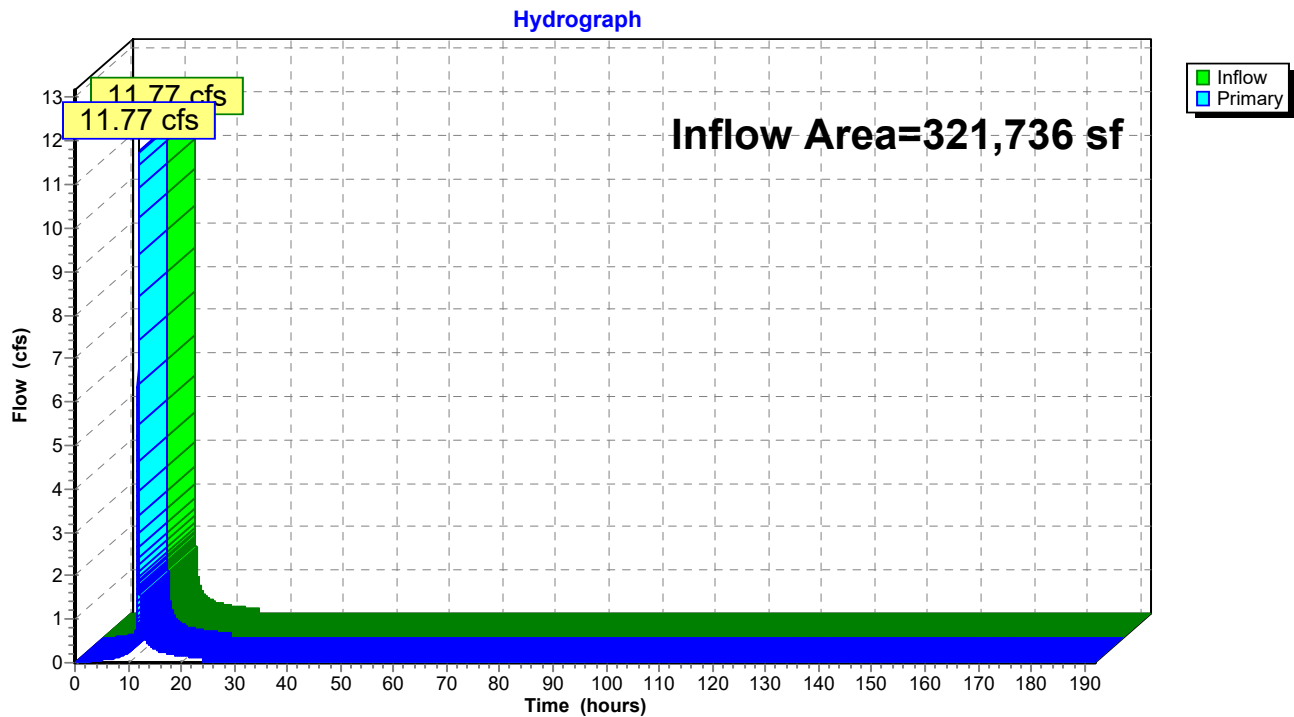
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 1.05" for 1-yr event
Inflow = 11.77 cfs @ 11.96 hrs, Volume= 28,232 cf
Primary = 11.77 cfs @ 11.96 hrs, Volume= 28,232 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

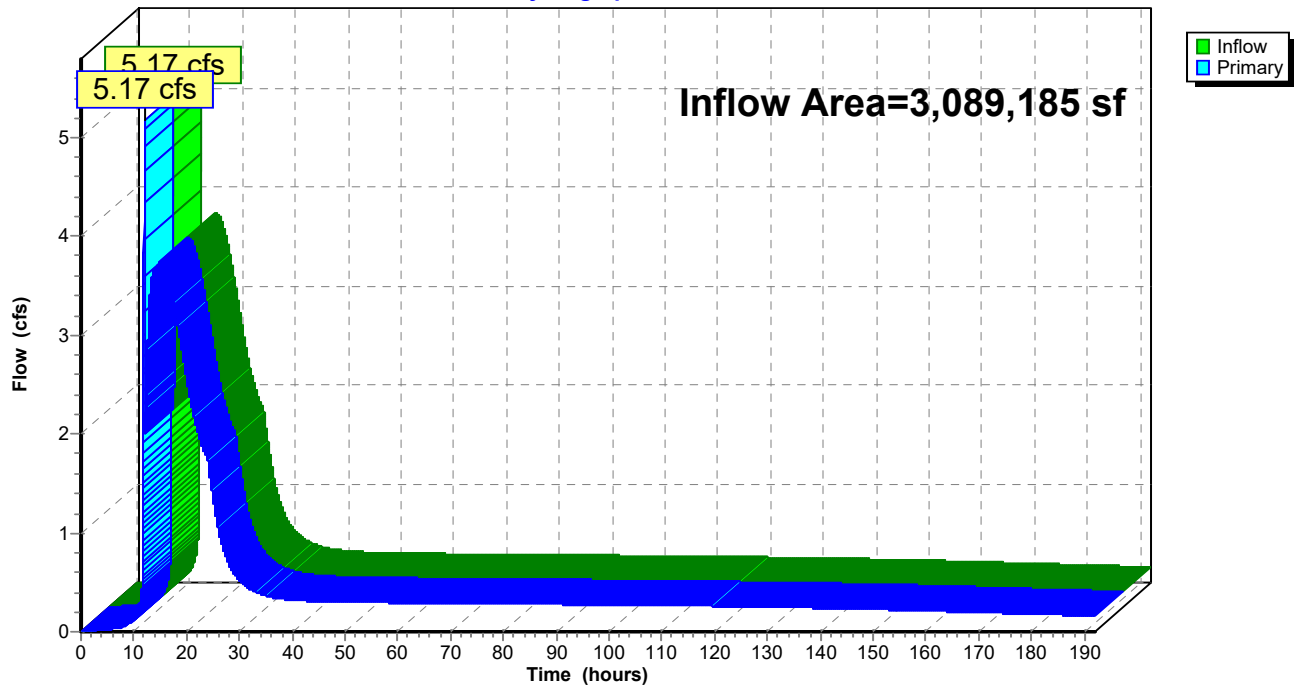
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 1.17" for 1-yr event
Inflow = 5.17 cfs @ 11.98 hrs, Volume= 300,953 cf
Primary = 5.17 cfs @ 11.98 hrs, Volume= 300,953 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 2.80 cfs @ 11.98 hrs, Volume= 6,741 cf, Depth= 0.54"

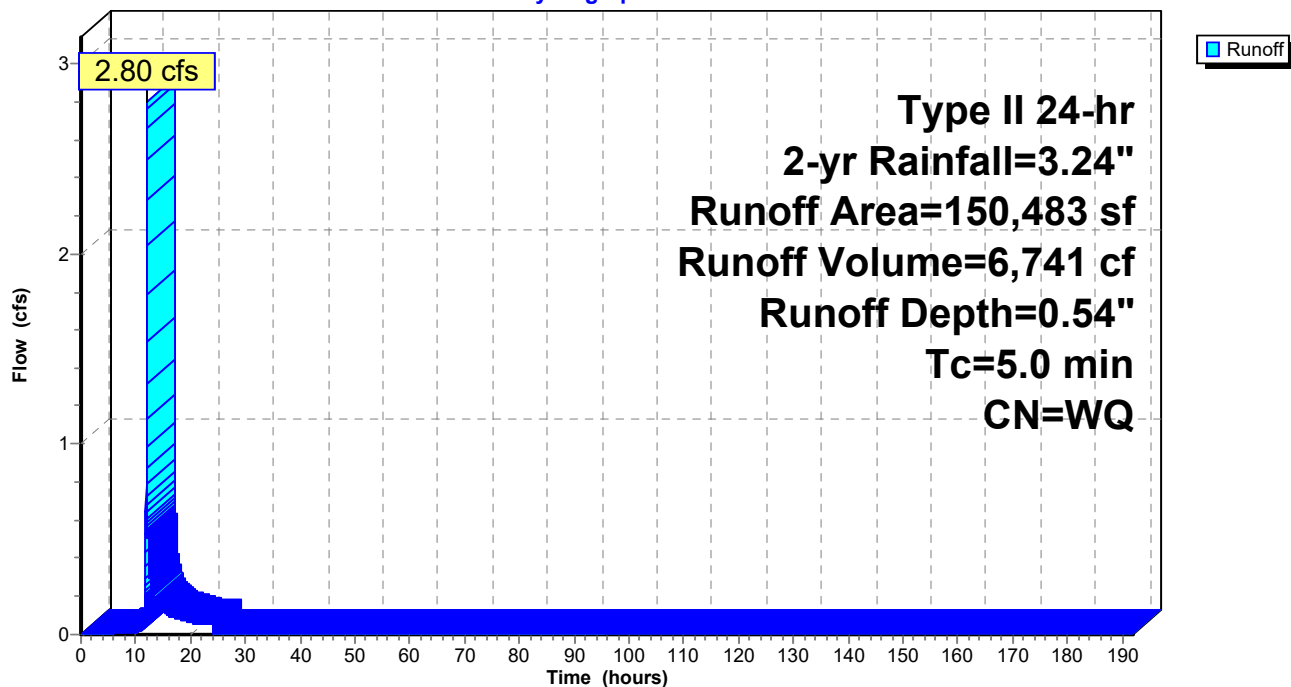
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 3.08 cfs @ 11.96 hrs, Volume= 7,116 cf, Depth= 2.92"

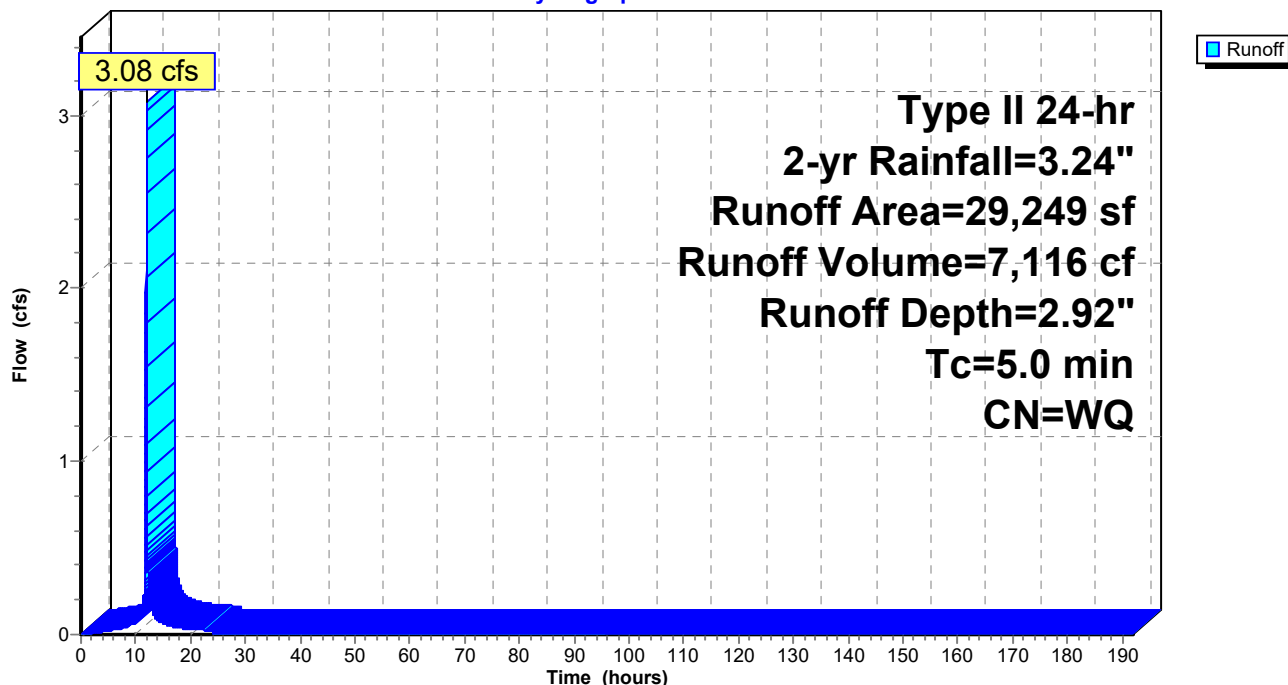
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

Hydrograph



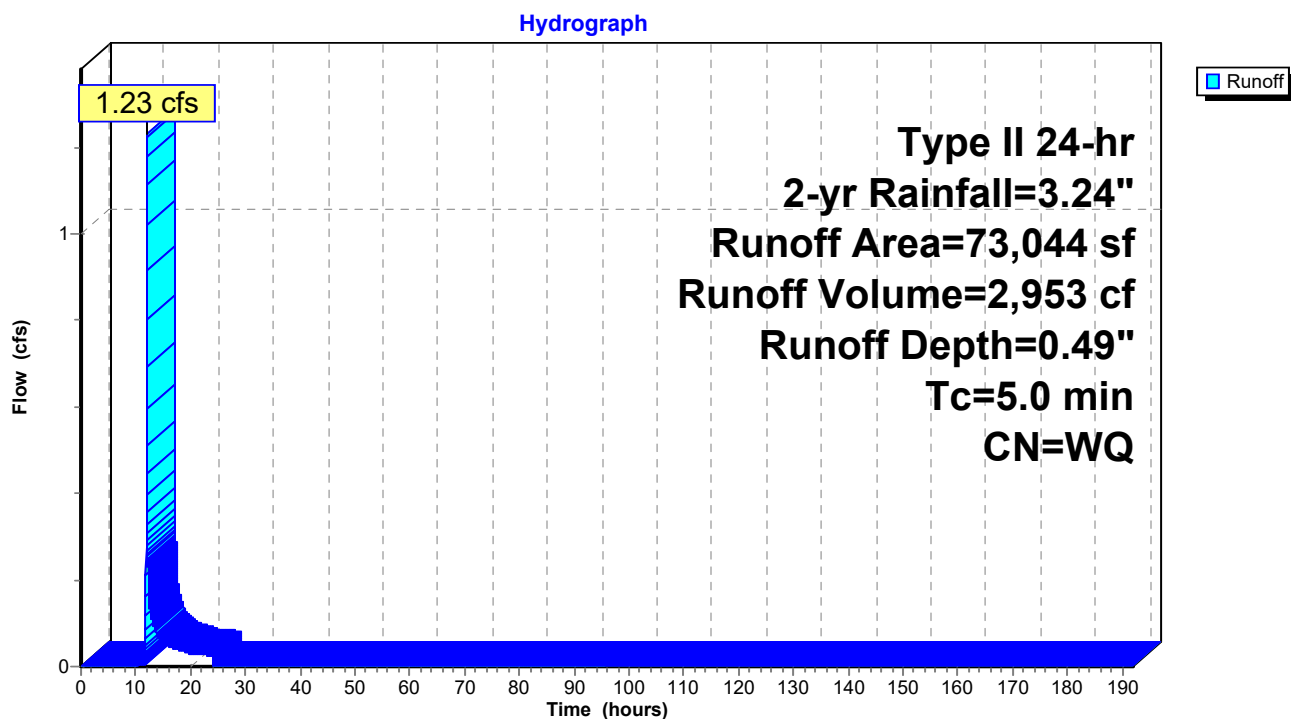
Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 1.23 cfs @ 11.98 hrs, Volume= 2,953 cf, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.37 cfs @ 11.96 hrs, Volume= 856 cf, Depth= 1.78"

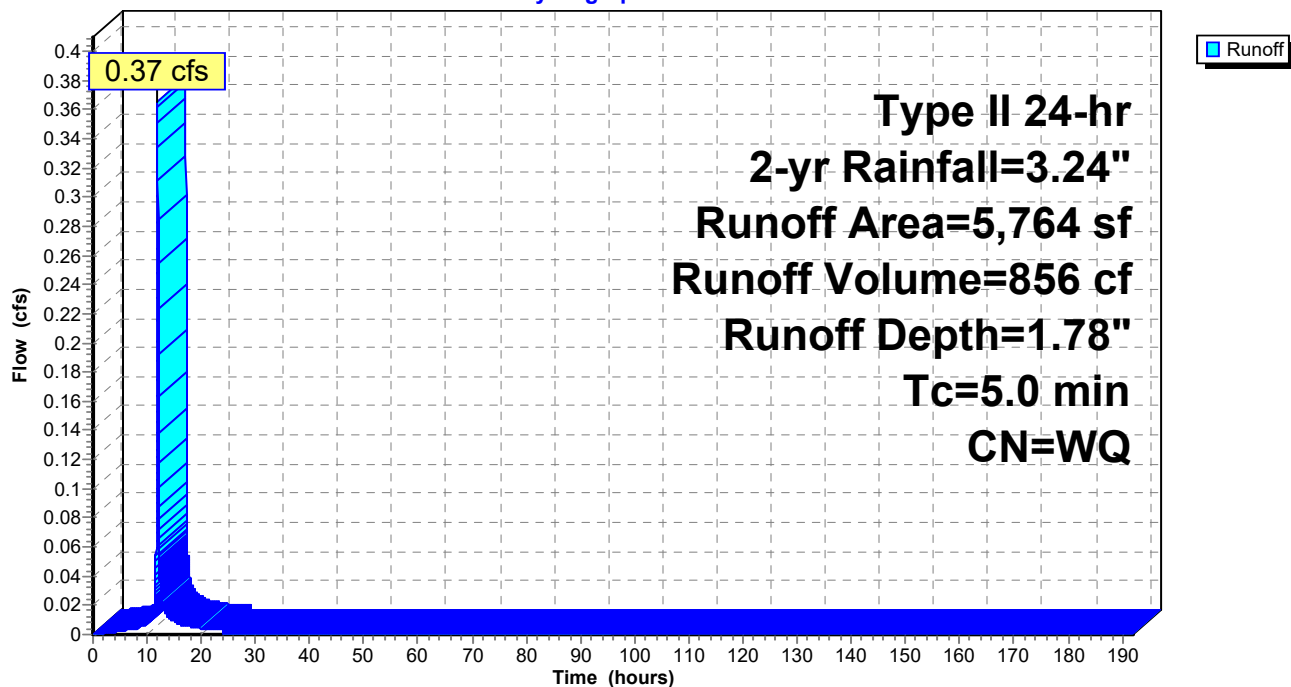
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 2-yr Rainfall=3.24"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 54.62 cfs @ 12.27 hrs, Volume= 284,356 cf, Depth= 1.39"

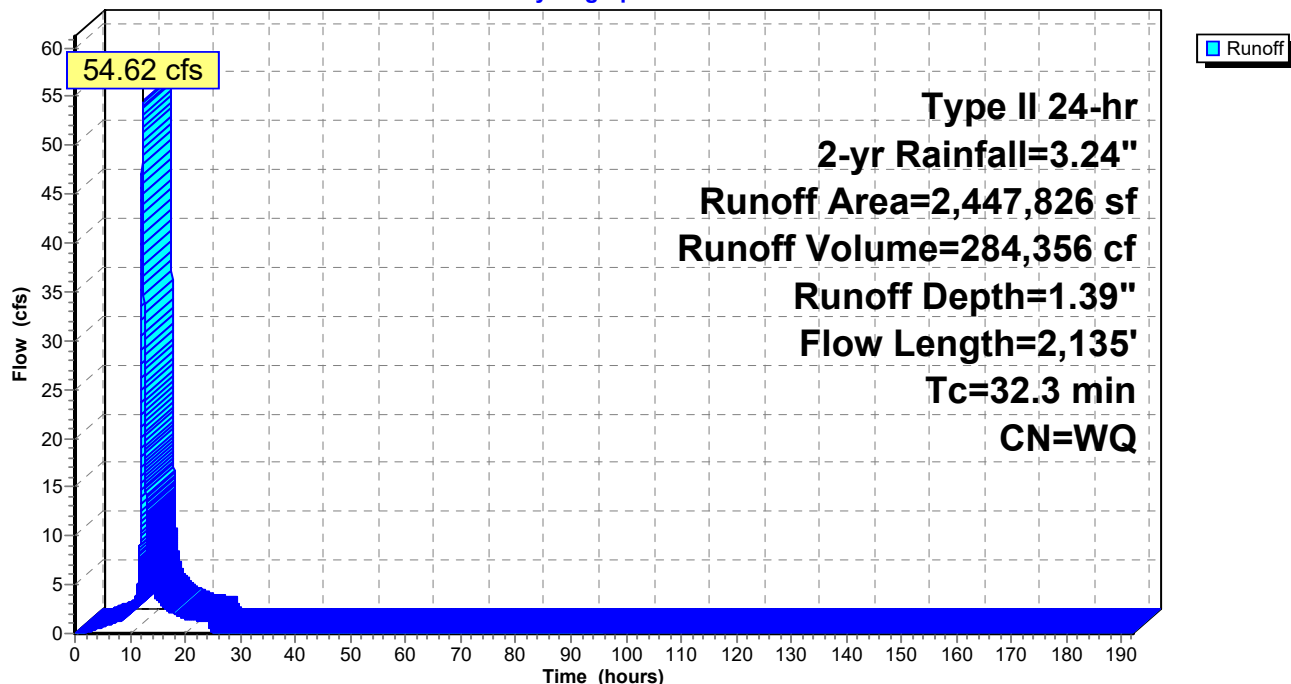
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 2-yr Rainfall=3.24"

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Summary for Subcatchment E2: PRE (OLOD)

Runoff = 0.69 cfs @ 12.35 hrs, Volume= 4,563 cf, Depth= 0.46"

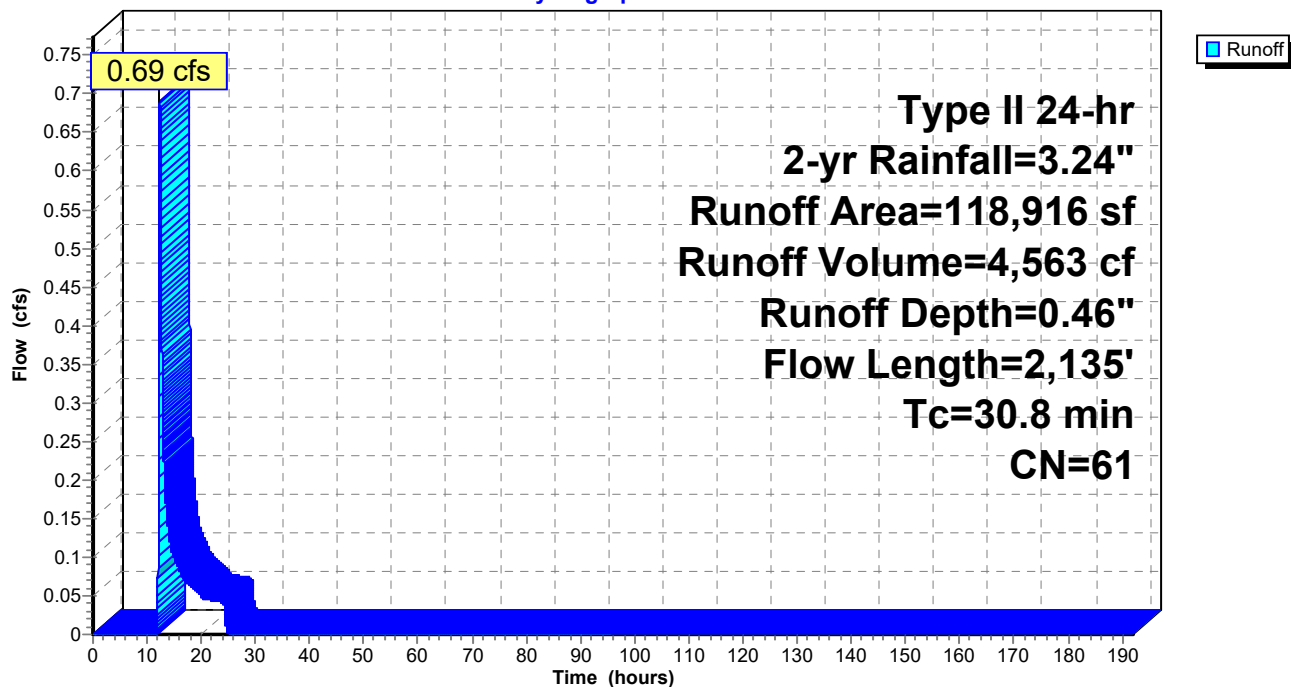
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 2-yr Rainfall=3.24"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 6.55 cfs @ 12.25 hrs, Volume= 34,949 cf, Depth= 0.80"

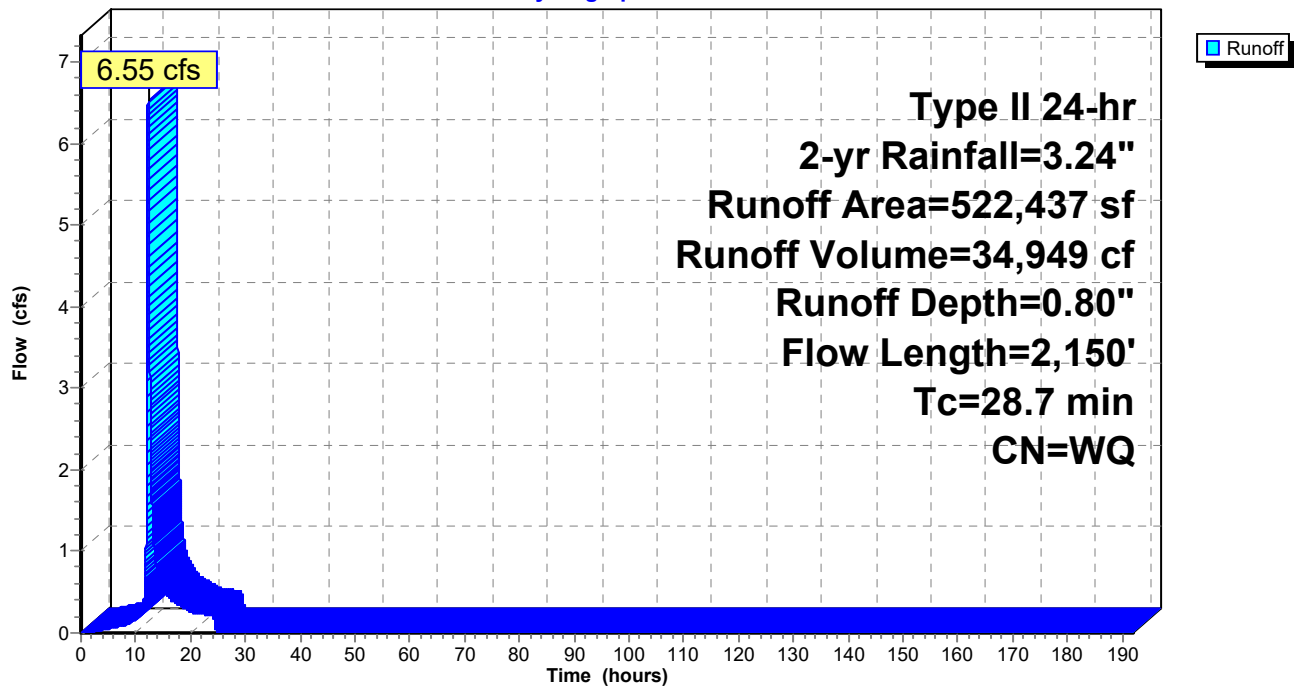
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



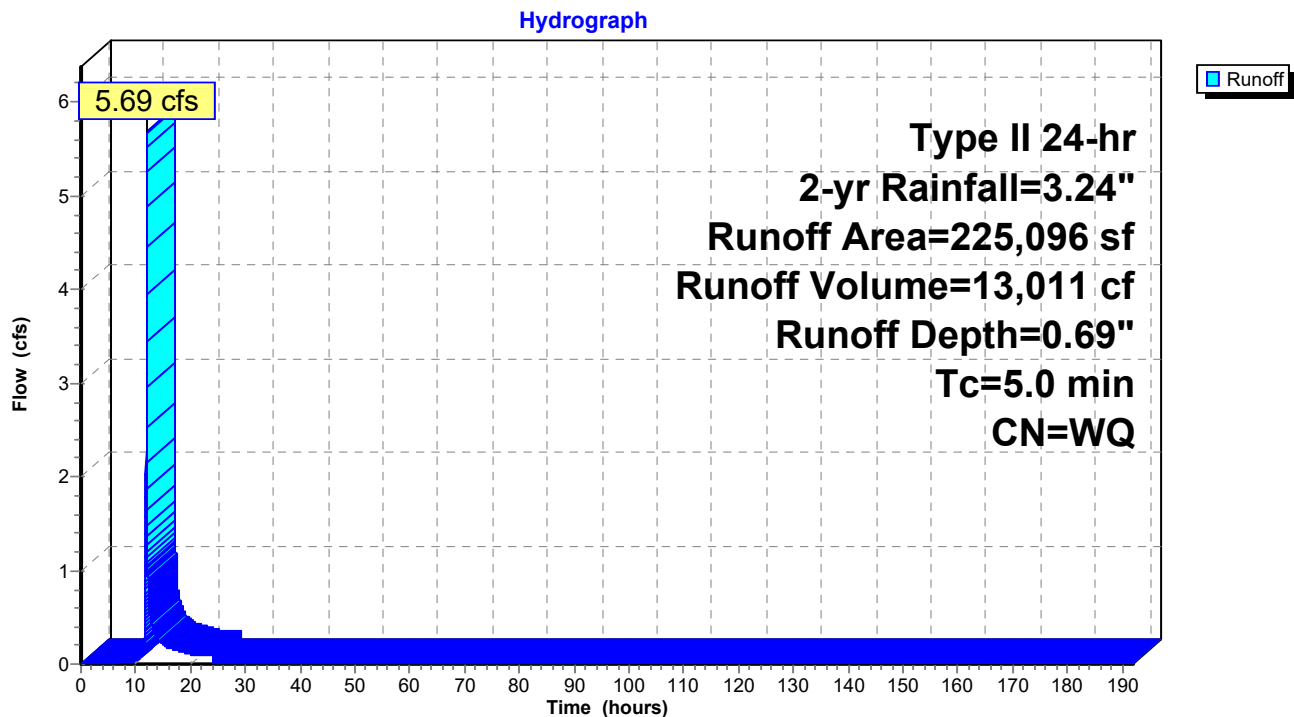
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 5.69 cfs @ 11.97 hrs, Volume= 13,011 cf, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

2025-1201 SCS

Type II 24-hr 2-yr Rainfall=3.24"

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Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 10.49 cfs @ 11.96 hrs, Volume= 24,219 cf, Depth= 3.01"

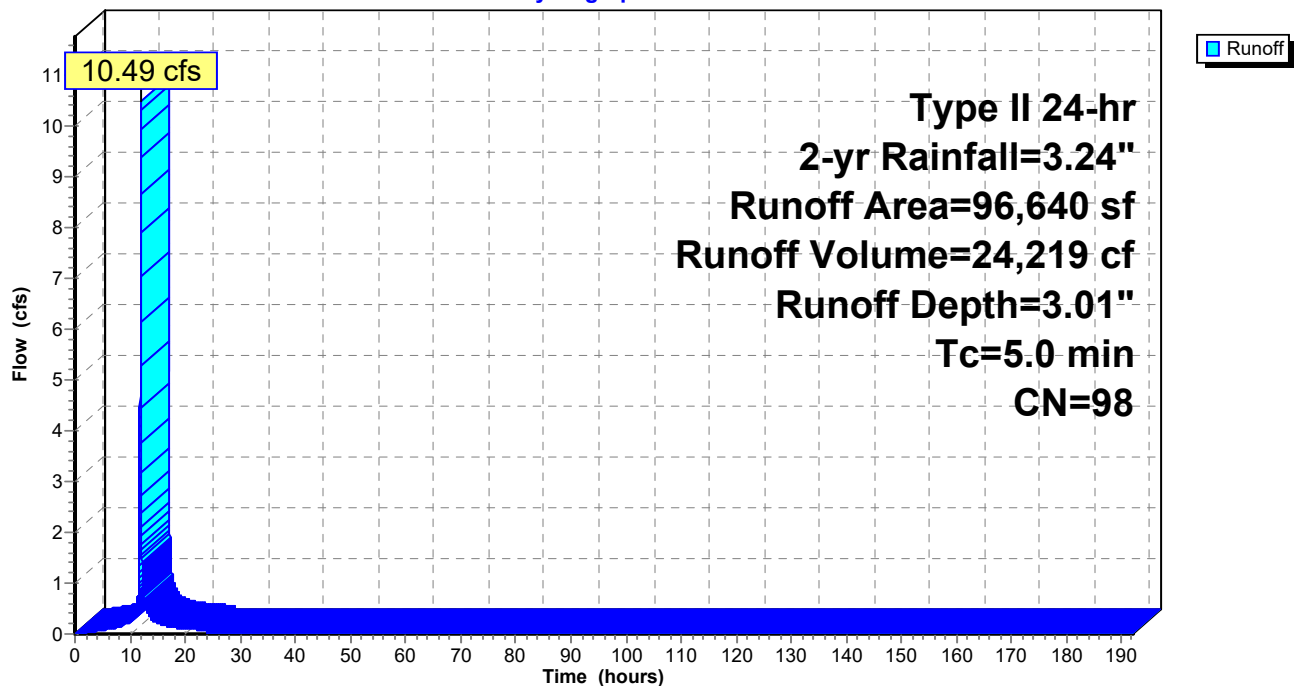
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 14.57 cfs @ 11.97 hrs, Volume= 34,949 cf, Depth= 0.80"

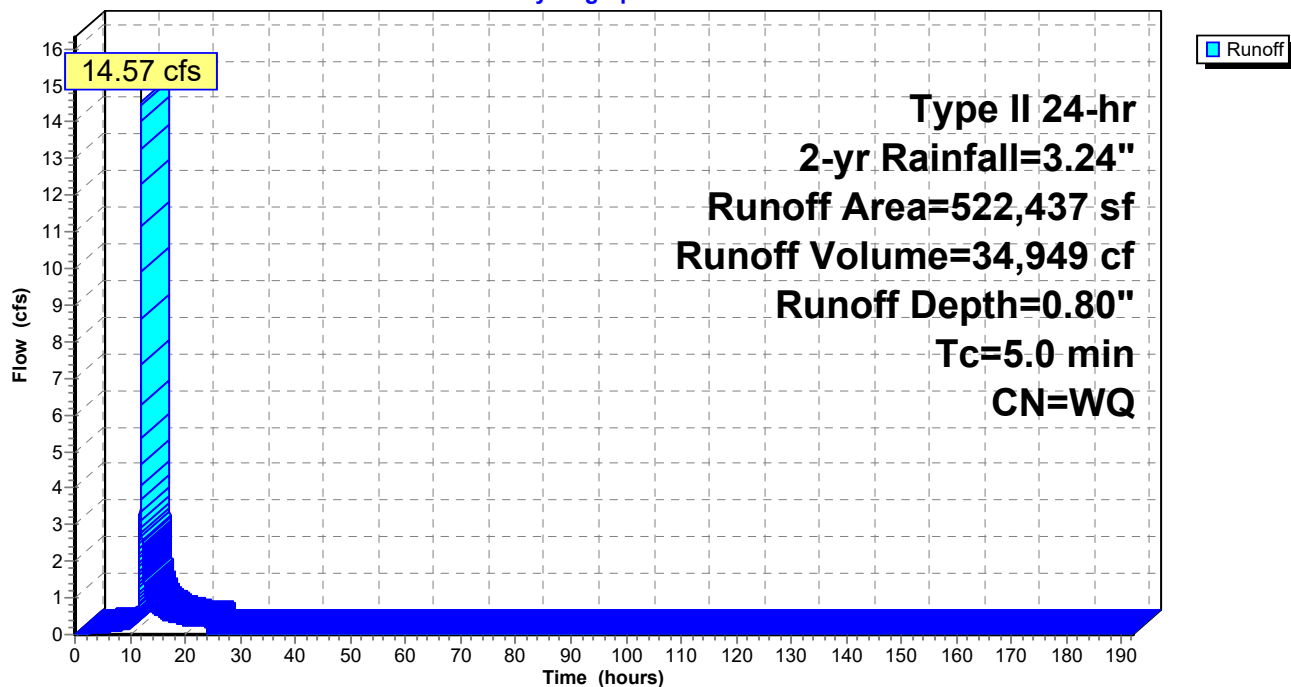
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



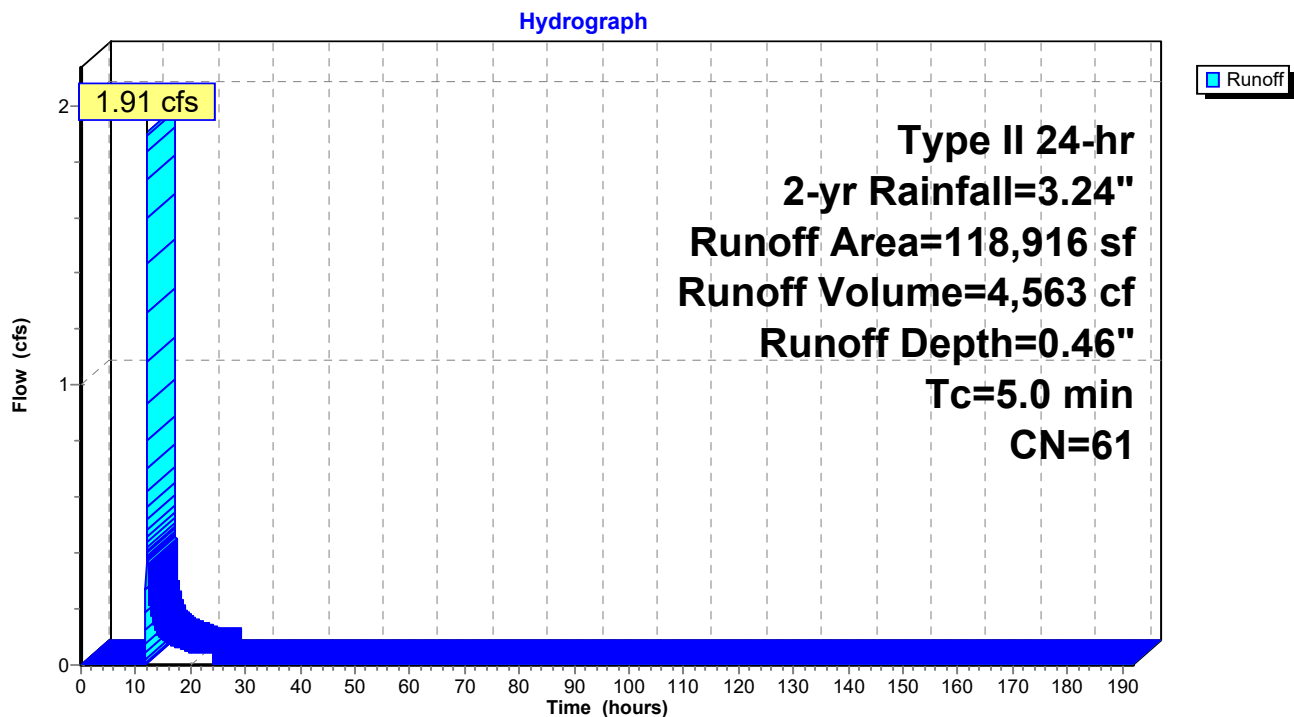
Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 1.91 cfs @ 11.98 hrs, Volume= 4,563 cf, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 31.81 cfs @ 11.96 hrs, Volume= 73,630 cf, Depth= 2.67"

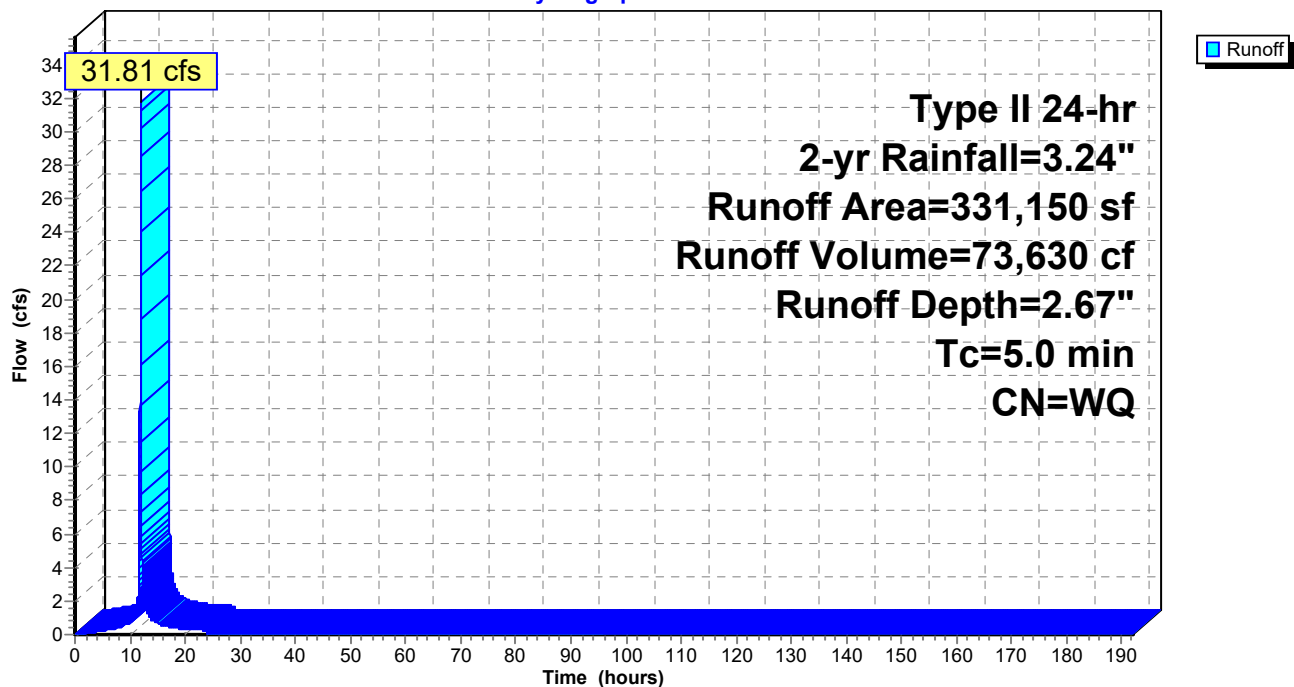
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 2-yr Rainfall=3.24"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 29.21 cfs @ 11.96 hrs, Volume= 66,299 cf, Depth= 2.37"

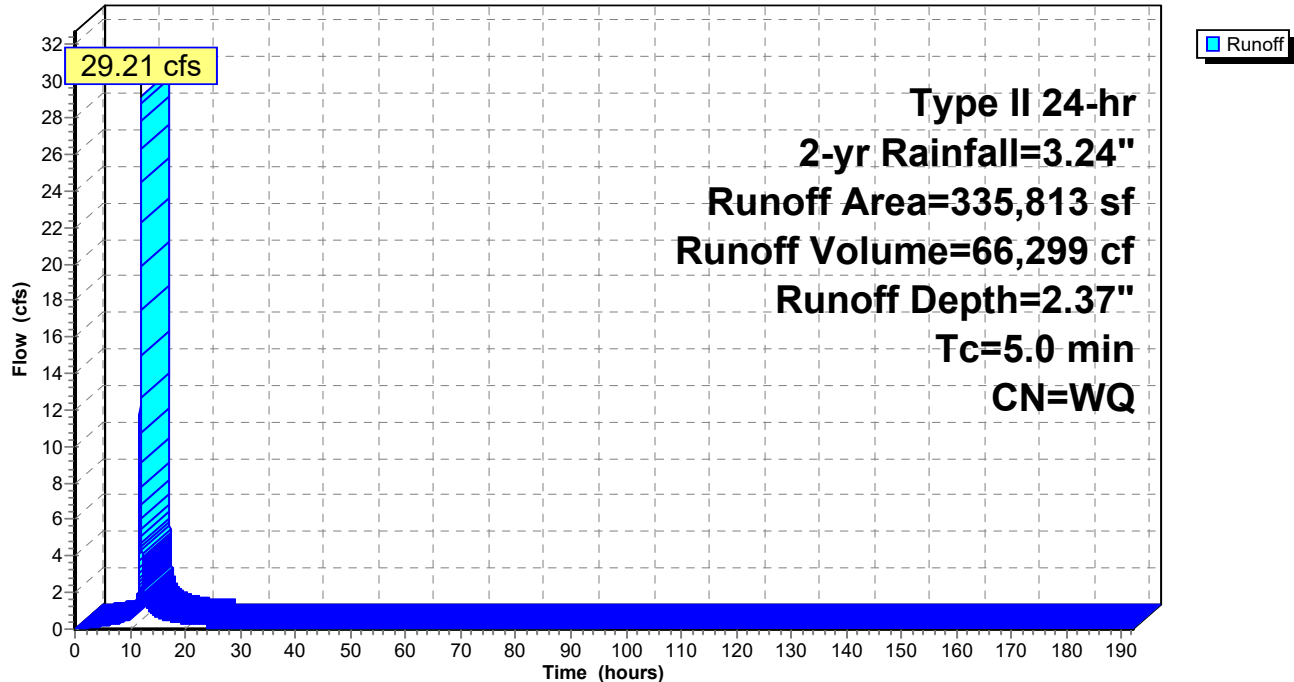
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
	57,394	61	>75% Grass cover, Good, HSG B
*	188,667	98	Building
*	19,774	98	Impervious
*	13,923	98	Generators
*	56,055	85	Gravel
	335,813		Weighted Average
	113,449	73	33.78% Pervious Area
	222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 45.04 cfs @ 11.96 hrs, Volume= 102,788 cf, Depth= 2.49"

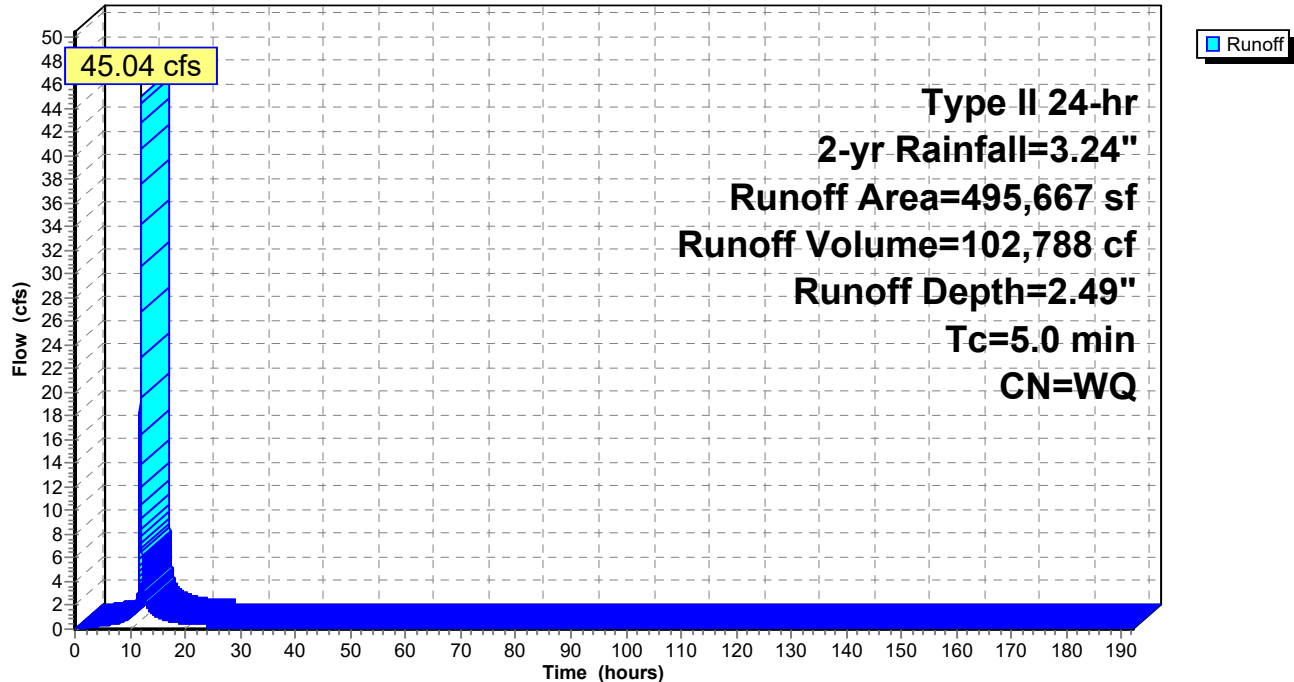
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

Hydrograph



Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 36.23 cfs @ 11.96 hrs, Volume= 81,254 cf, Depth= 2.14"

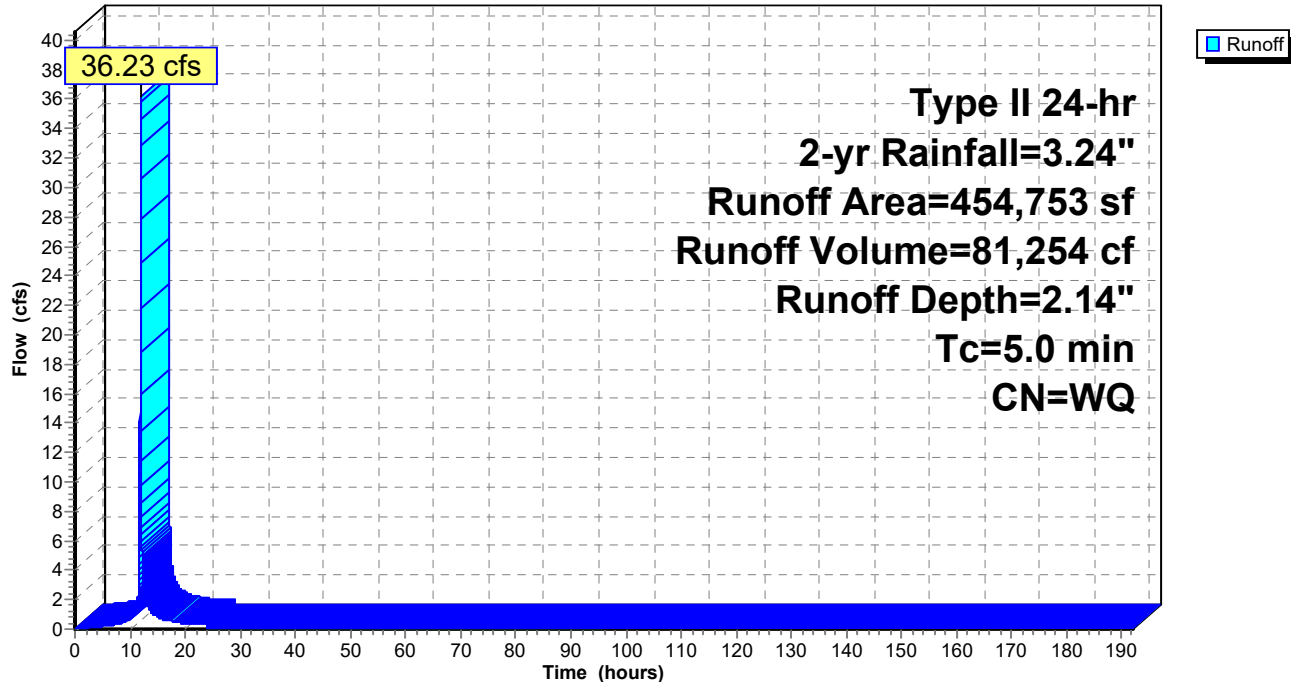
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 12.05 cfs @ 11.96 hrs, Volume= 26,354 cf, Depth= 1.26"

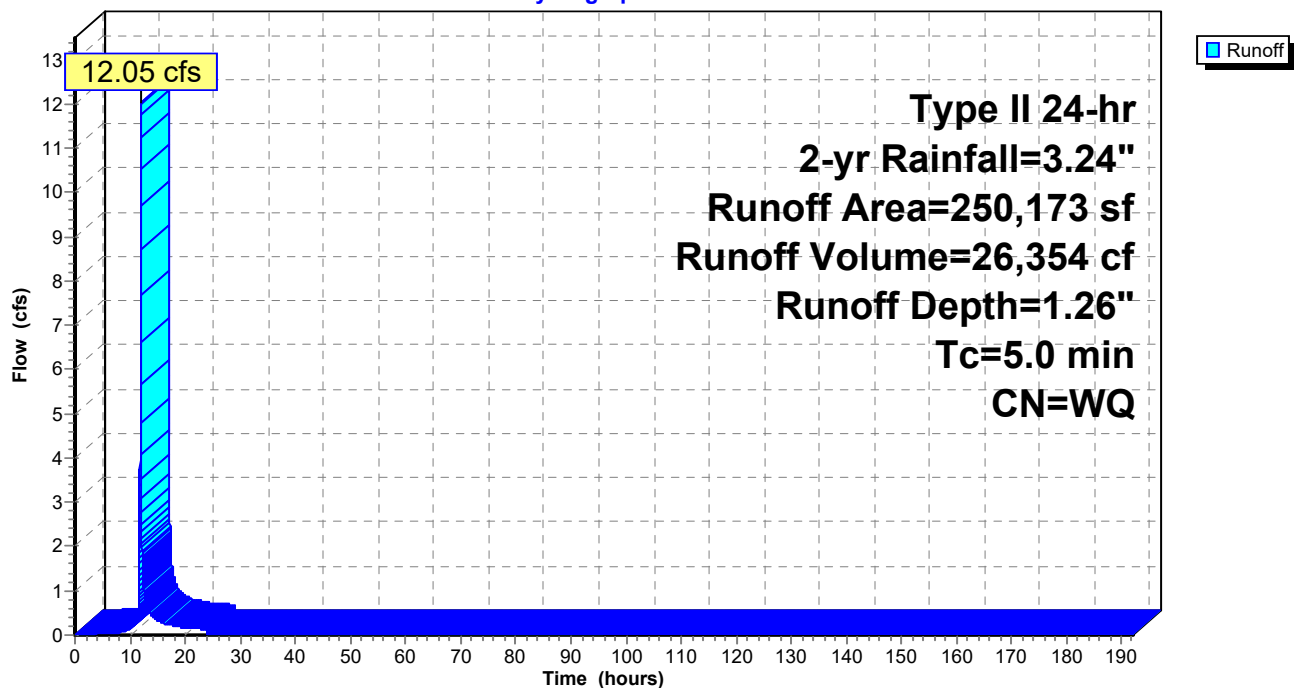
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.24"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Hydrograph



Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 1.65" for 2-yr event
 Inflow = 37.97 cfs @ 12.05 hrs, Volume= 388,901 cf
 Outflow = 6.22 cfs @ 14.16 hrs, Volume= 381,988 cf, Atten= 84%, Lag= 126.9 min
 Primary = 6.22 cfs @ 14.16 hrs, Volume= 381,988 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 356.23' @ 14.16 hrs Surf.Area= 75,604 sf Storage= 89,012 cf

Plug-Flow detention time= 357.3 min calculated for 381,968 cf (98% of inflow)
 Center-of-Mass det. time= 207.4 min (3,076.1 - 2,868.7)

Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

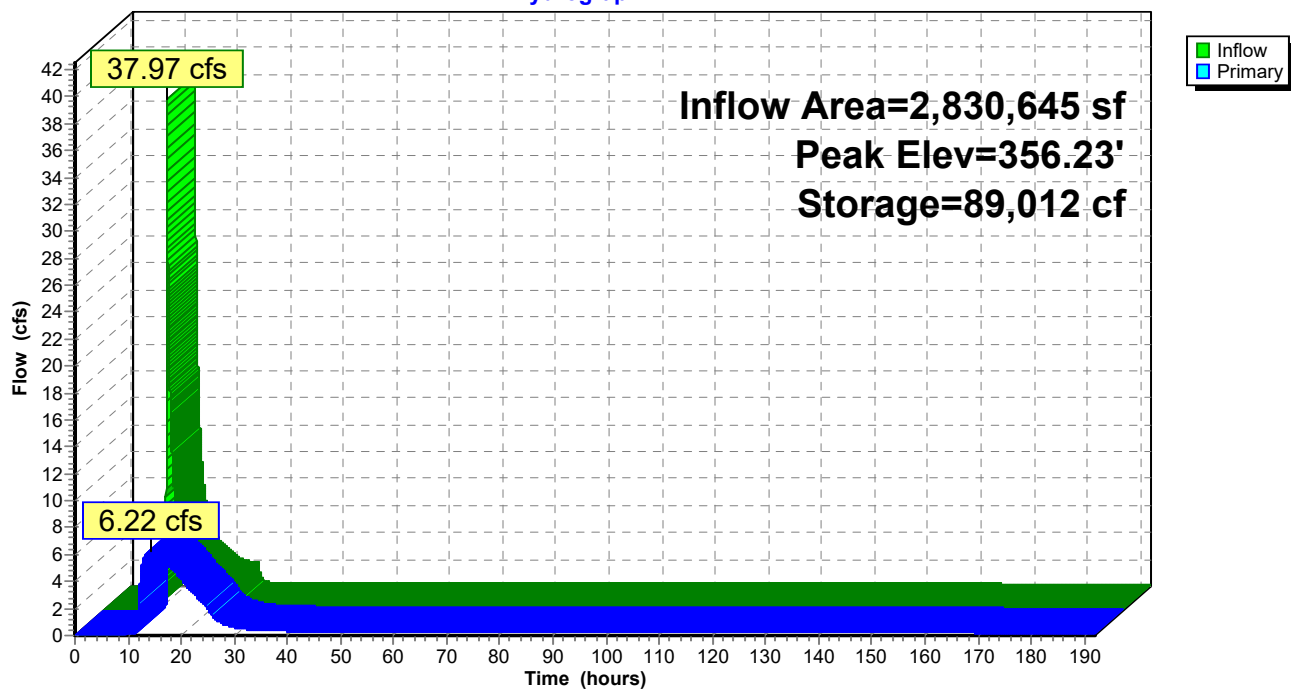
Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.22 cfs @ 14.16 hrs HW=356.23' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 6.22 cfs of 48.28 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 6.22 cfs @ 4.65 fps)
 3=19"Wx30"H Weir (Controls 0.00 cfs)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

Hydrograph



2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 2.67" for 2-yr event
 Inflow = 31.81 cfs @ 11.96 hrs, Volume= 73,630 cf
 Outflow = 12.68 cfs @ 12.05 hrs, Volume= 71,723 cf, Atten= 60%, Lag= 5.9 min
 Primary = 12.68 cfs @ 12.05 hrs, Volume= 71,723 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.48' @ 12.05 hrs Surf.Area= 37,060 sf Storage= 40,356 cf

Plug-Flow detention time= 2,141.0 min calculated for 71,723 cf (97% of inflow)
 Center-of-Mass det. time= 2,124.3 min (2,879.3 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

2025-1201 SCS

Type II 24-hr 2-yr Rainfall=3.24"

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Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=12.66 cfs @ 12.05 hrs HW=361.48' TW=355.39' (Dynamic Tailwater)

1=Outflow Pipe (Passes 12.66 cfs of 67.92 cfs potential flow)

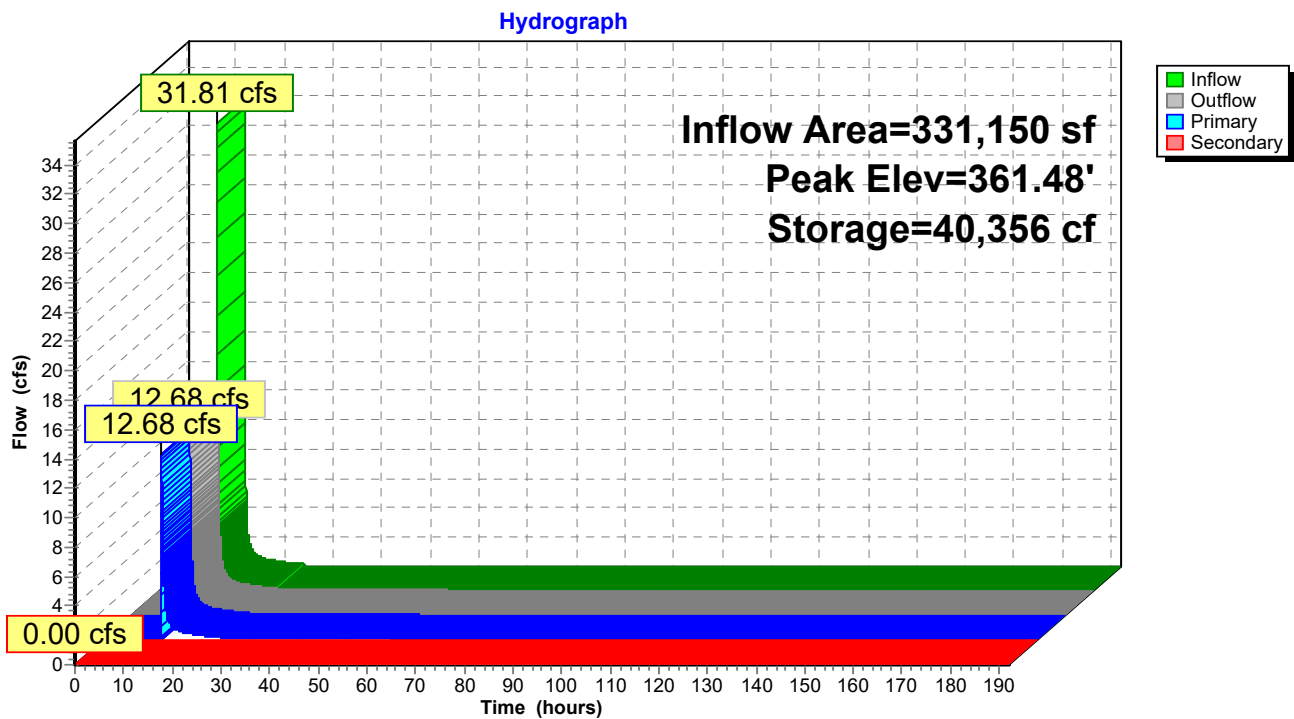
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.14 fps)

3=Type M Overflow (Weir Controls 12.59 cfs @ 2.27 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-2: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 2.37" for 2-yr event
 Inflow = 29.21 cfs @ 11.96 hrs, Volume= 66,299 cf
 Outflow = 1.87 cfs @ 12.58 hrs, Volume= 58,771 cf, Atten= 94%, Lag= 37.4 min
 Primary = 1.87 cfs @ 12.58 hrs, Volume= 58,771 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.13' @ 12.58 hrs Surf.Area= 43,089 sf Storage= 43,008 cf

Plug-Flow detention time= 3,188.1 min calculated for 58,771 cf (89% of inflow)
 Center-of-Mass det. time= 3,130.2 min (3,895.7 - 765.5)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=1.87 cfs @ 12.58 hrs HW=361.13' TW=355.93' (Dynamic Tailwater)

1=Outflow Pipe (Passes 1.87 cfs of 64.87 cfs potential flow)

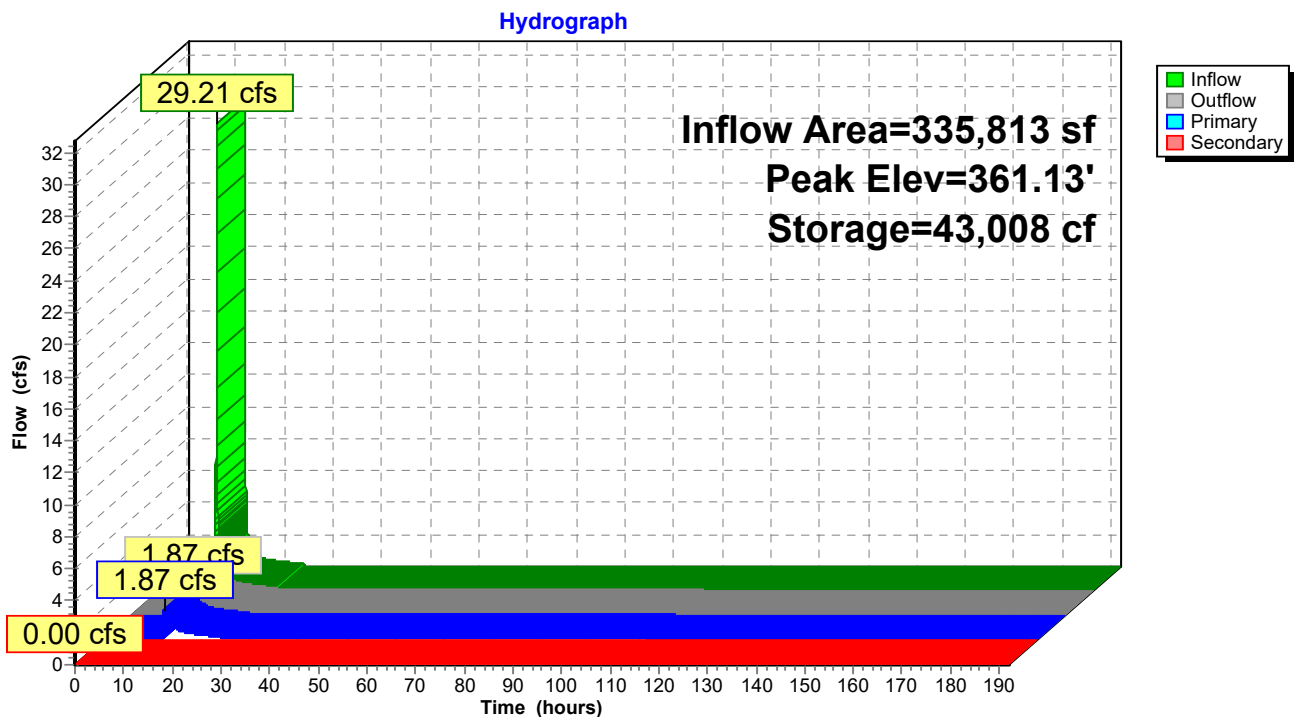
2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.73 fps)

3=Type M Overflow (Weir Controls 1.81 cfs @ 1.19 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-3: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 2.49" for 2-yr event
 Inflow = 45.04 cfs @ 11.96 hrs, Volume= 102,788 cf
 Outflow = 10.10 cfs @ 12.09 hrs, Volume= 88,895 cf, Atten= 78%, Lag= 8.1 min
 Primary = 10.10 cfs @ 12.09 hrs, Volume= 88,895 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.41' @ 12.09 hrs Surf.Area= 55,724 sf Storage= 59,089 cf

Plug-Flow detention time= 2,250.8 min calculated for 88,890 cf (86% of inflow)
 Center-of-Mass det. time= 2,186.0 min (2,947.8 - 761.8)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

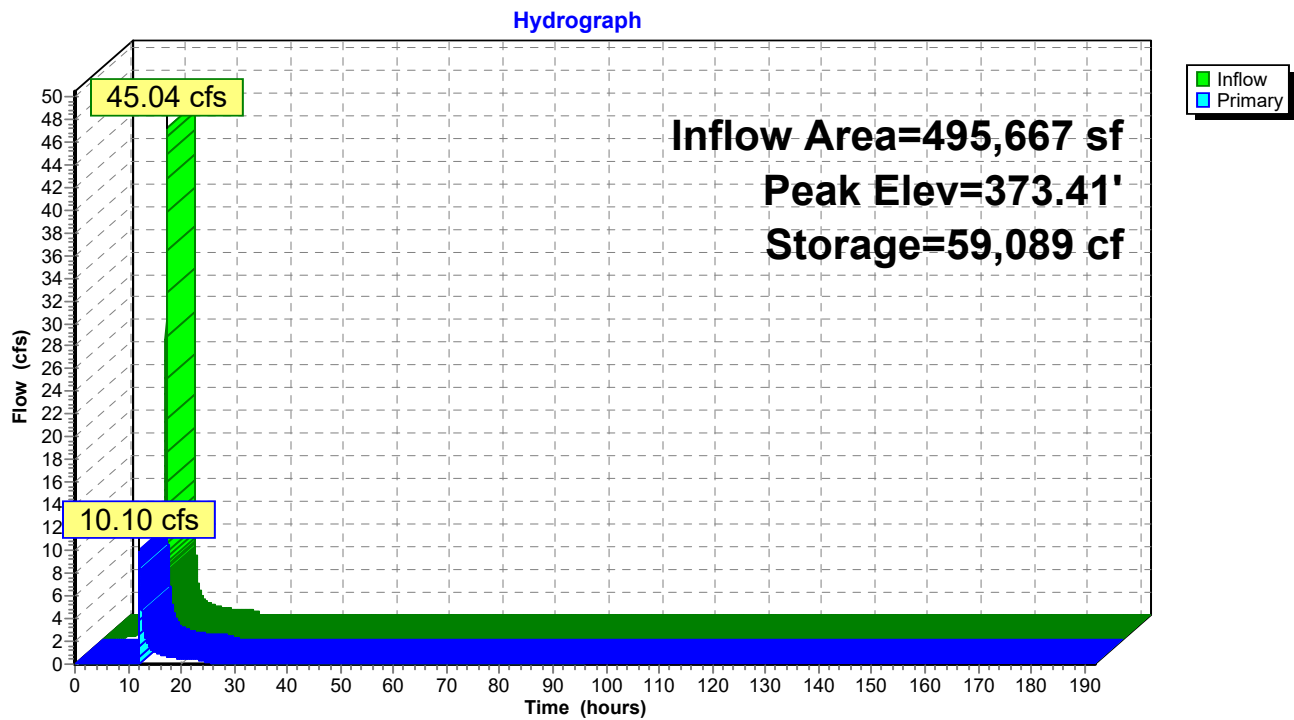
Primary OutFlow Max=10.09 cfs @ 12.09 hrs HW=373.41' TW=355.46' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 10.09 cfs of 61.02 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.06 fps)

3=Type M Overflow (Weir Controls 10.03 cfs @ 2.10 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

Prepared by S. Deisher, P.E. of JMR Engineering, LLC

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 1.80" for 2-yr event
 Inflow = 38.00 cfs @ 11.96 hrs, Volume= 85,816 cf
 Outflow = 2.80 cfs @ 12.54 hrs, Volume= 71,927 cf, Atten= 93%, Lag= 34.6 min
 Primary = 2.80 cfs @ 12.54 hrs, Volume= 71,927 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.17' @ 12.54 hrs Surf.Area= 54,667 sf Storage= 52,244 cf

Plug-Flow detention time= 2,757.9 min calculated for 71,927 cf (84% of inflow)
 Center-of-Mass det. time= 2,682.7 min (3,463.4 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

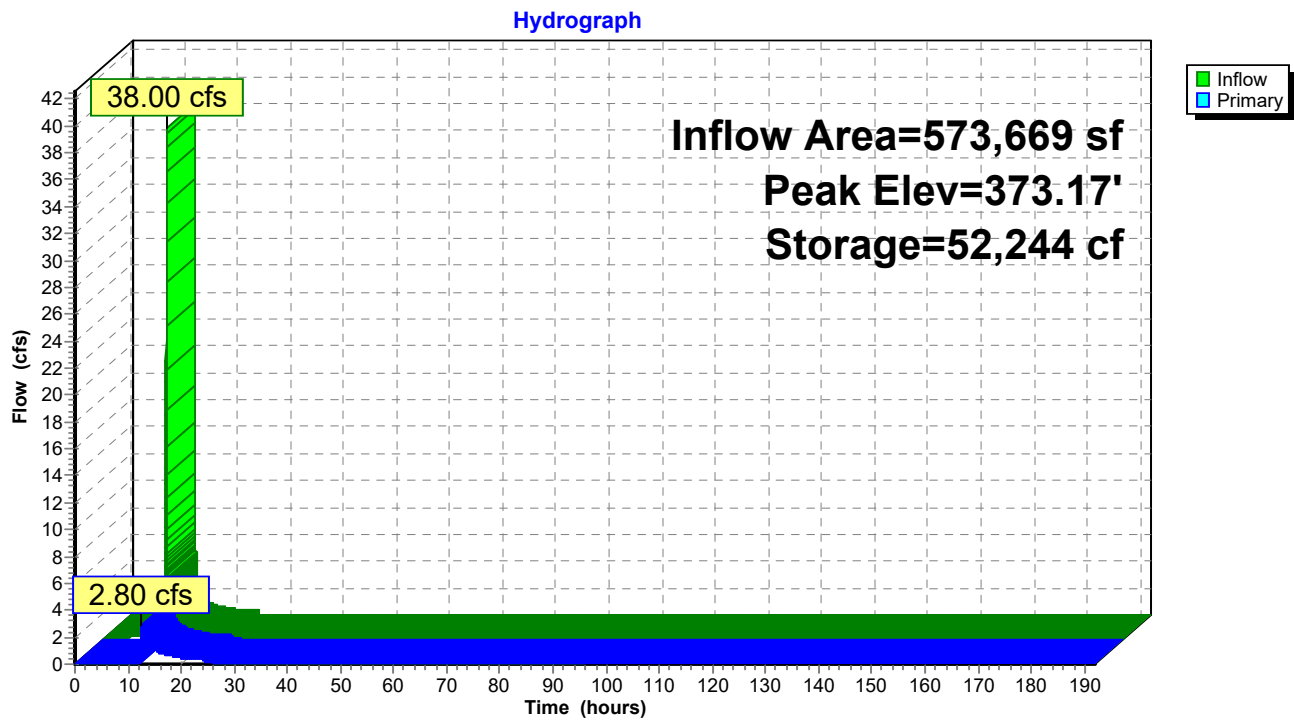
Primary OutFlow Max=2.80 cfs @ 12.54 hrs HW=373.17' TW=355.90' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 2.80 cfs of 58.70 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.78 fps)

3=Type M Overflow (Weir Controls 2.74 cfs @ 1.37 fps)

Pond SCM-5: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 2-yr Rainfall=3.24"*

Prepared by S. Deisher, P.E. of JMR Engineering, LLC

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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 0.95" for 2-yr event
 Inflow = 26.59 cfs @ 11.97 hrs, Volume= 61,303 cf
 Outflow = 8.94 cfs @ 12.07 hrs, Volume= 60,356 cf, Atten= 66%, Lag= 6.3 min
 Primary = 8.94 cfs @ 12.07 hrs, Volume= 60,356 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 368.38' @ 12.07 hrs Surf.Area= 24,147 sf Storage= 25,272 cf

Plug-Flow detention time= 1,499.4 min calculated for 60,352 cf (98% of inflow)
 Center-of-Mass det. time= 1,490.4 min (2,313.4 - 823.0)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 ' / ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=8.92 cfs @ 12.07 hrs HW=368.38' TW=355.43' (Dynamic Tailwater)

1=Outflow Pipe (Passes 8.92 cfs of 12.89 cfs potential flow)

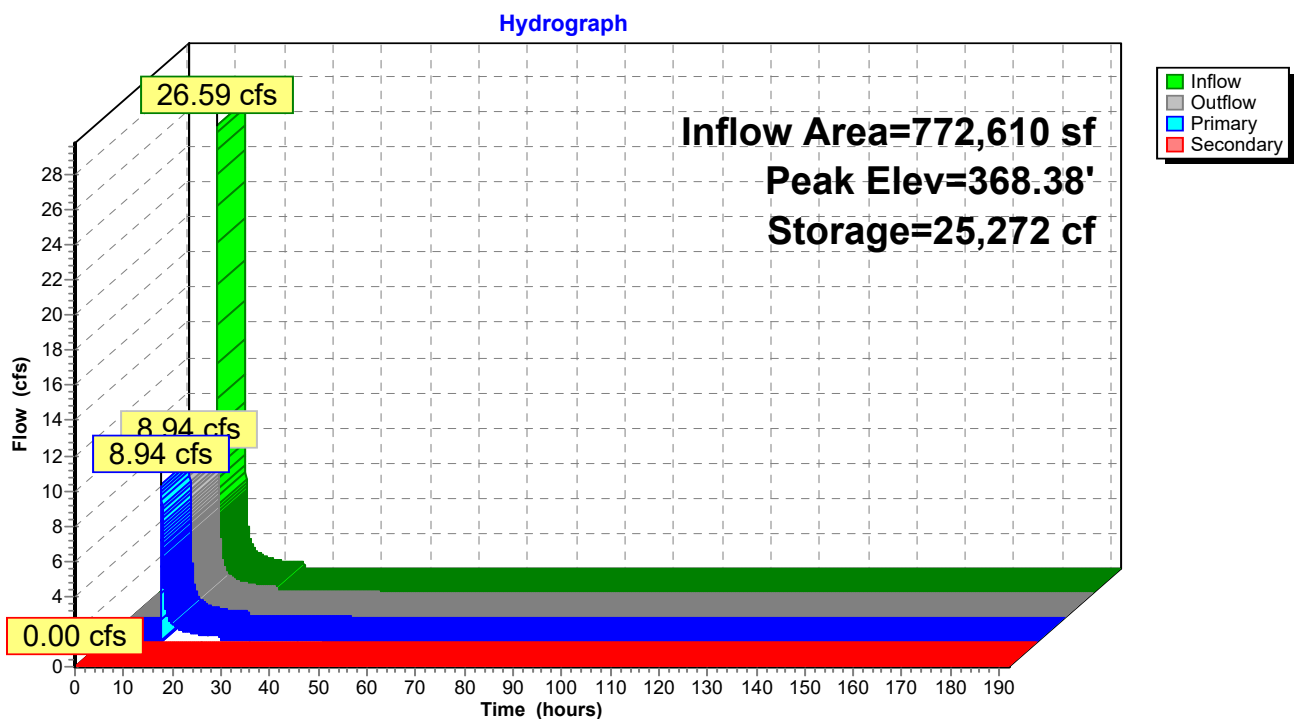
2=MRC Low Flow Orifice (Orifice Controls 0.05 cfs @ 10.03 fps)

3=Type M Overflow (Weir Controls 8.87 cfs @ 2.02 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=363.00' TW=355.00' (Dynamic Tailwater)

4=Spillway (Controls 0.00 cfs)

Pond SCM-6: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

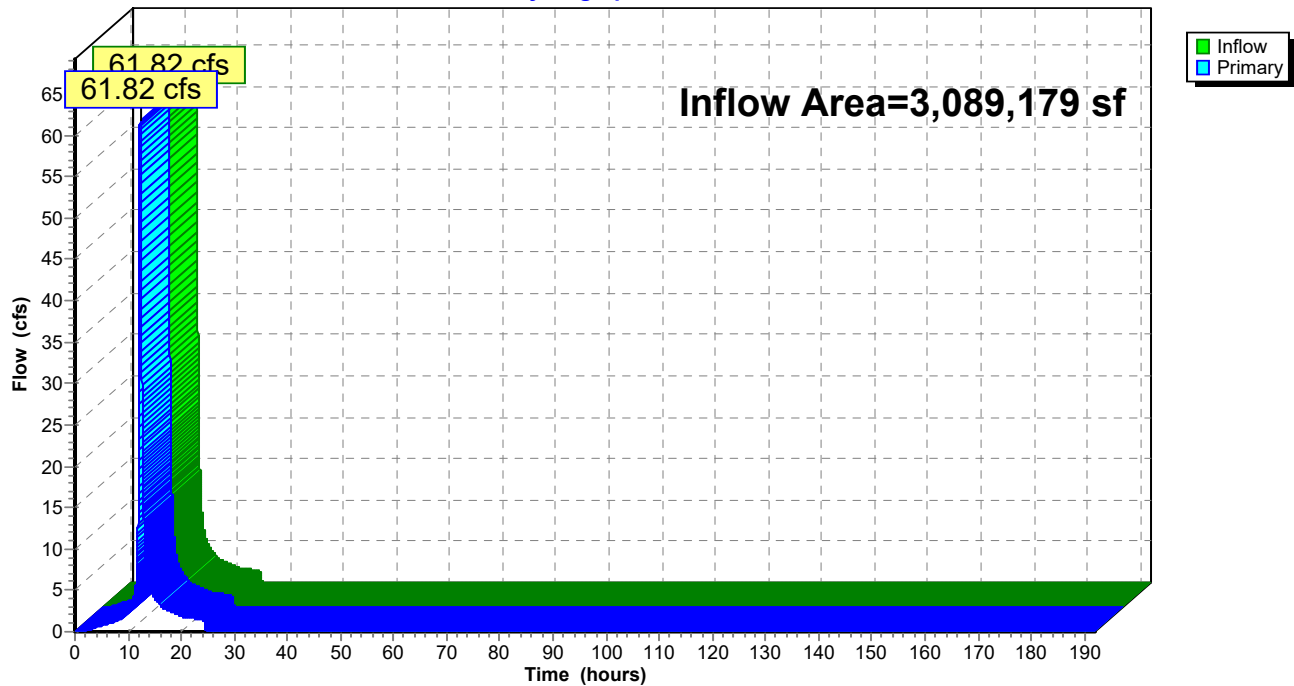
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 1.26" for 2-yr event
Inflow = 61.82 cfs @ 12.27 hrs, Volume= 323,867 cf
Primary = 61.82 cfs @ 12.27 hrs, Volume= 323,867 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

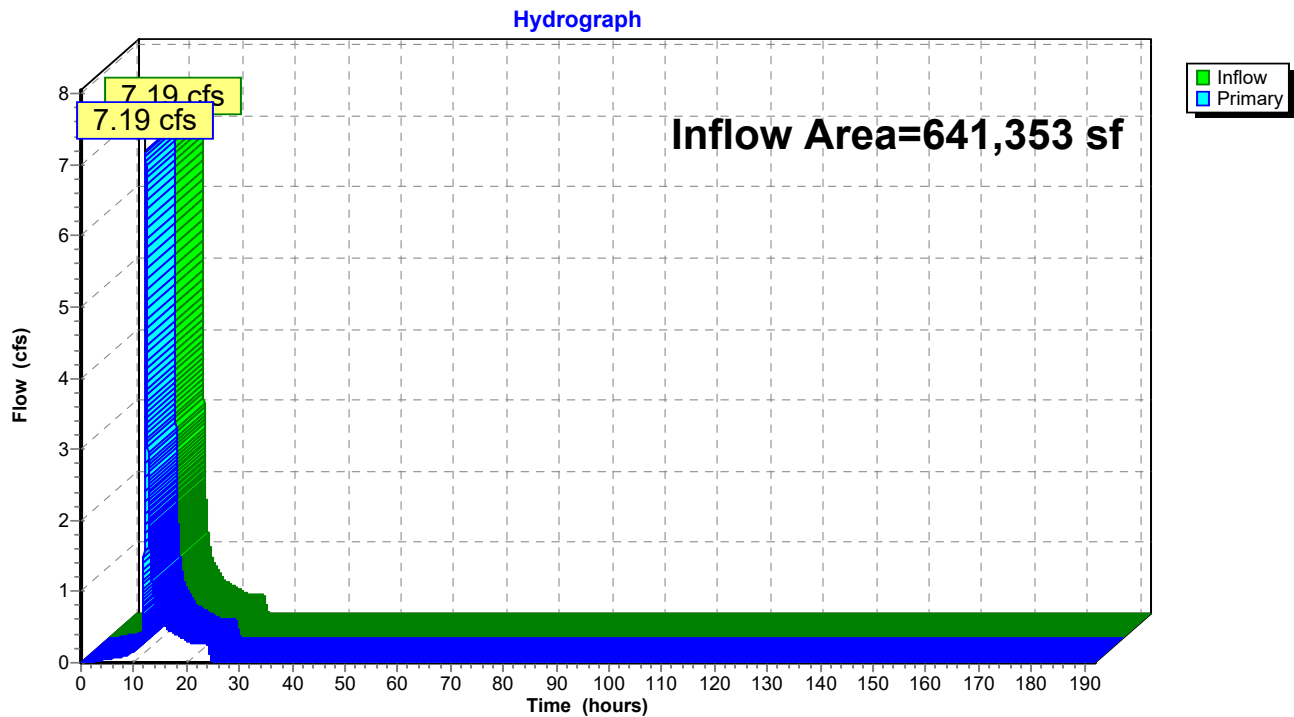
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 0.74" for 2-yr event
Inflow = 7.19 cfs @ 12.27 hrs, Volume= 39,511 cf
Primary = 7.19 cfs @ 12.27 hrs, Volume= 39,511 cf, Atten= 0%, Lag= 0.0 min

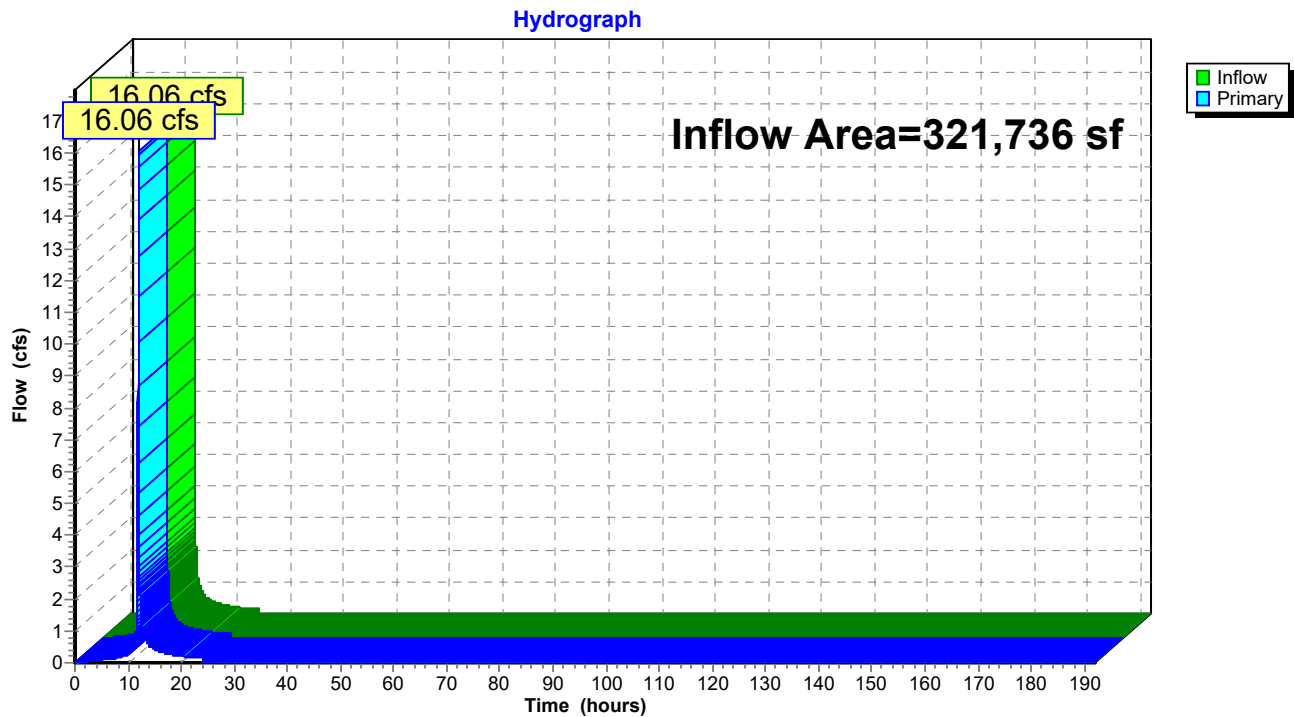
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 1.39" for 2-yr event
Inflow = 16.06 cfs @ 11.96 hrs, Volume= 37,230 cf
Primary = 16.06 cfs @ 11.96 hrs, Volume= 37,230 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

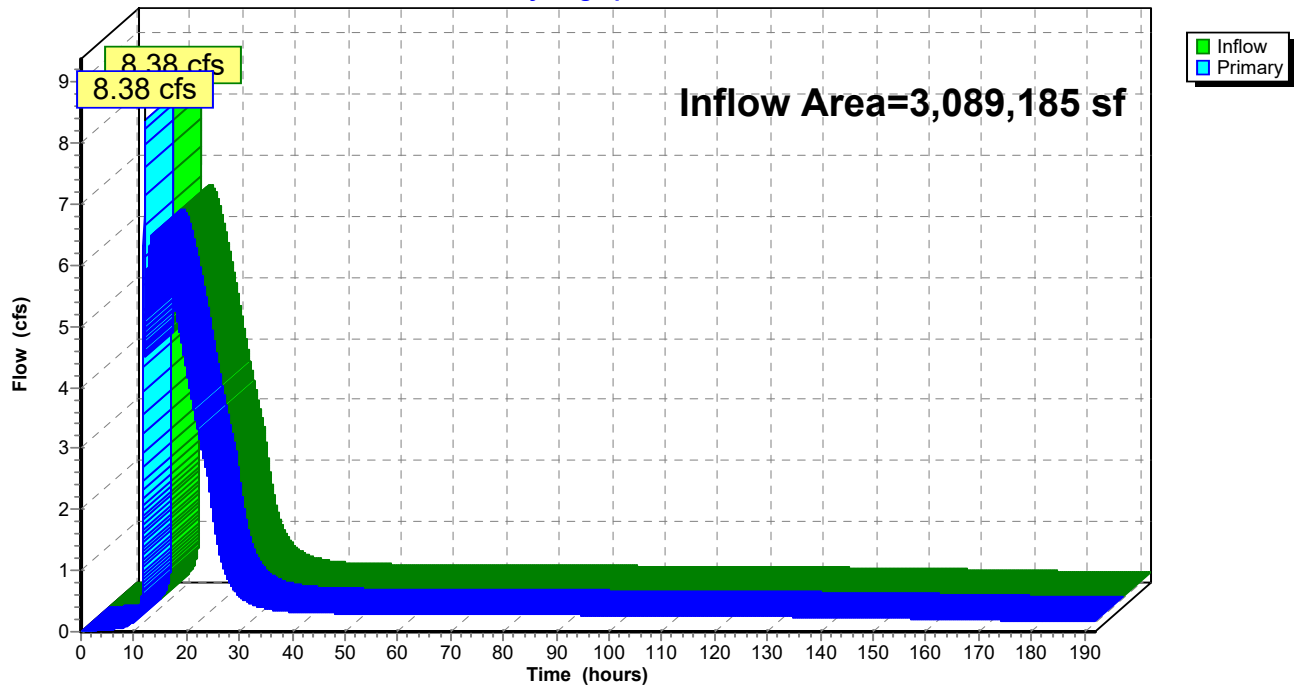
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 1.55" for 2-yr event
Inflow = 8.38 cfs @ 11.98 hrs, Volume= 399,654 cf
Primary = 8.38 cfs @ 11.98 hrs, Volume= 399,654 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 5.49 cfs @ 11.97 hrs, Volume= 11,706 cf, Depth= 0.93"

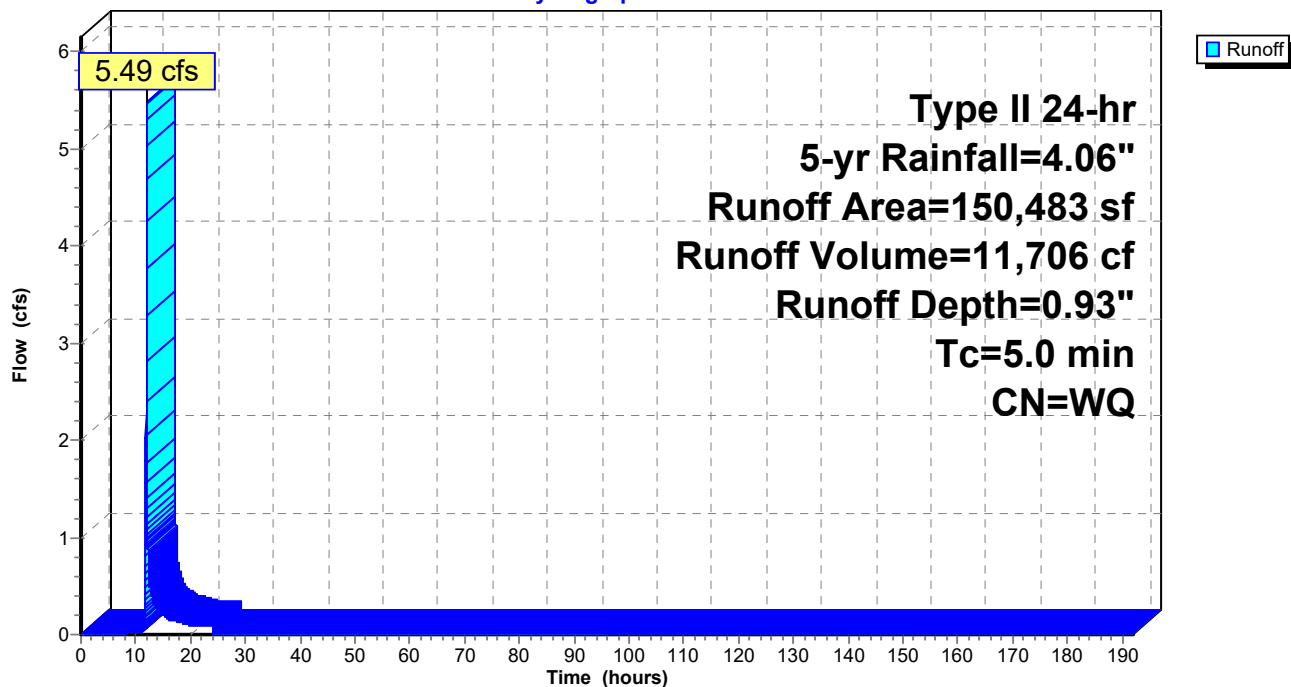
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 3.89 cfs @ 11.96 hrs, Volume= 9,073 cf, Depth= 3.72"

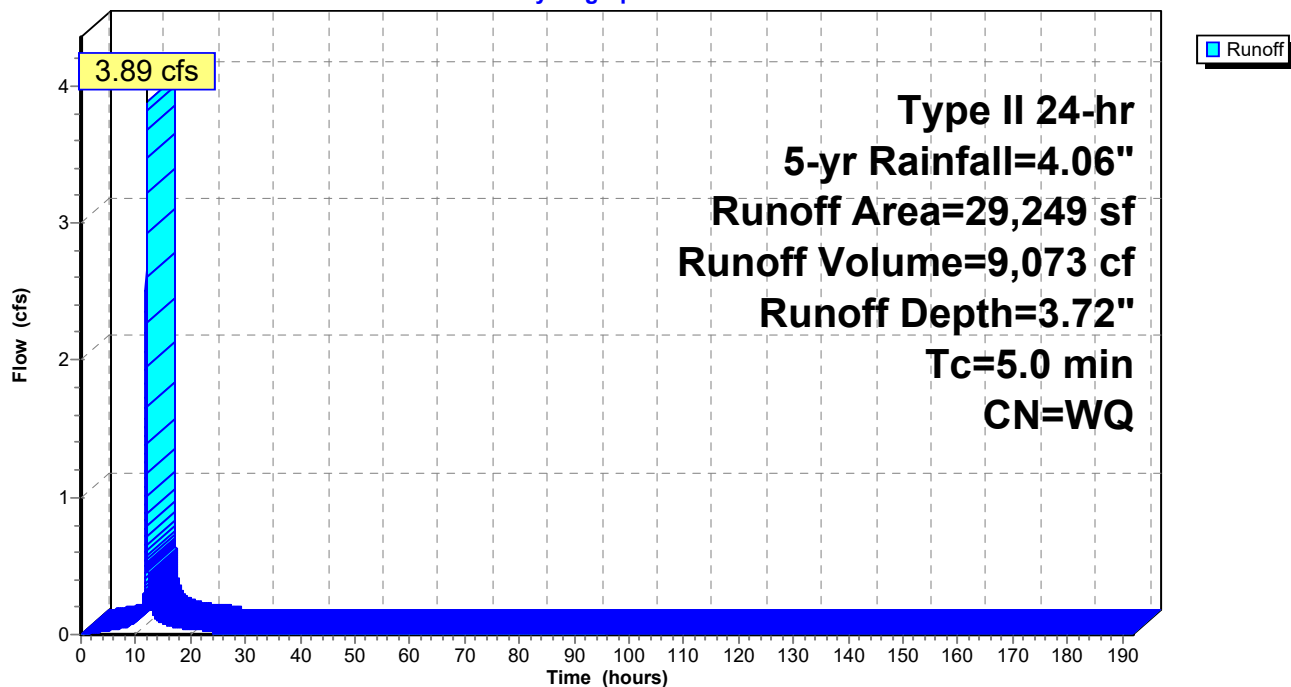
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

Hydrograph



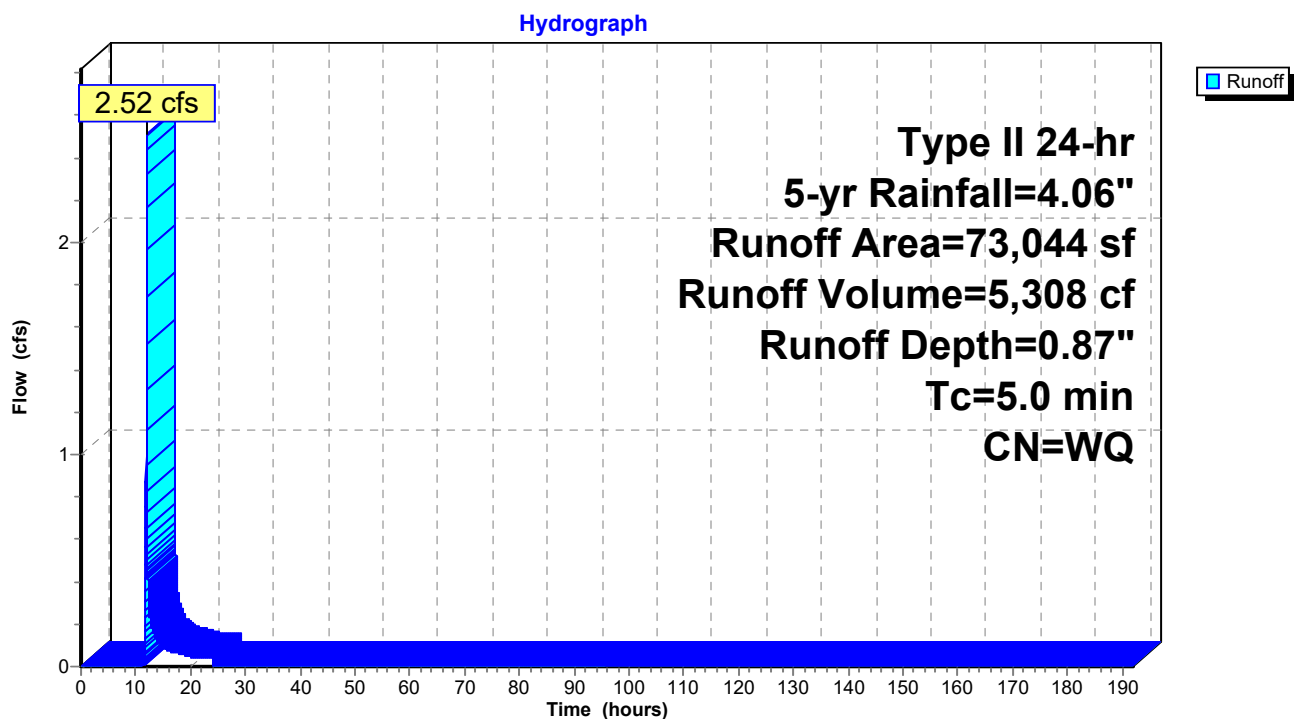
Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 2.52 cfs @ 11.97 hrs, Volume= 5,308 cf, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.50 cfs @ 11.96 hrs, Volume= 1,149 cf, Depth= 2.39"

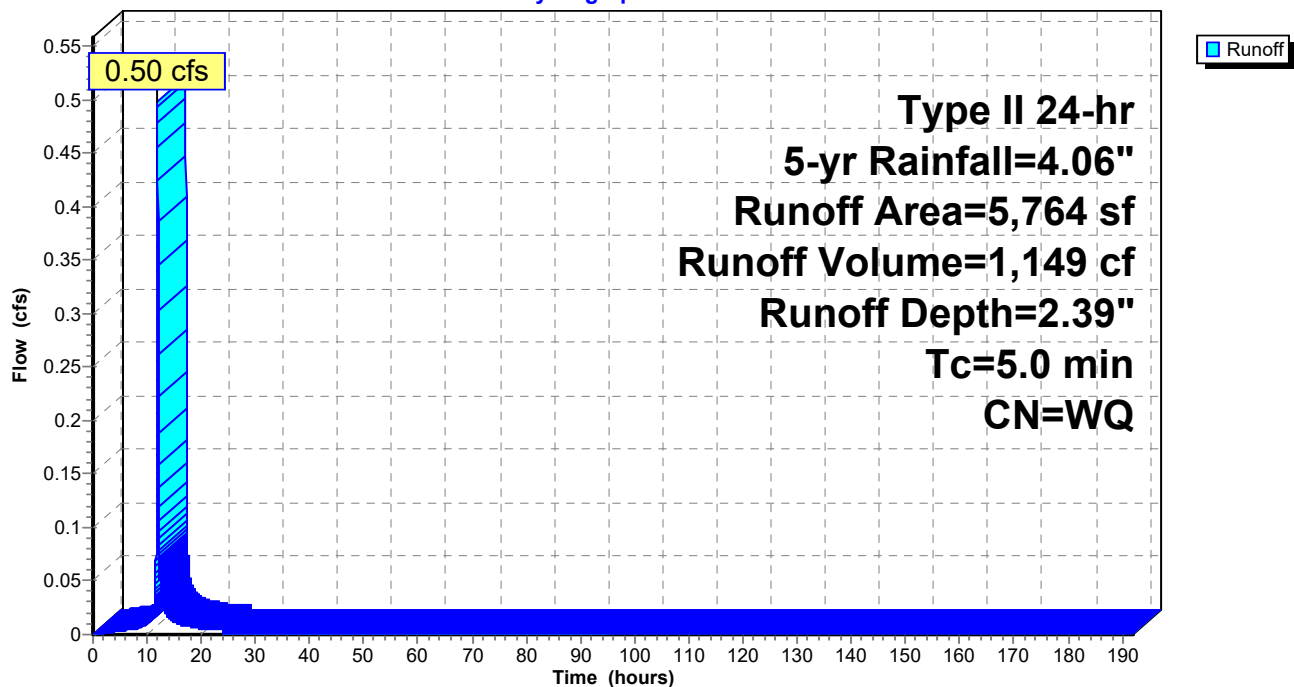
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 5-yr Rainfall=4.06"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 76.28 cfs @ 12.27 hrs, Volume= 391,482 cf, Depth= 1.92"

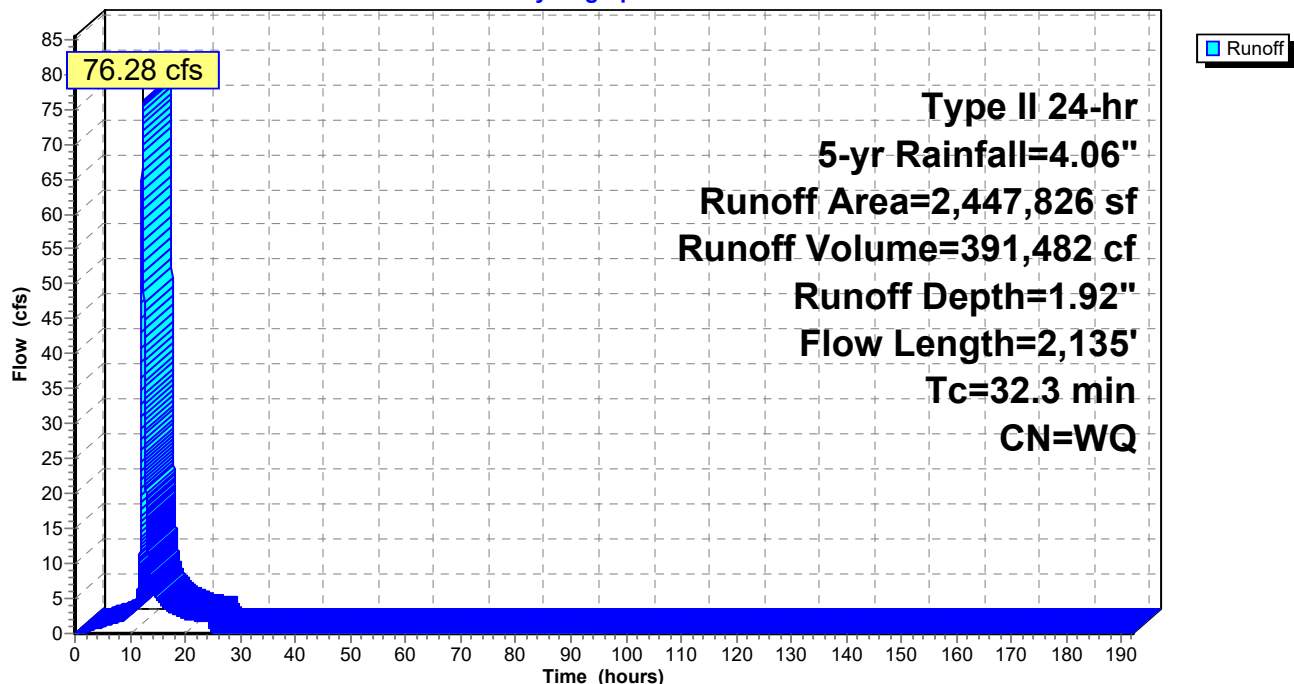
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 5-yr Rainfall=4.06"

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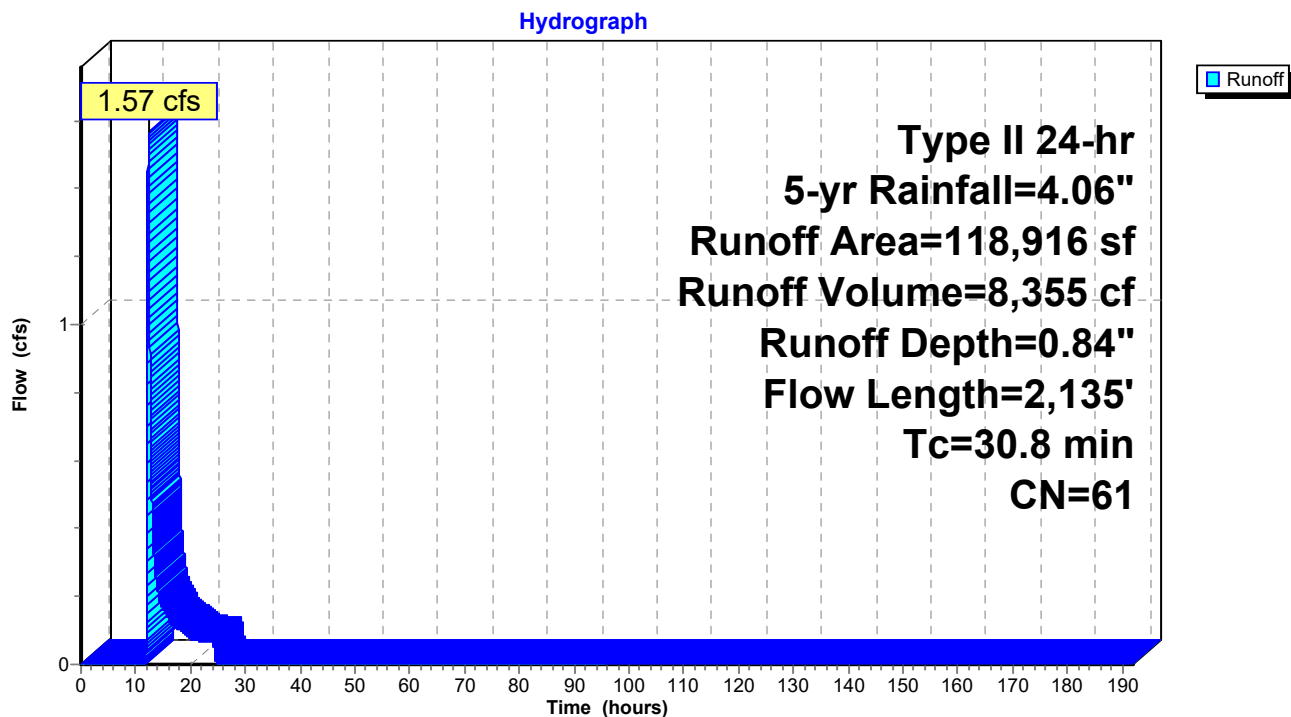
Summary for Subcatchment E2: PRE (OLOD)

Runoff = 1.57 cfs @ 12.29 hrs, Volume= 8,355 cf, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

2025-1201 SCS

Type II 24-hr 5-yr Rainfall=4.06"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 11.11 cfs @ 12.25 hrs, Volume= 54,156 cf, Depth= 1.24"

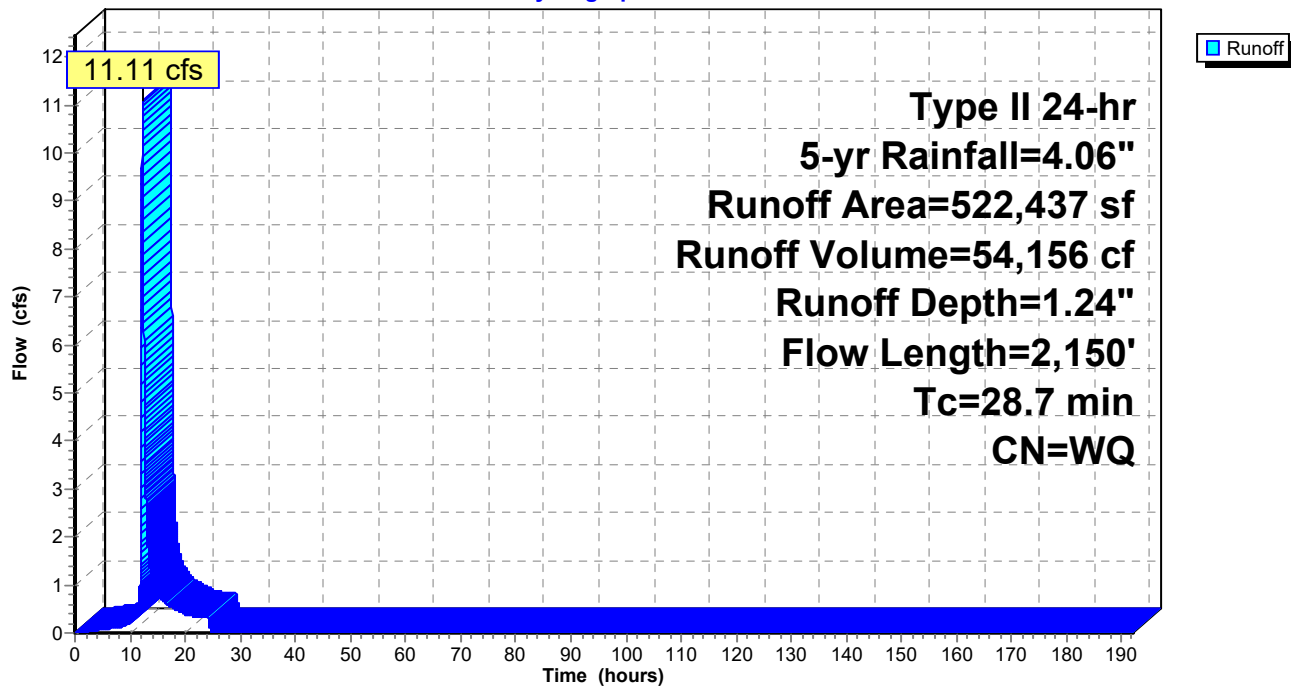
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



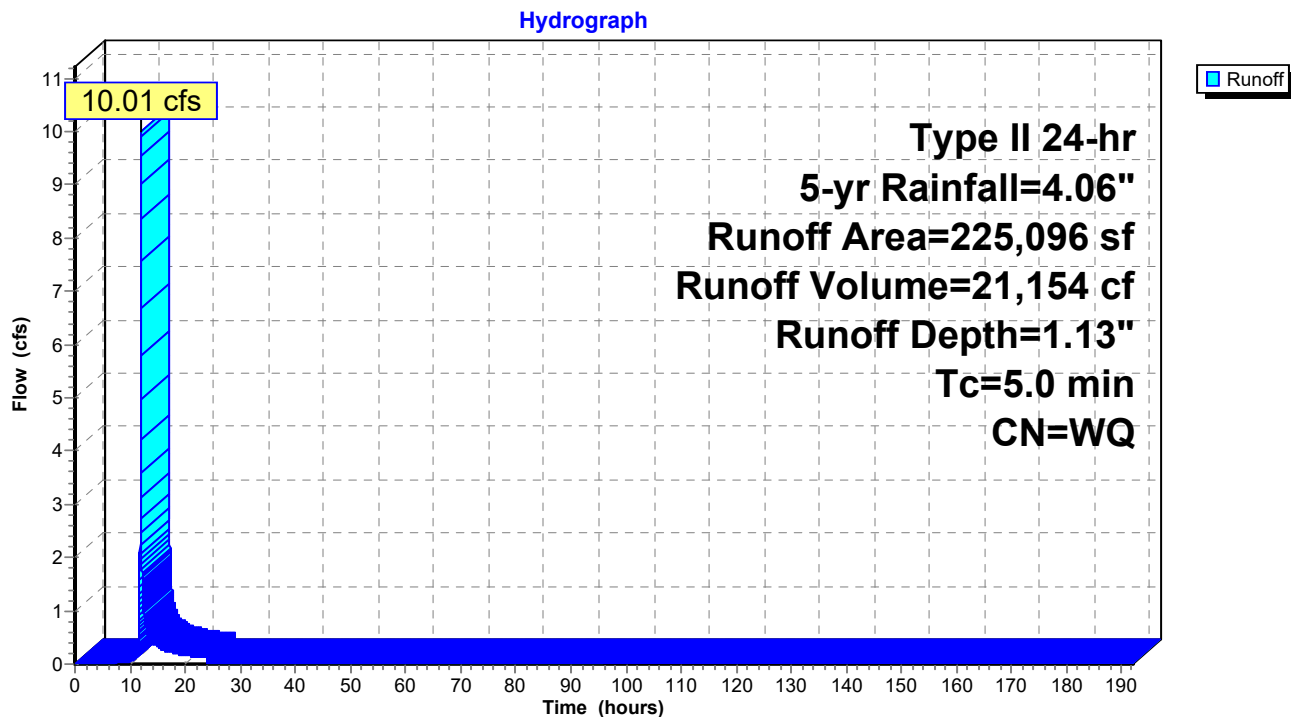
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 10.01 cfs @ 11.97 hrs, Volume= 21,154 cf, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 13.20 cfs @ 11.96 hrs, Volume= 30,804 cf, Depth= 3.82"

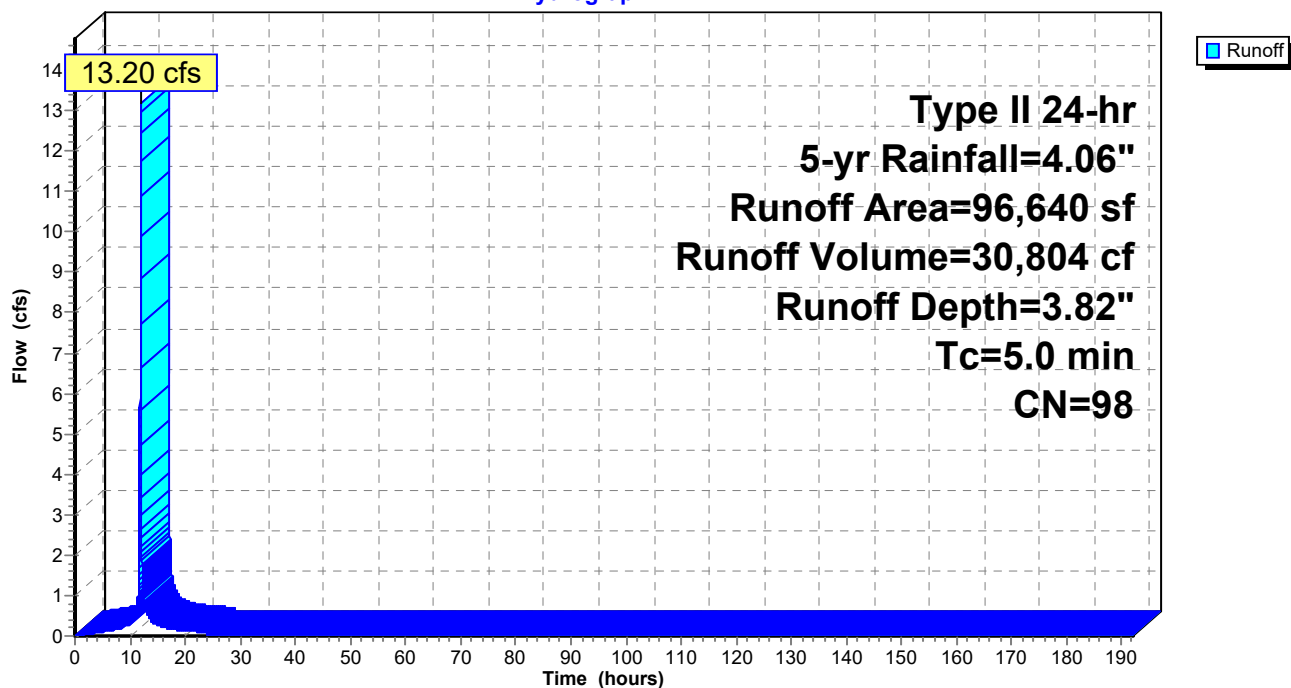
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 24.53 cfs @ 11.97 hrs, Volume= 54,156 cf, Depth= 1.24"

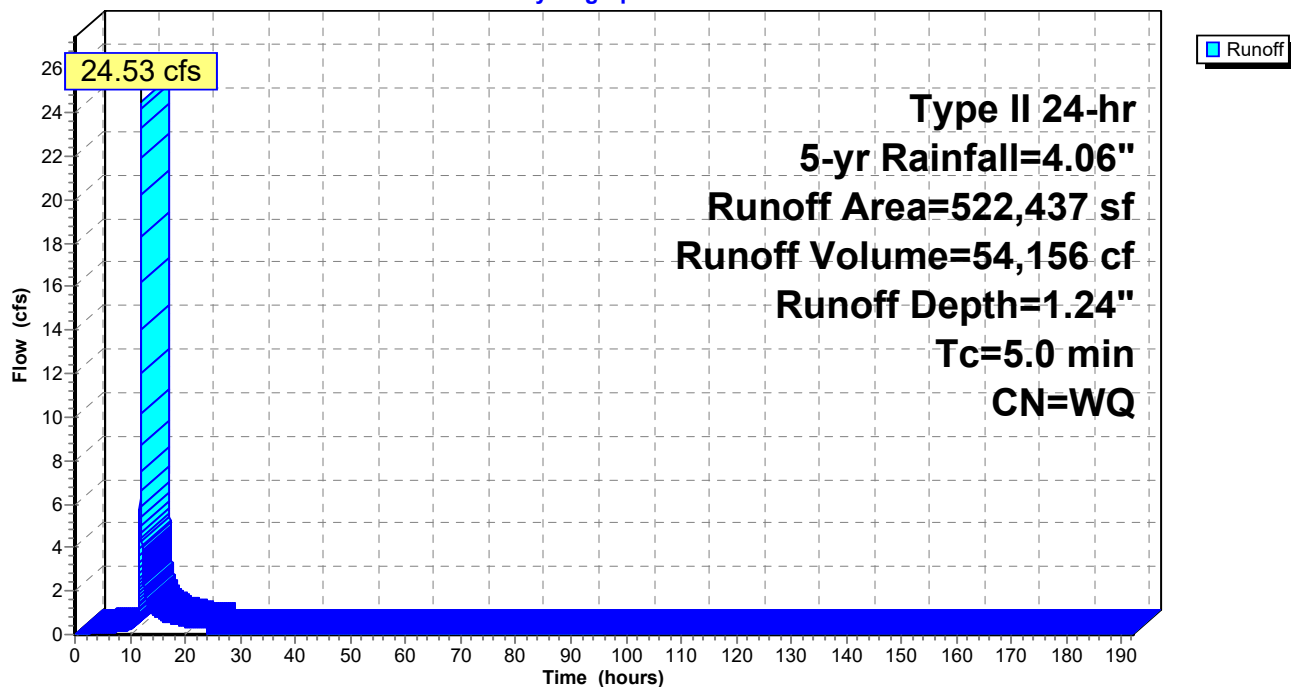
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 3.98 cfs @ 11.97 hrs, Volume= 8,355 cf, Depth= 0.84"

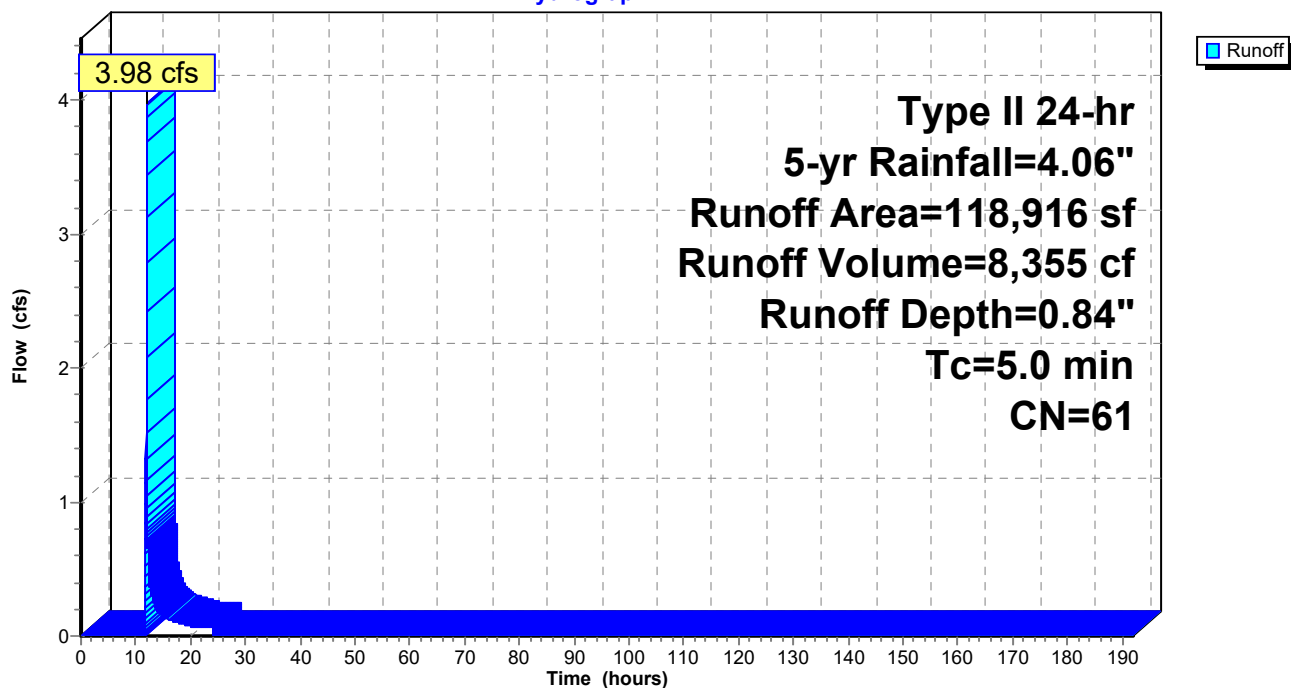
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Hydrograph



Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 40.63 cfs @ 11.96 hrs, Volume= 94,597 cf, Depth= 3.43"

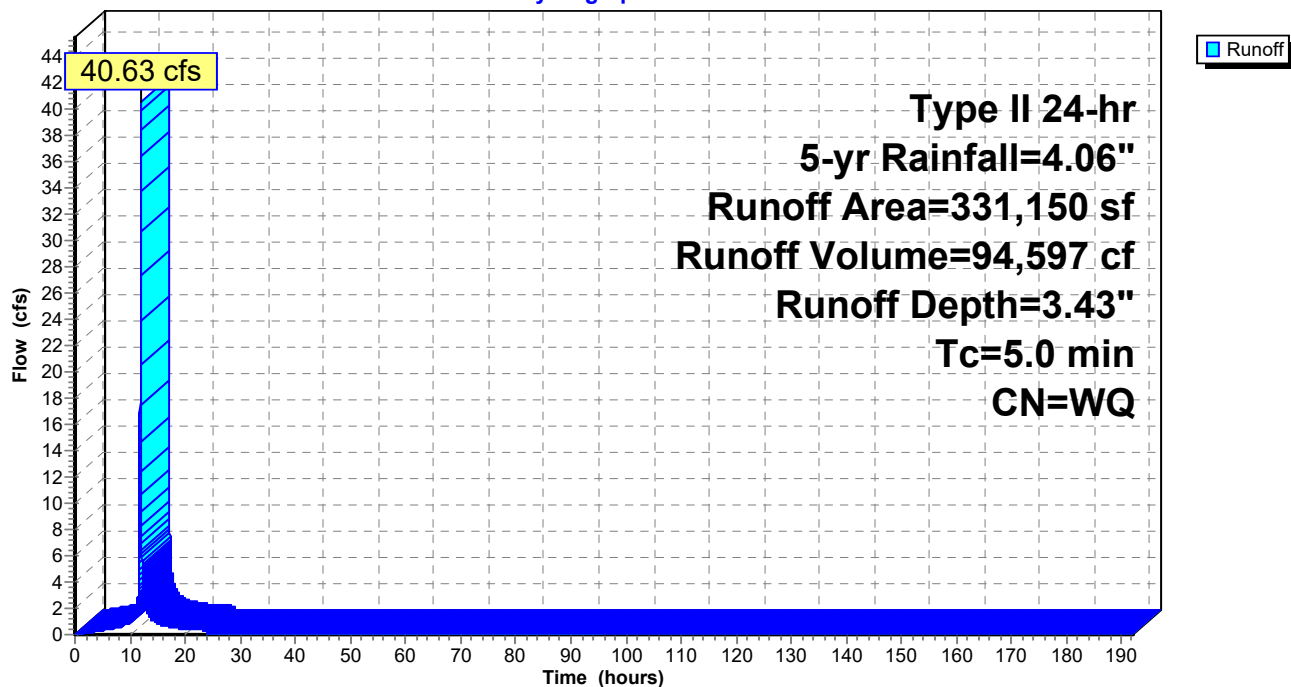
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 5-yr Rainfall=4.06"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 38.08 cfs @ 11.96 hrs, Volume= 86,642 cf, Depth= 3.10"

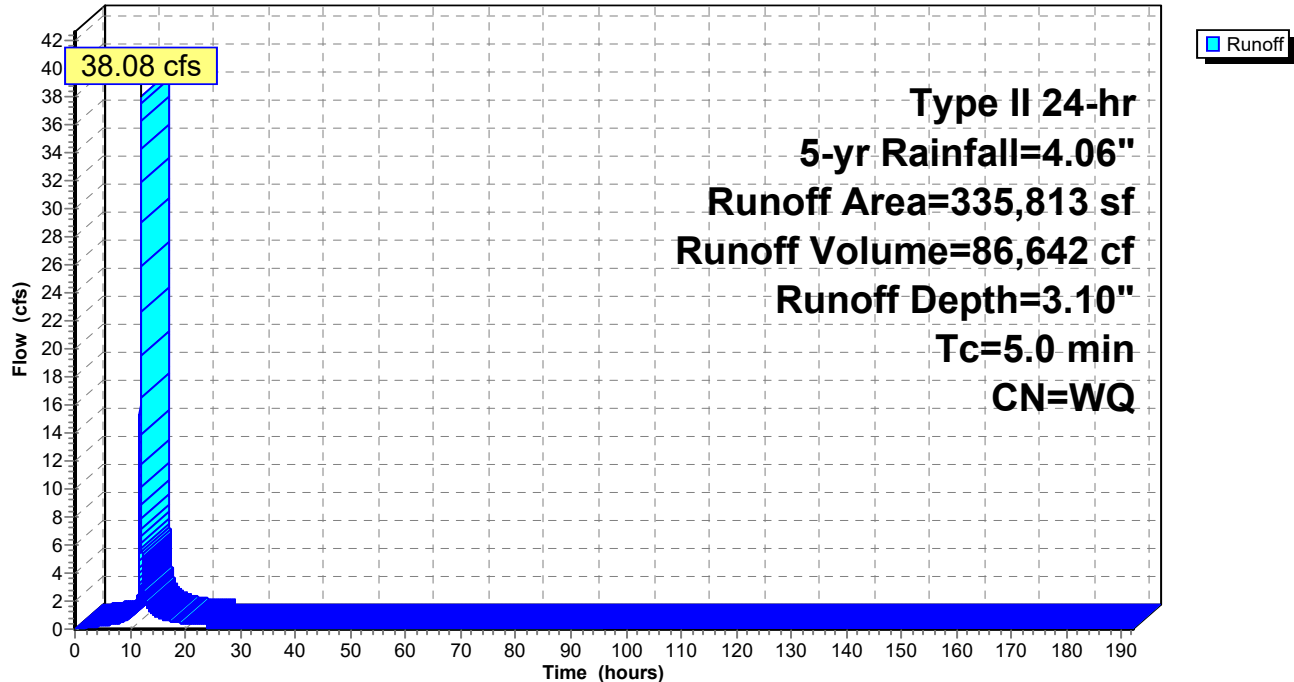
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
	57,394	61	>75% Grass cover, Good, HSG B
*	188,667	98	Building
*	19,774	98	Impervious
*	13,923	98	Generators
*	56,055	85	Gravel
	335,813		Weighted Average
	113,449	73	33.78% Pervious Area
	222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



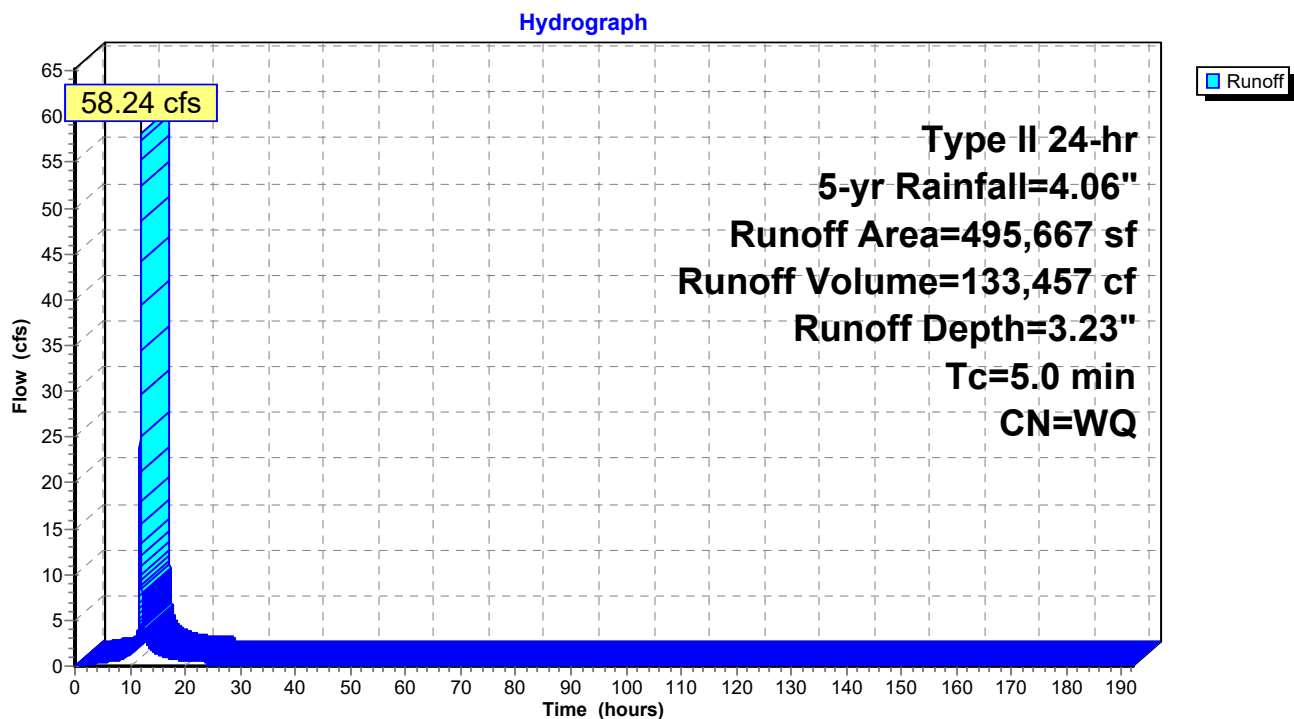
Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 58.24 cfs @ 11.96 hrs, Volume= 133,457 cf, Depth= 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

2025-1201 SCS

Type II 24-hr 5-yr Rainfall=4.06"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 48.05 cfs @ 11.96 hrs, Volume= 107,686 cf, Depth= 2.84"

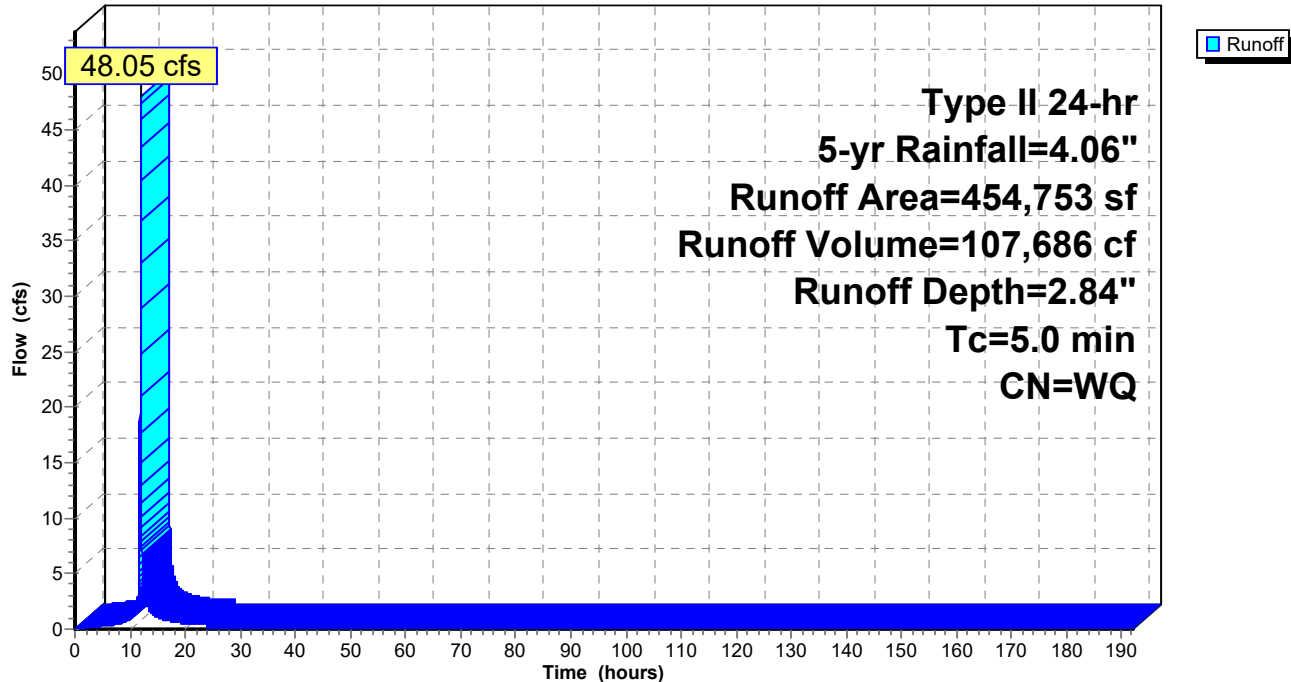
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 17.74 cfs @ 11.96 hrs, Volume= 37,898 cf, Depth= 1.82"

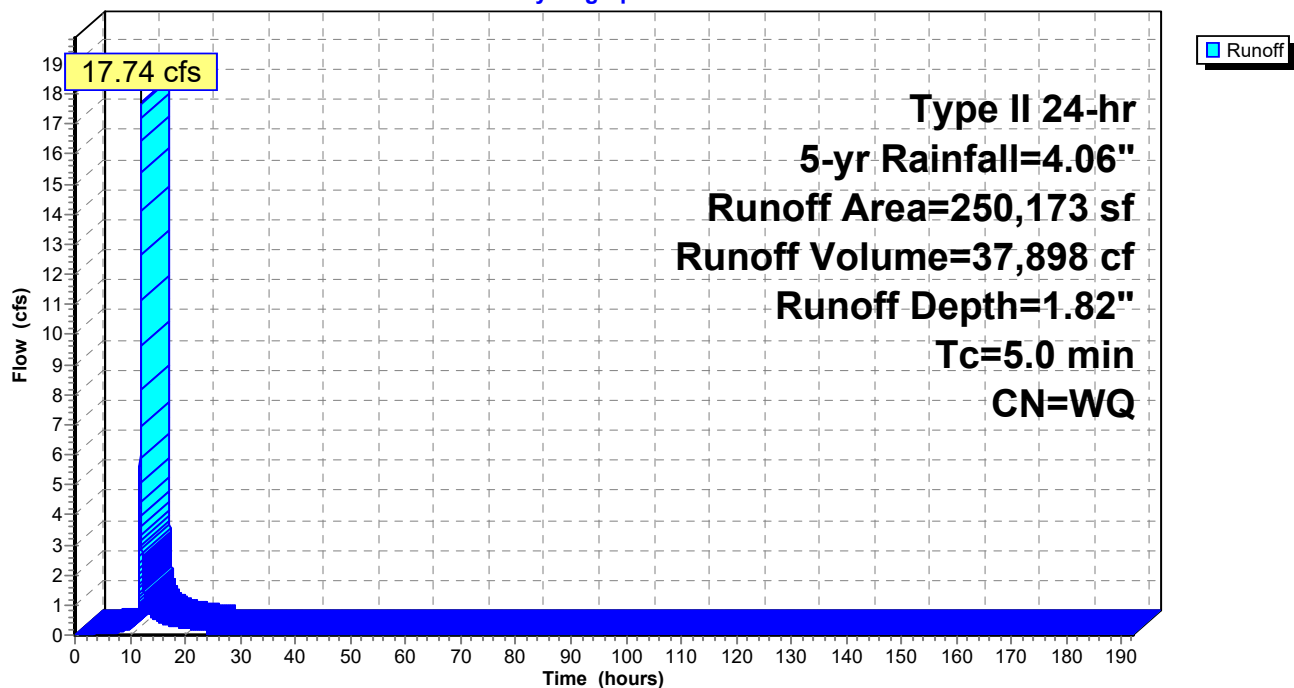
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-yr Rainfall=4.06"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Hydrograph



Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 2.27" for 5-yr event
 Inflow = 98.50 cfs @ 12.04 hrs, Volume= 536,497 cf
 Outflow = 12.03 cfs @ 13.41 hrs, Volume= 529,580 cf, Atten= 88%, Lag= 82.3 min
 Primary = 12.03 cfs @ 13.41 hrs, Volume= 529,580 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 357.24' @ 13.41 hrs Surf.Area= 80,614 sf Storage= 168,478 cf

Plug-Flow detention time= 339.4 min calculated for 529,580 cf (99% of inflow)
 Center-of-Mass det. time= 223.8 min (2,529.6 - 2,305.7)

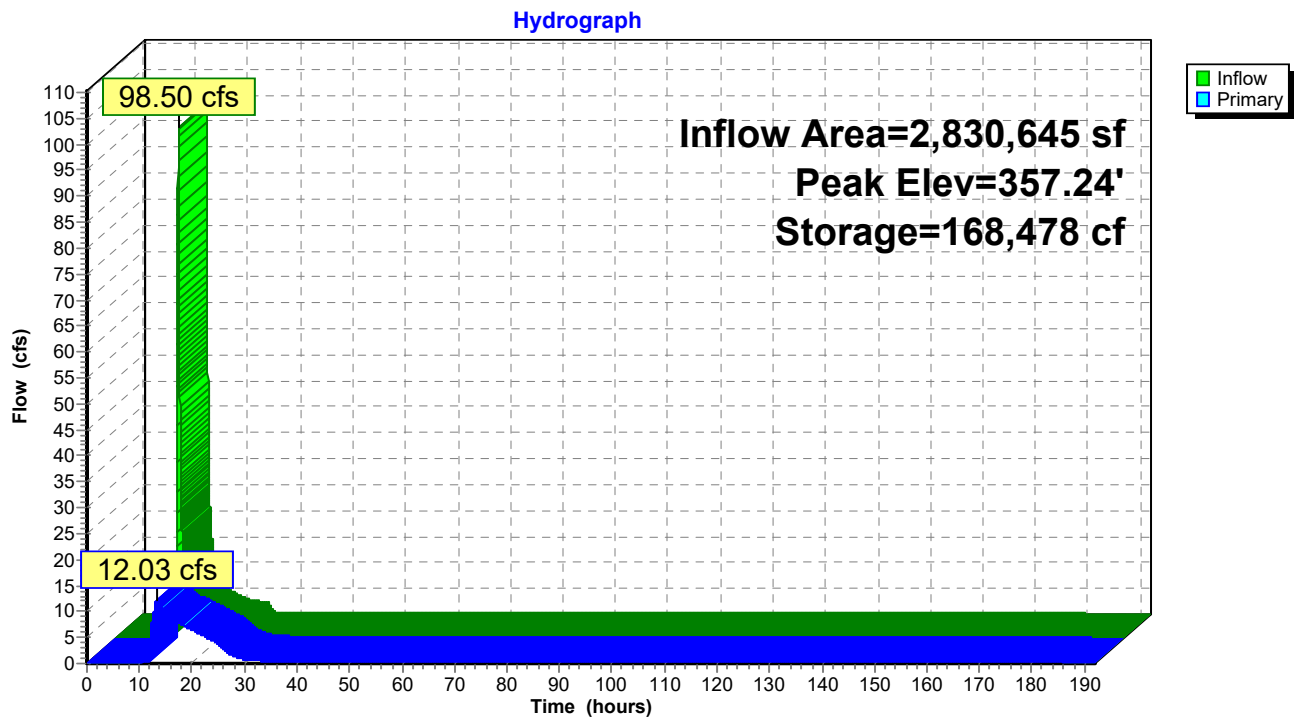
Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=12.03 cfs @ 13.41 hrs HW=357.24' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 12.03 cfs of 128.84 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 8.99 cfs @ 6.73 fps)
 3=19"Wx30"H Weir (Orifice Controls 3.04 cfs @ 1.58 fps)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

2025-1201 SCS*Type II 24-hr 5-yr Rainfall=4.06"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 3.43" for 5-yr event
 Inflow = 40.63 cfs @ 11.96 hrs, Volume= 94,597 cf
 Outflow = 24.70 cfs @ 12.03 hrs, Volume= 92,684 cf, Atten= 39%, Lag= 4.3 min
 Primary = 24.70 cfs @ 12.03 hrs, Volume= 92,684 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.75' @ 12.03 hrs Surf.Area= 37,882 sf Storage= 45,914 cf

Plug-Flow detention time= 1,673.1 min calculated for 92,679 cf (98% of inflow)
 Center-of-Mass det. time= 1,660.2 min (2,411.5 - 751.3)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=24.68 cfs @ 12.03 hrs HW=361.75' TW=355.70' (Dynamic Tailwater)

1=Outflow Pipe (Passes 24.68 cfs of 70.20 cfs potential flow)

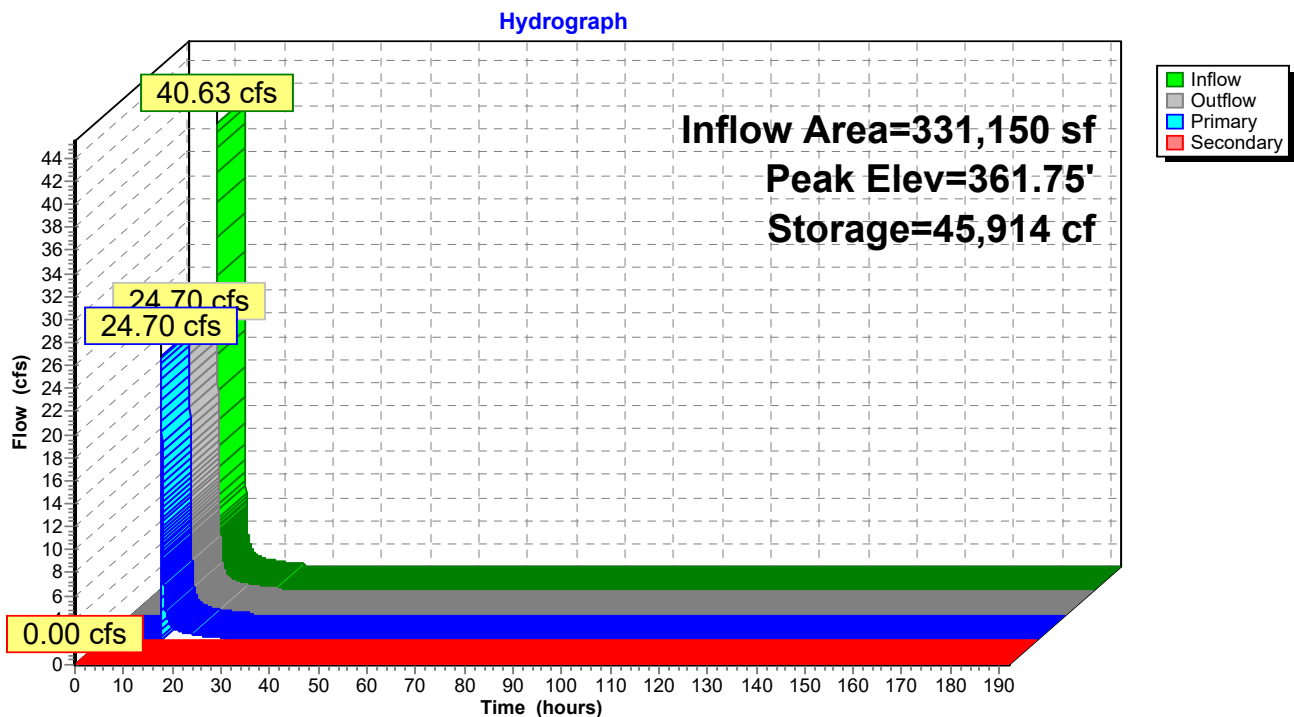
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.45 fps)

3=Type M Overflow (Weir Controls 24.61 cfs @ 2.84 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-2: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 5-yr Rainfall=4.06"*

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 3.10" for 5-yr event
 Inflow = 38.08 cfs @ 11.96 hrs, Volume= 86,642 cf
 Outflow = 9.75 cfs @ 12.08 hrs, Volume= 79,092 cf, Atten= 74%, Lag= 7.5 min
 Primary = 9.75 cfs @ 12.08 hrs, Volume= 79,092 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.40' @ 12.08 hrs Surf.Area= 44,097 sf Storage= 48,973 cf

Plug-Flow detention time= 2,391.0 min calculated for 79,092 cf (91% of inflow)
 Center-of-Mass det. time= 2,343.4 min (3,105.4 - 762.0)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=9.74 cfs @ 12.08 hrs HW=361.40' TW=355.95' (Dynamic Tailwater)

1=Outflow Pipe (Passes 9.74 cfs of 67.25 cfs potential flow)

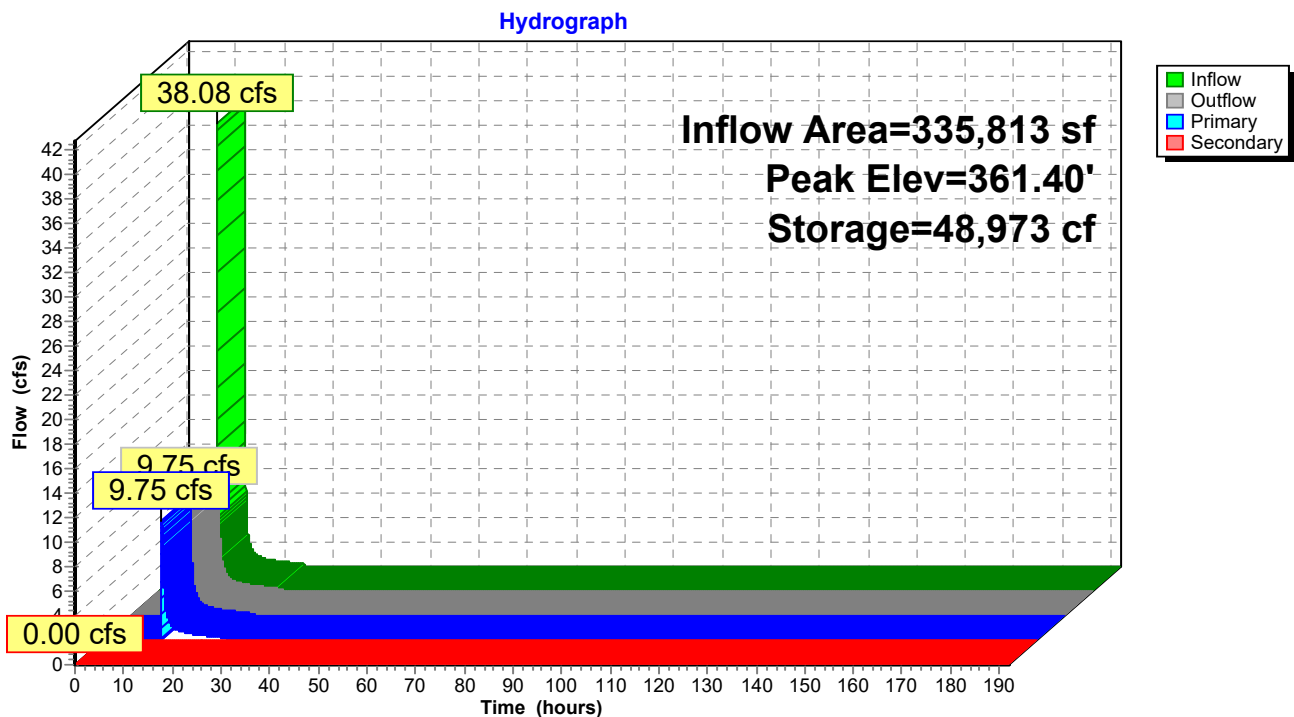
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.05 fps)

3=Type M Overflow (Weir Controls 9.67 cfs @ 2.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-3: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 5-yr Rainfall=4.06"*

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Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 3.23" for 5-yr event
 Inflow = 58.24 cfs @ 11.96 hrs, Volume= 133,457 cf
 Outflow = 25.61 cfs @ 12.05 hrs, Volume= 119,537 cf, Atten= 56%, Lag= 5.5 min
 Primary = 25.61 cfs @ 12.05 hrs, Volume= 119,537 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.77' @ 12.05 hrs Surf.Area= 57,300 sf Storage= 69,770 cf

Plug-Flow detention time= 1,697.2 min calculated for 119,537 cf (90% of inflow)
 Center-of-Mass det. time= 1,642.6 min (2,400.9 - 758.2)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

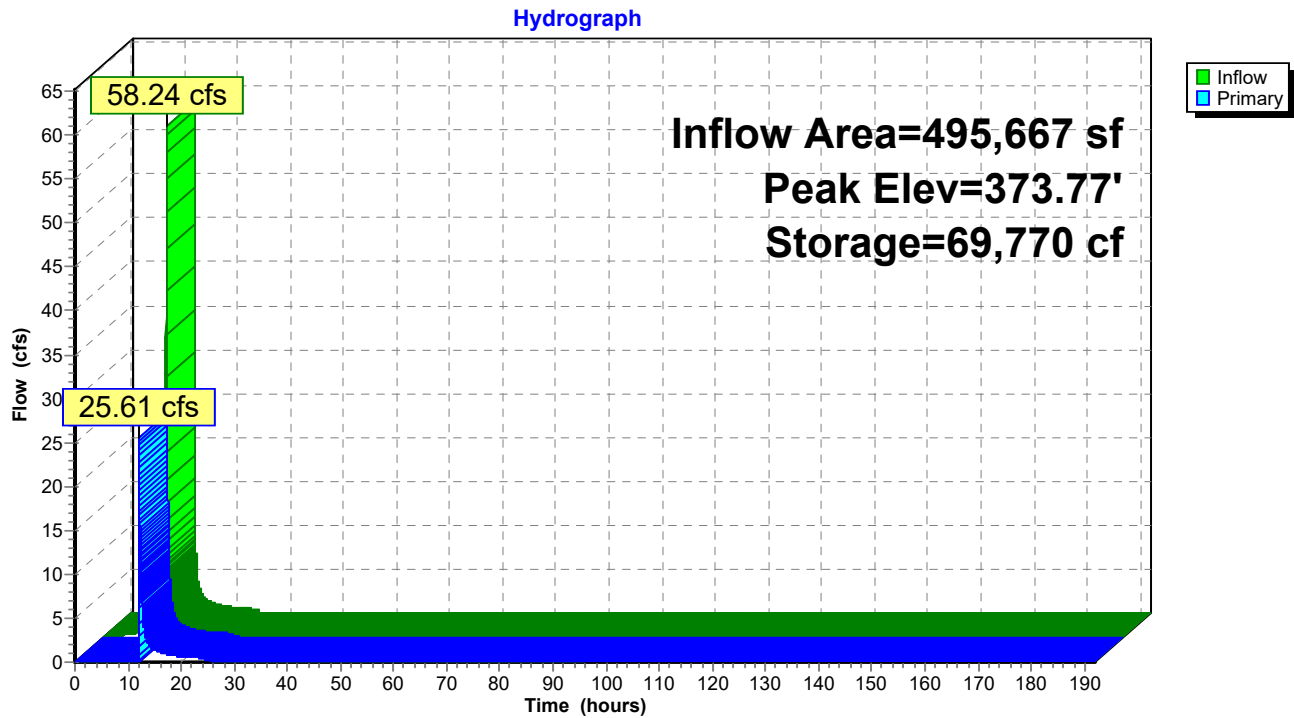
Primary OutFlow Max=25.61 cfs @ 12.05 hrs HW=373.77' TW=355.80' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 25.61 cfs of 64.33 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.47 fps)

3=Type M Overflow (Weir Controls 25.54 cfs @ 2.87 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 5-yr Rainfall=4.06"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 2.43" for 5-yr event
 Inflow = 51.92 cfs @ 11.96 hrs, Volume= 116,041 cf
 Outflow = 13.12 cfs @ 12.09 hrs, Volume= 102,120 cf, Atten= 75%, Lag= 7.6 min
 Primary = 13.12 cfs @ 12.09 hrs, Volume= 102,120 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.49' @ 12.09 hrs Surf.Area= 56,073 sf Storage= 61,408 cf

Plug-Flow detention time= 1,967.9 min calculated for 102,120 cf (88% of inflow)
 Center-of-Mass det. time= 1,906.9 min (2,685.3 - 778.4)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

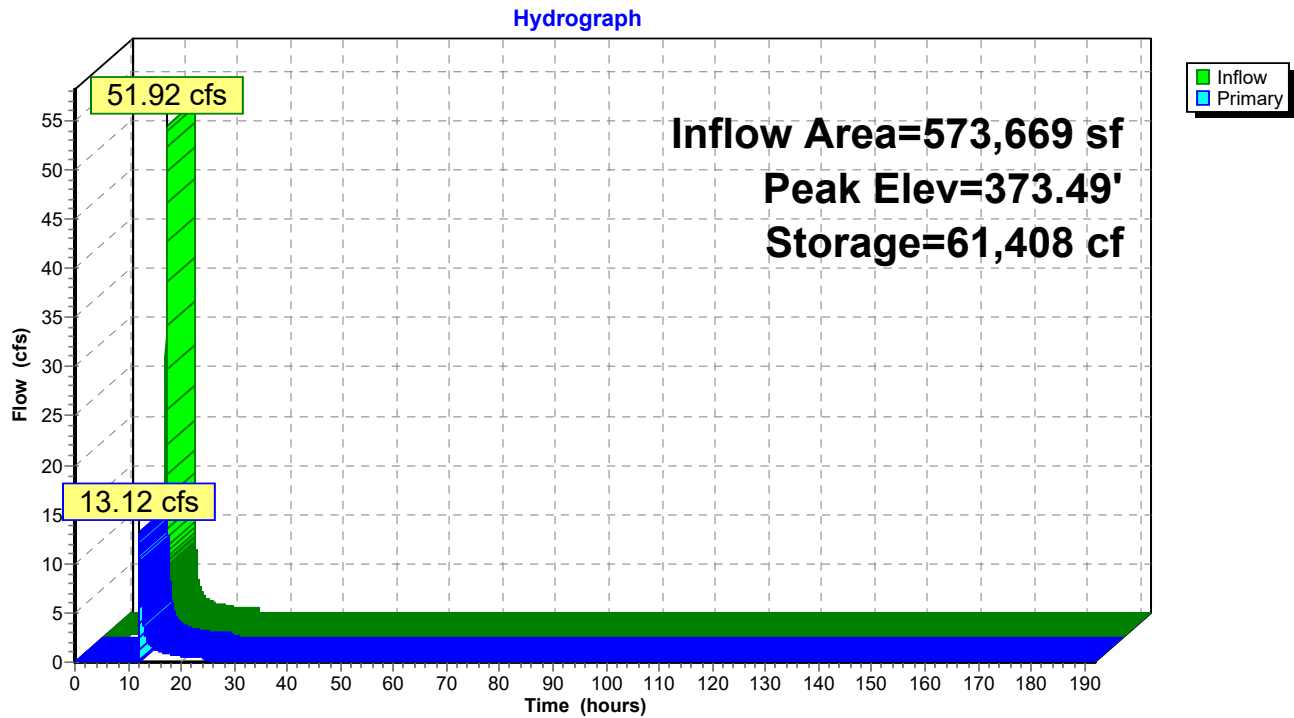
Primary OutFlow Max=13.11 cfs @ 12.09 hrs HW=373.49' TW=355.96' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 13.11 cfs of 61.77 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.15 fps)

3=Type M Overflow (Weir Controls 13.04 cfs @ 2.30 fps)

Pond SCM-5: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 5-yr Rainfall=4.06"*

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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 1.43" for 5-yr event
 Inflow = 42.24 cfs @ 11.97 hrs, Volume= 92,055 cf
 Outflow = 16.78 cfs @ 12.06 hrs, Volume= 91,107 cf, Atten= 60%, Lag= 5.7 min
 Primary = 13.80 cfs @ 12.06 hrs, Volume= 90,454 cf
 Secondary = 2.98 cfs @ 12.06 hrs, Volume= 653 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 369.08' @ 12.06 hrs Surf.Area= 26,210 sf Storage= 34,347 cf

Plug-Flow detention time= 1,004.5 min calculated for 91,107 cf (99% of inflow)
 Center-of-Mass det. time= 998.2 min (1,818.5 - 820.3)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 1' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=13.80 cfs @ 12.06 hrs HW=369.08' TW=355.86' (Dynamic Tailwater)

1=Outflow Pipe (Inlet Controls 13.80 cfs @ 11.25 fps)

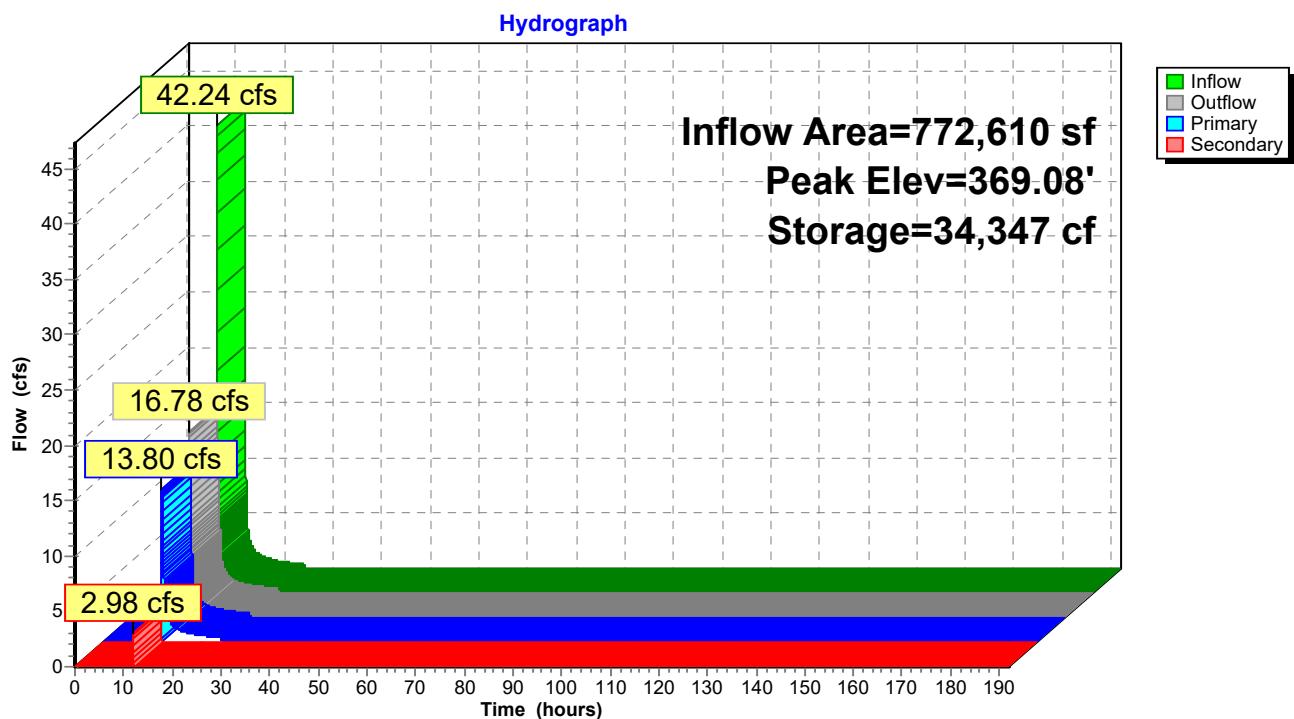
2=MRC Low Flow Orifice (Passes < 0.06 cfs potential flow)

3=Type M Overflow (Passes < 37.53 cfs potential flow)

Secondary OutFlow Max=2.95 cfs @ 12.06 hrs HW=369.08' TW=355.86' (Dynamic Tailwater)

4=Spillway (Weir Controls 2.95 cfs @ 0.74 fps)

Pond SCM-6: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

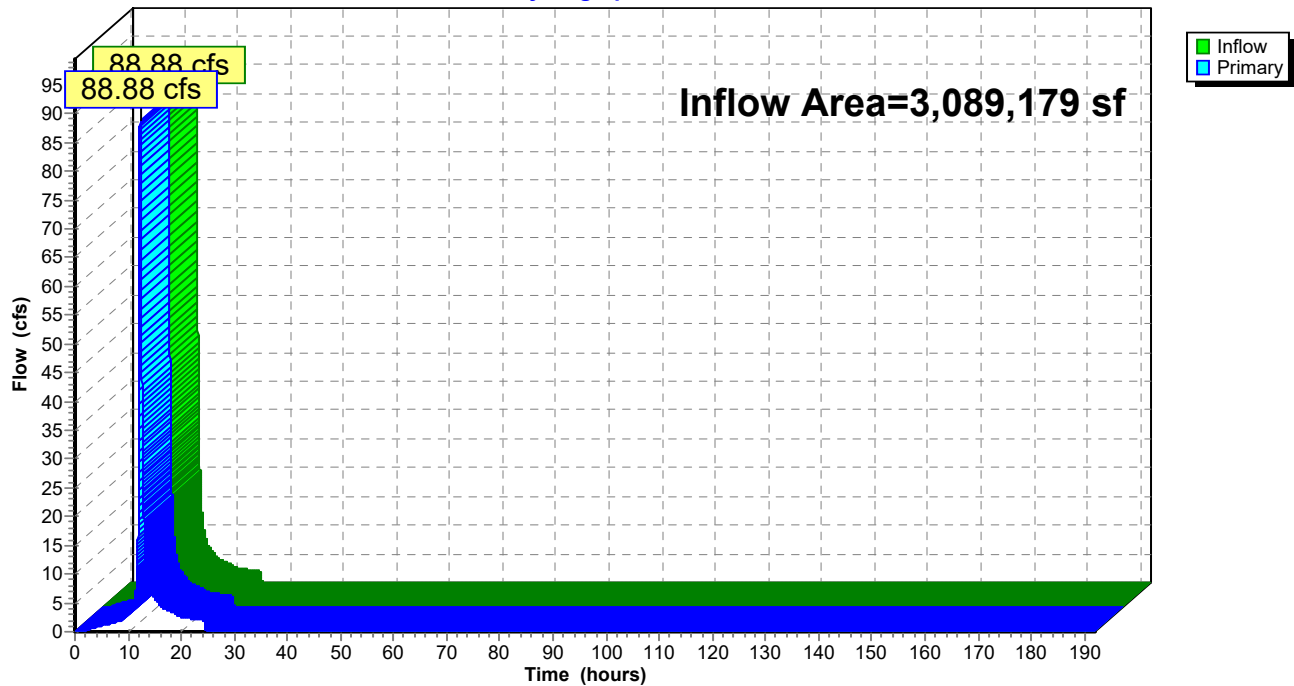
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 1.76" for 5-yr event
Inflow = 88.88 cfs @ 12.27 hrs, Volume= 453,993 cf
Primary = 88.88 cfs @ 12.27 hrs, Volume= 453,993 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

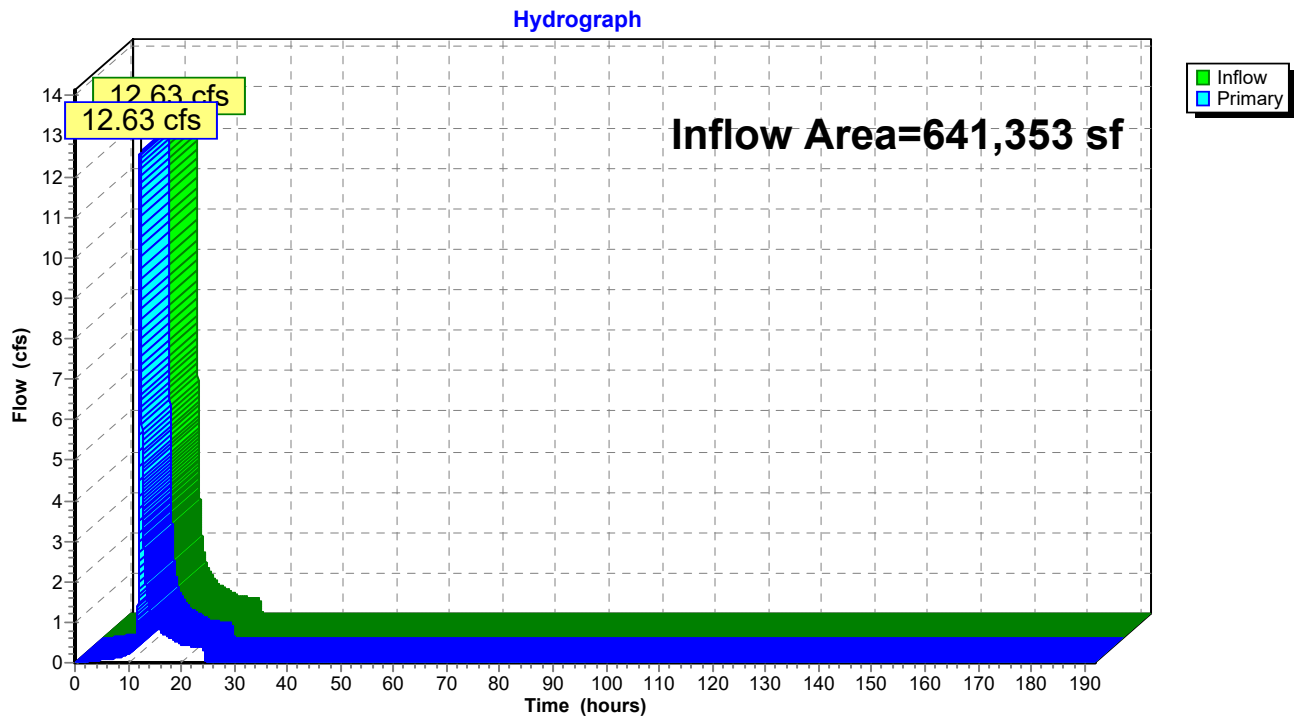
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 1.17" for 5-yr event
Inflow = 12.63 cfs @ 12.25 hrs, Volume= 62,511 cf
Primary = 12.63 cfs @ 12.25 hrs, Volume= 62,511 cf, Atten= 0%, Lag= 0.0 min

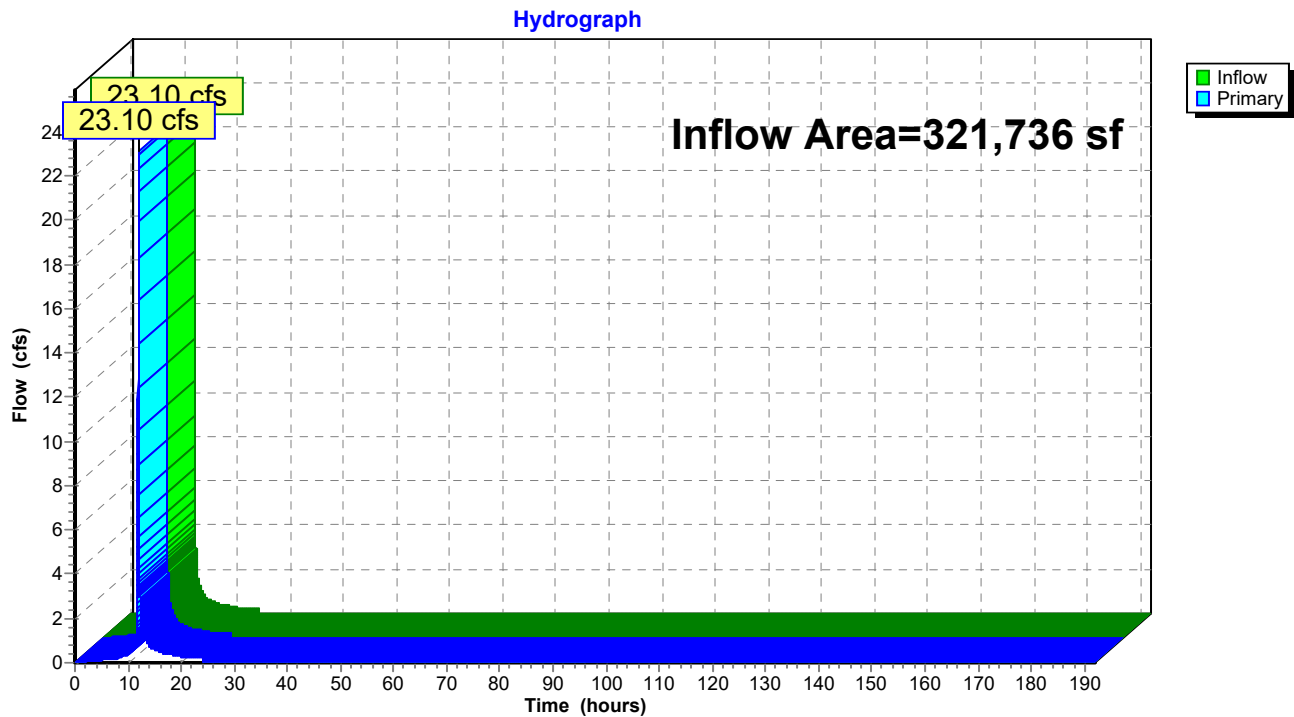
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 1.94" for 5-yr event
Inflow = 23.10 cfs @ 11.96 hrs, Volume= 51,957 cf
Primary = 23.10 cfs @ 11.96 hrs, Volume= 51,957 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

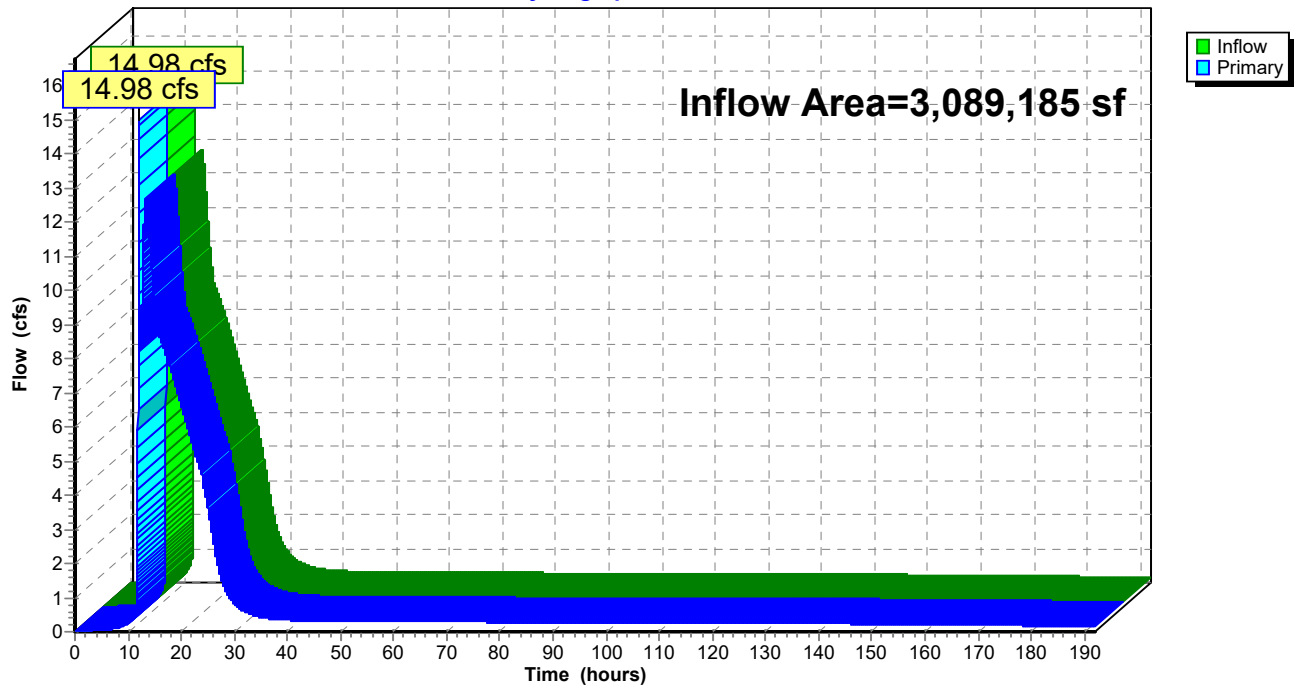
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 2.16" for 5-yr event
Inflow = 14.98 cfs @ 11.98 hrs, Volume= 556,815 cf
Primary = 14.98 cfs @ 11.98 hrs, Volume= 556,815 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 8.09 cfs @ 11.97 hrs, Volume= 16,568 cf, Depth= 1.32"

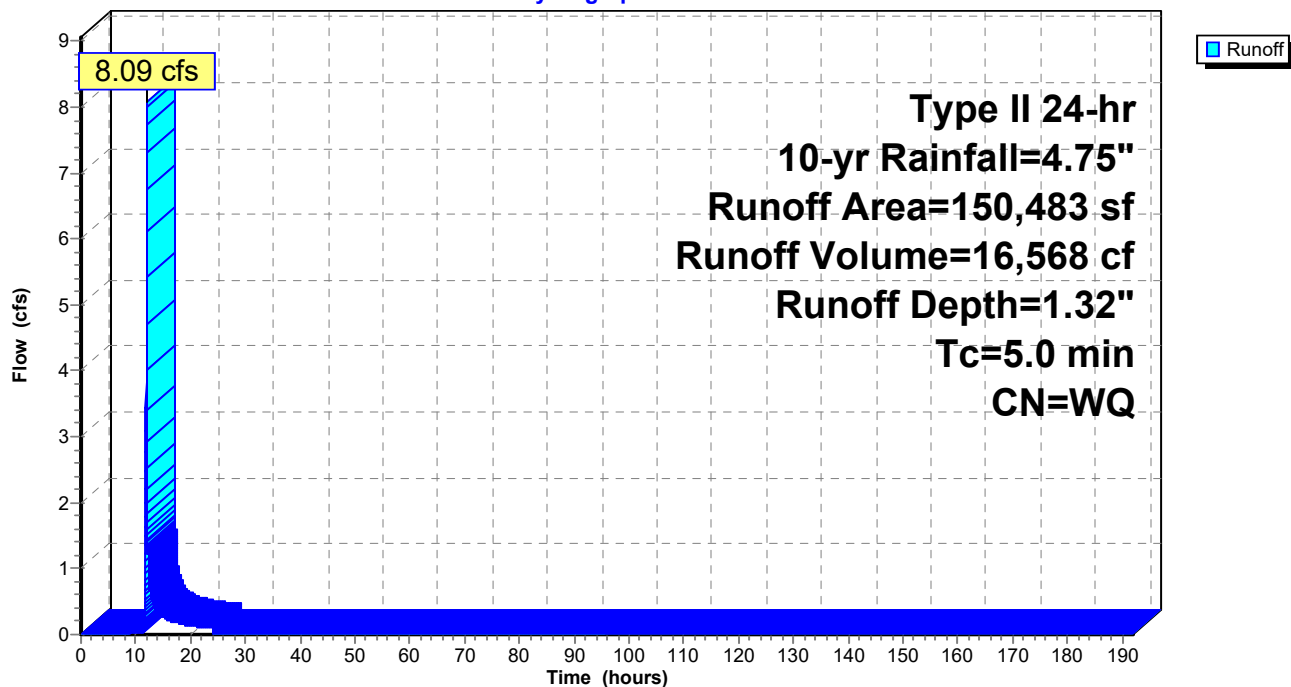
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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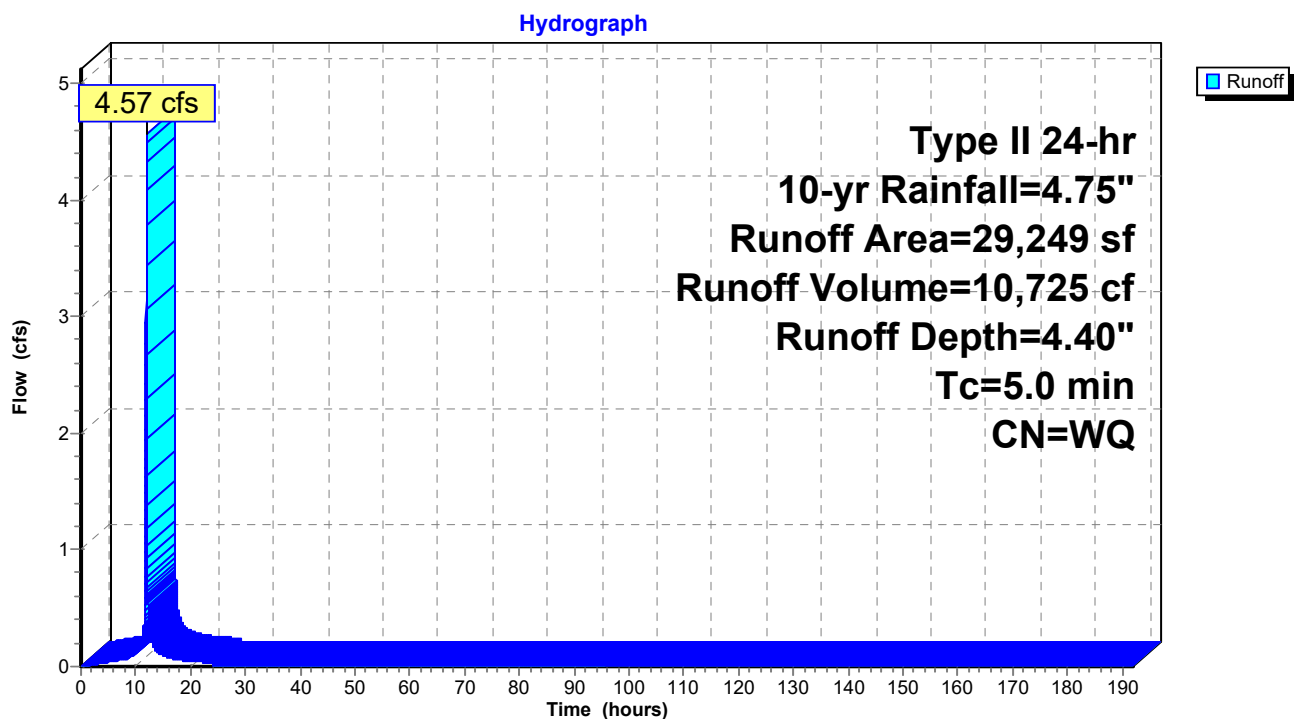
Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 4.57 cfs @ 11.96 hrs, Volume= 10,725 cf, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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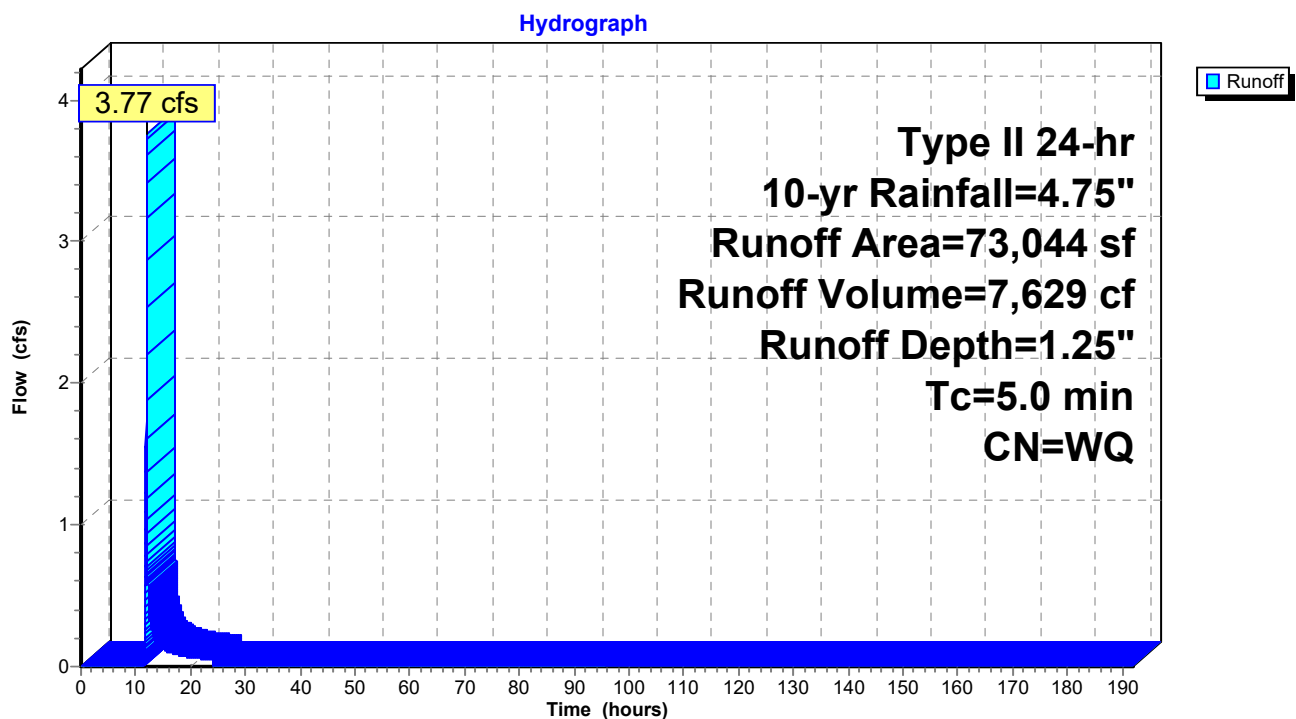
Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 3.77 cfs @ 11.97 hrs, Volume= 7,629 cf, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.62 cfs @ 11.96 hrs, Volume= 1,408 cf, Depth= 2.93"

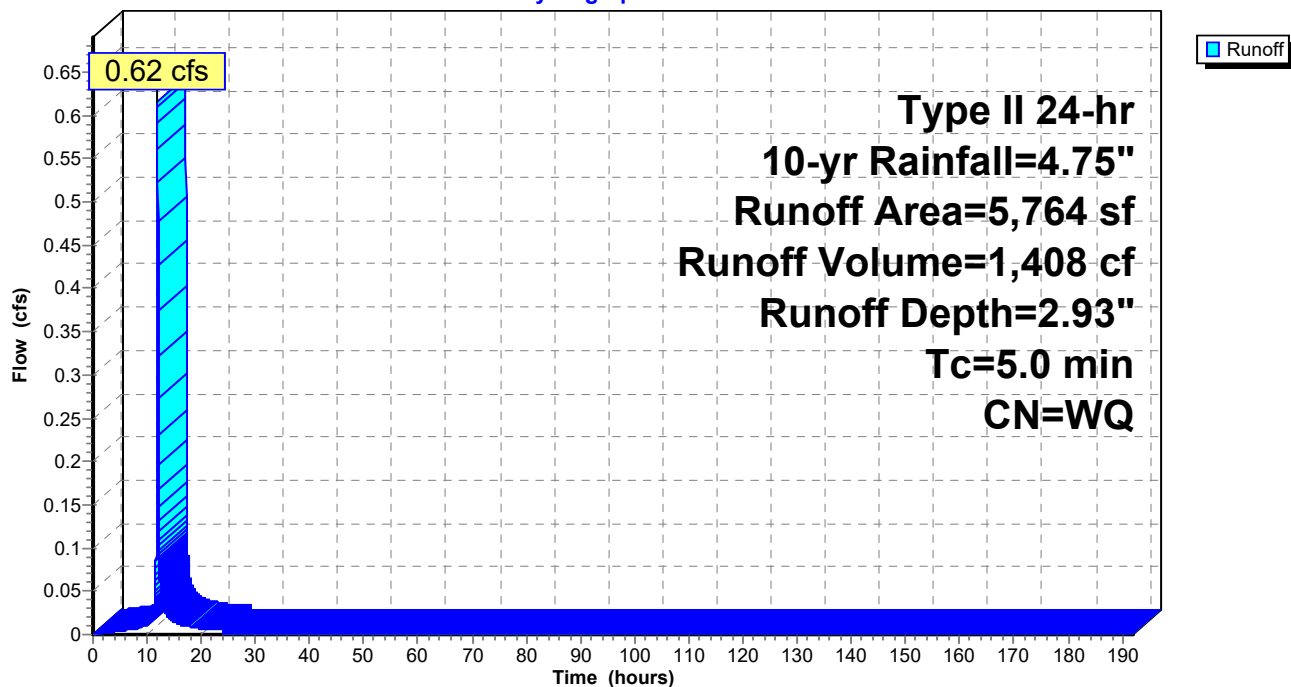
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 96.91 cfs @ 12.27 hrs, Volume= 488,899 cf, Depth= 2.40"

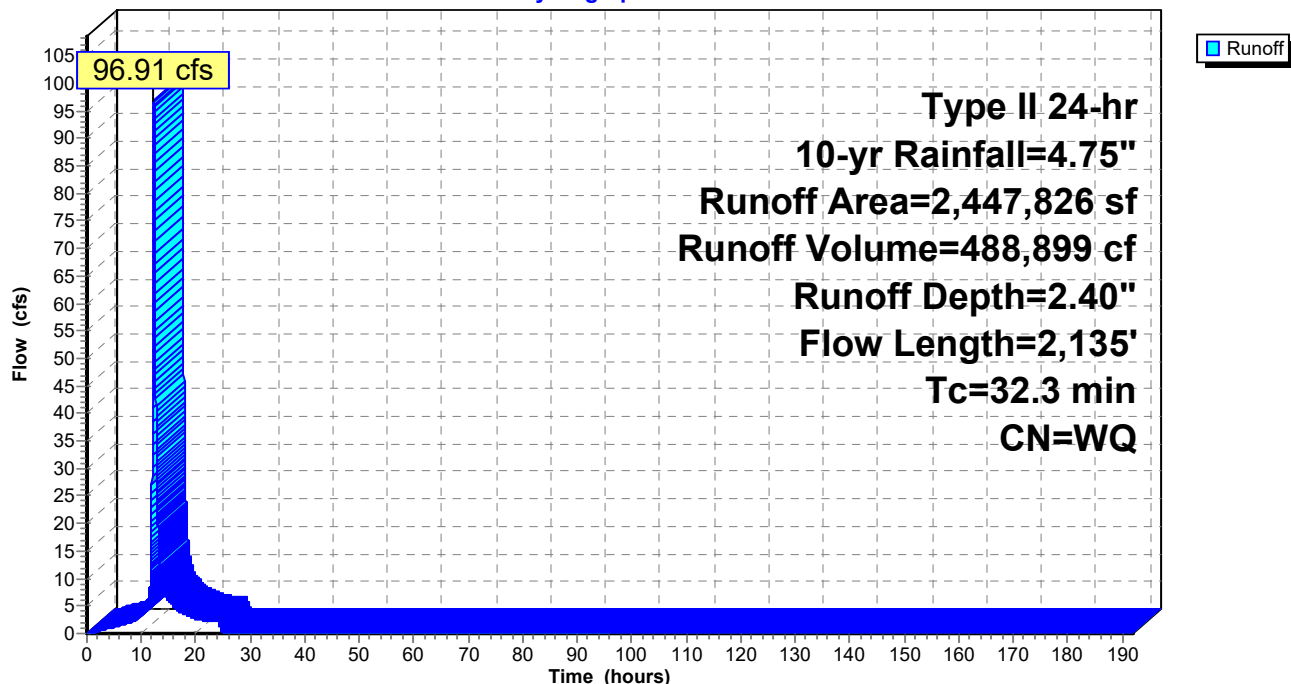
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.75"

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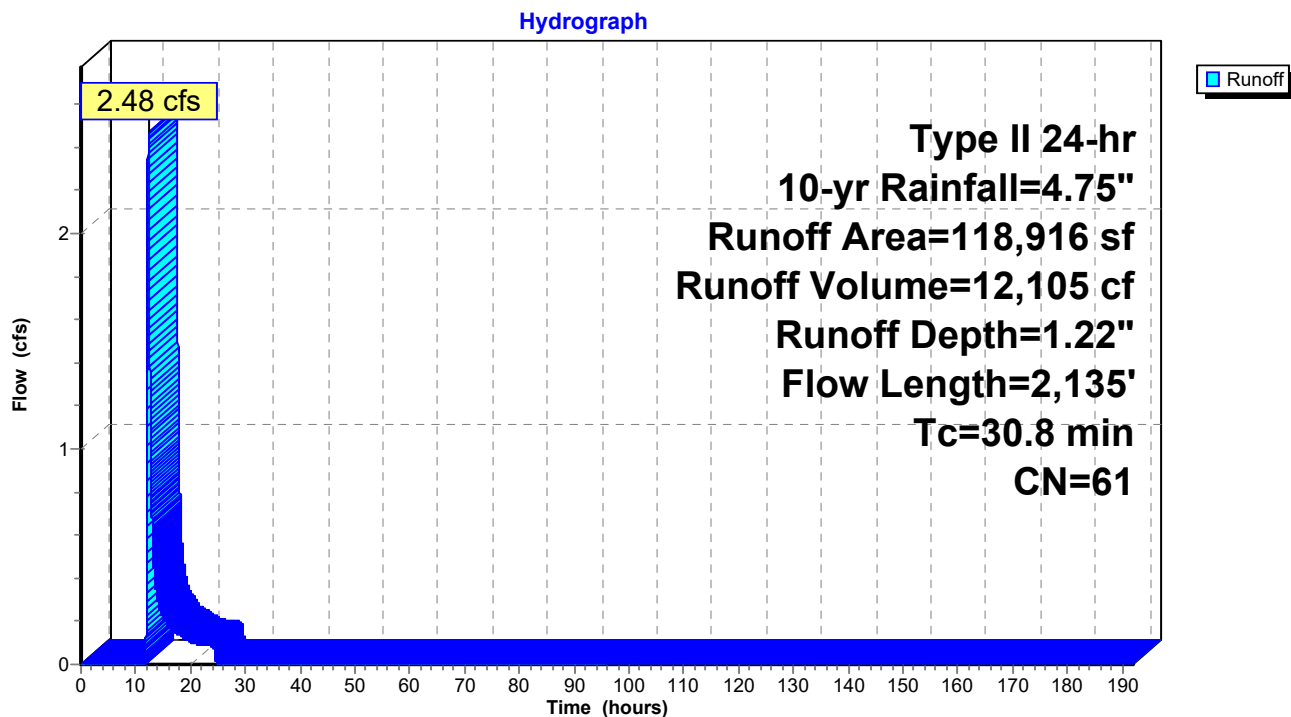
Summary for Subcatchment E2: PRE (OLOD)

Runoff = 2.48 cfs @ 12.29 hrs, Volume= 12,105 cf, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 15.61 cfs @ 12.24 hrs, Volume= 72,444 cf, Depth= 1.66"

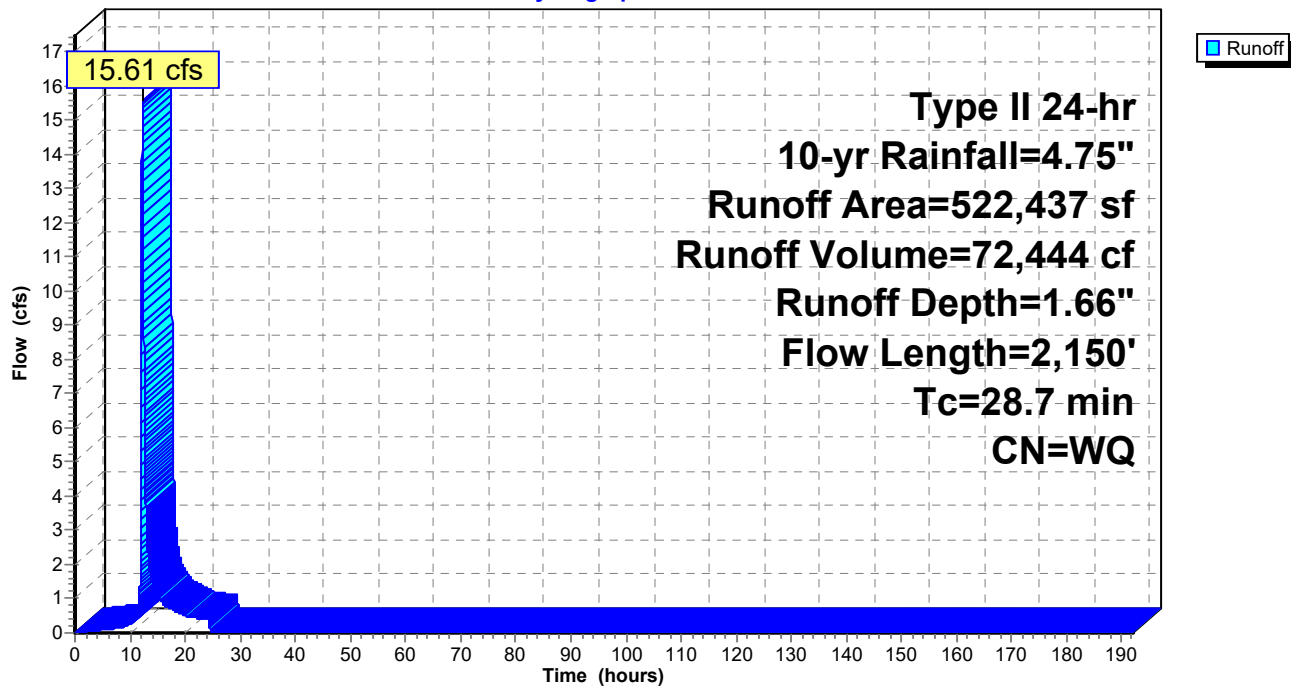
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 14.09 cfs @ 11.97 hrs, Volume= 28,953 cf, Depth= 1.54"

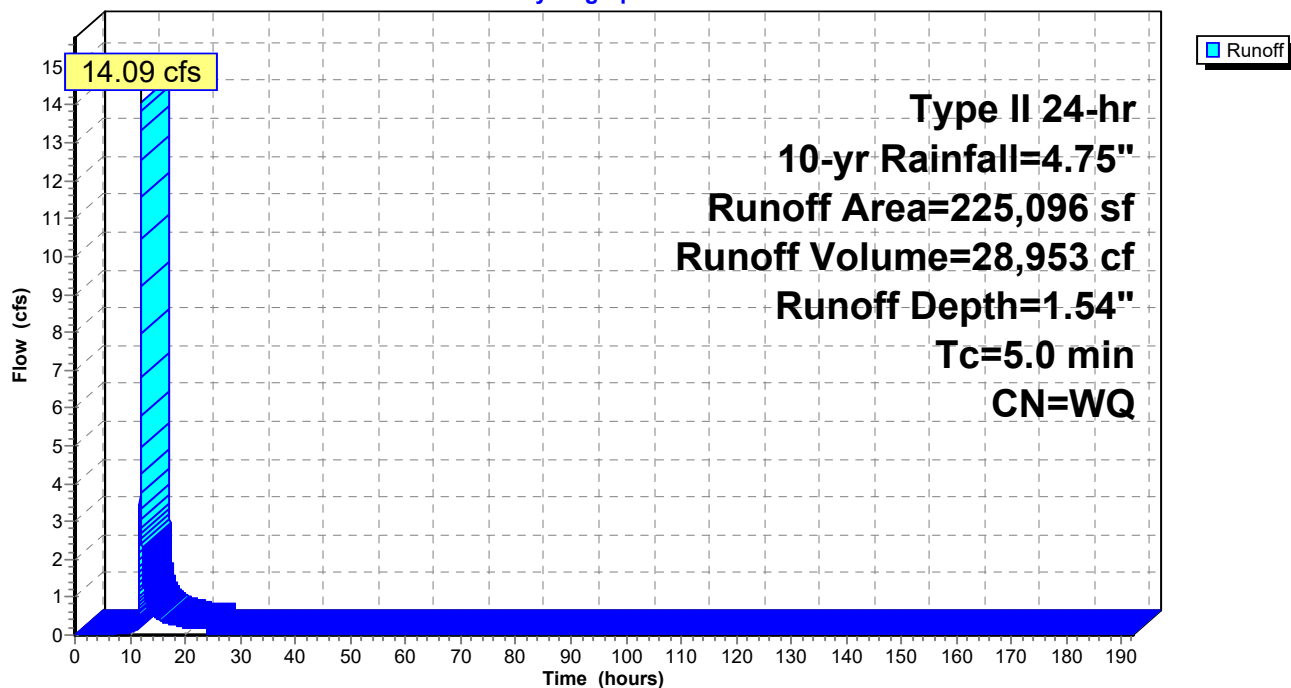
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 15.47 cfs @ 11.96 hrs, Volume= 36,349 cf, Depth= 4.51"

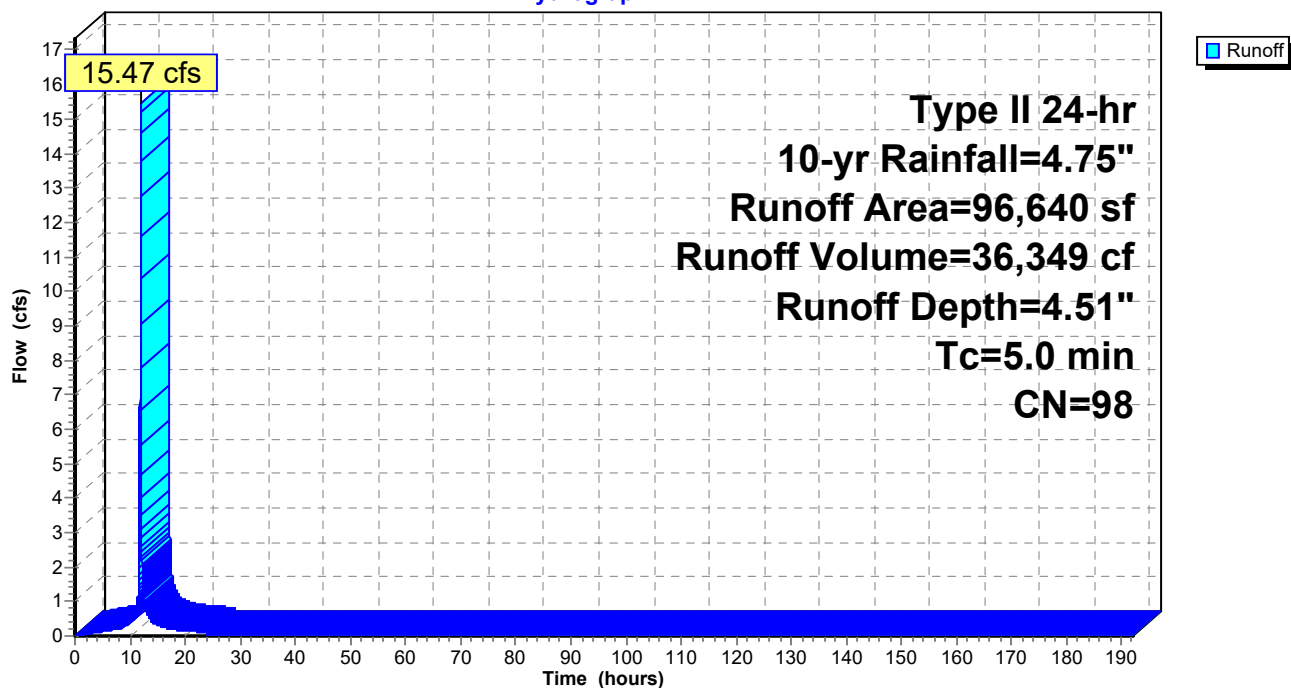
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 33.92 cfs @ 11.97 hrs, Volume= 72,444 cf, Depth= 1.66"

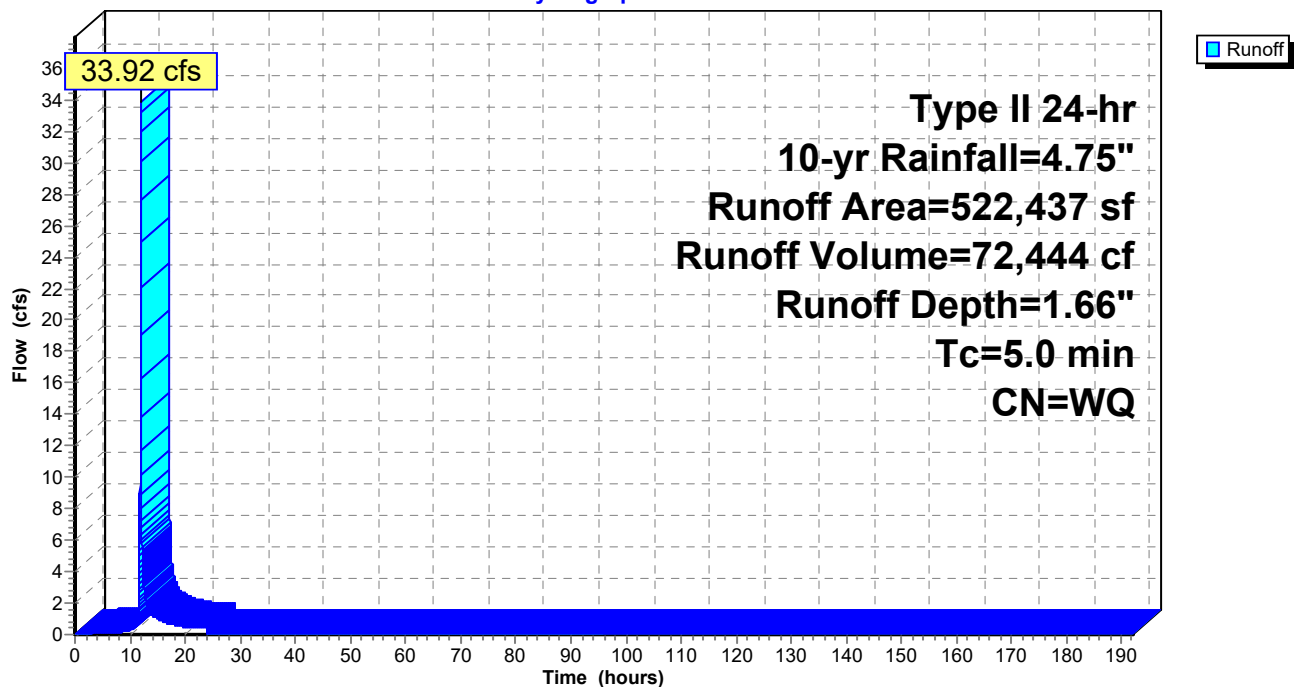
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 6.01 cfs @ 11.97 hrs, Volume= 12,105 cf, Depth= 1.22"

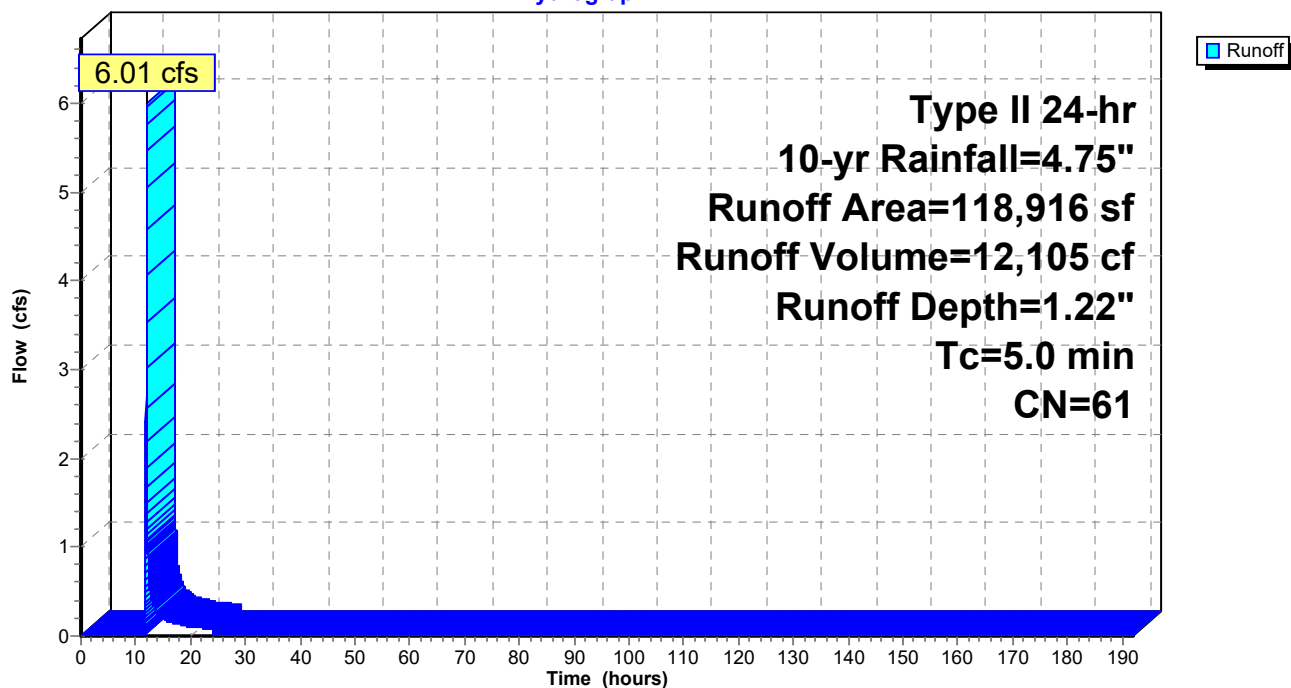
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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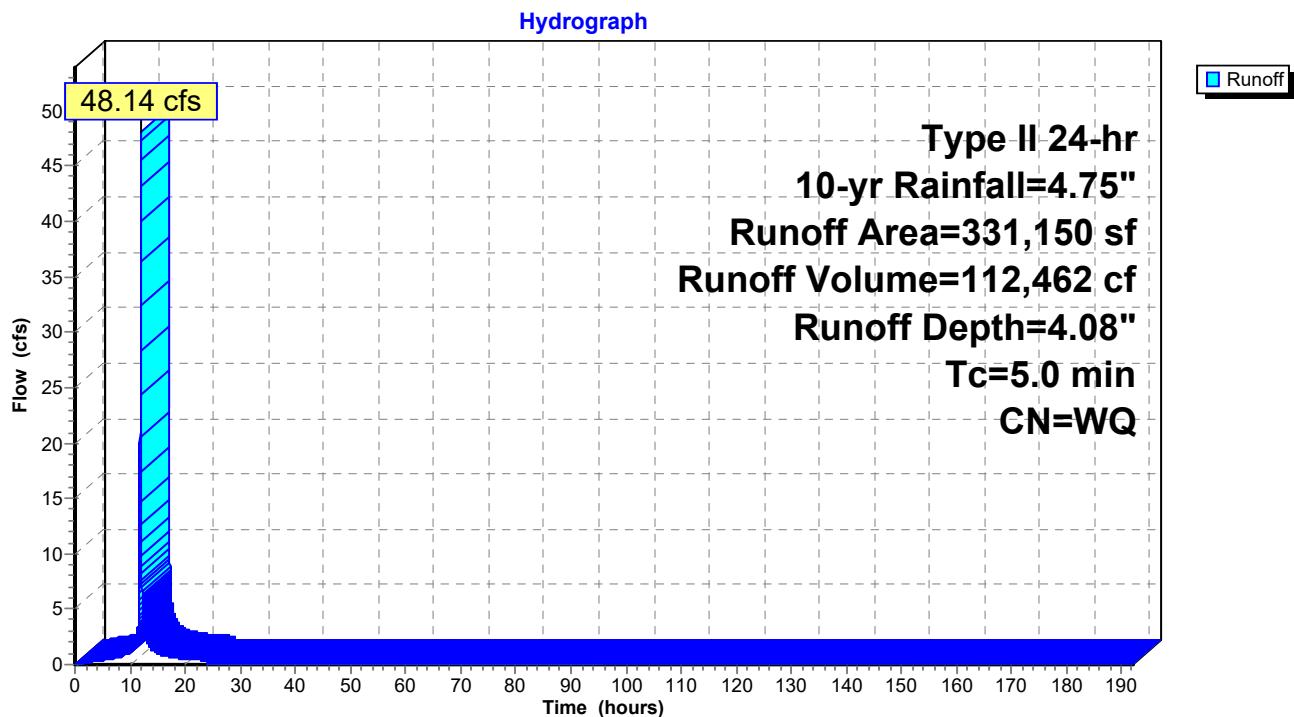
Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 48.14 cfs @ 11.96 hrs, Volume= 112,462 cf, Depth= 4.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 45.68 cfs @ 11.96 hrs, Volume= 104,138 cf, Depth= 3.72"

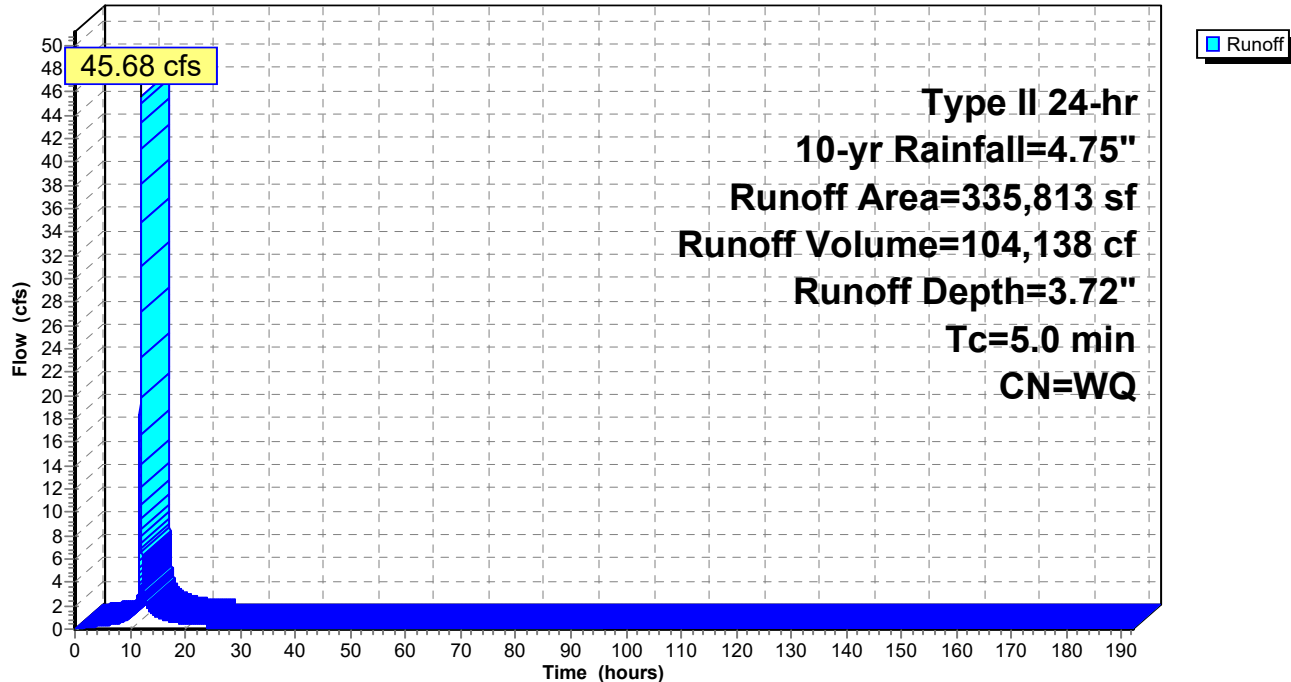
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
	57,394	61	>75% Grass cover, Good, HSG B
*	188,667	98	Building
*	19,774	98	Impervious
*	13,923	98	Generators
*	56,055	85	Gravel
	335,813		Weighted Average
	113,449	73	33.78% Pervious Area
	222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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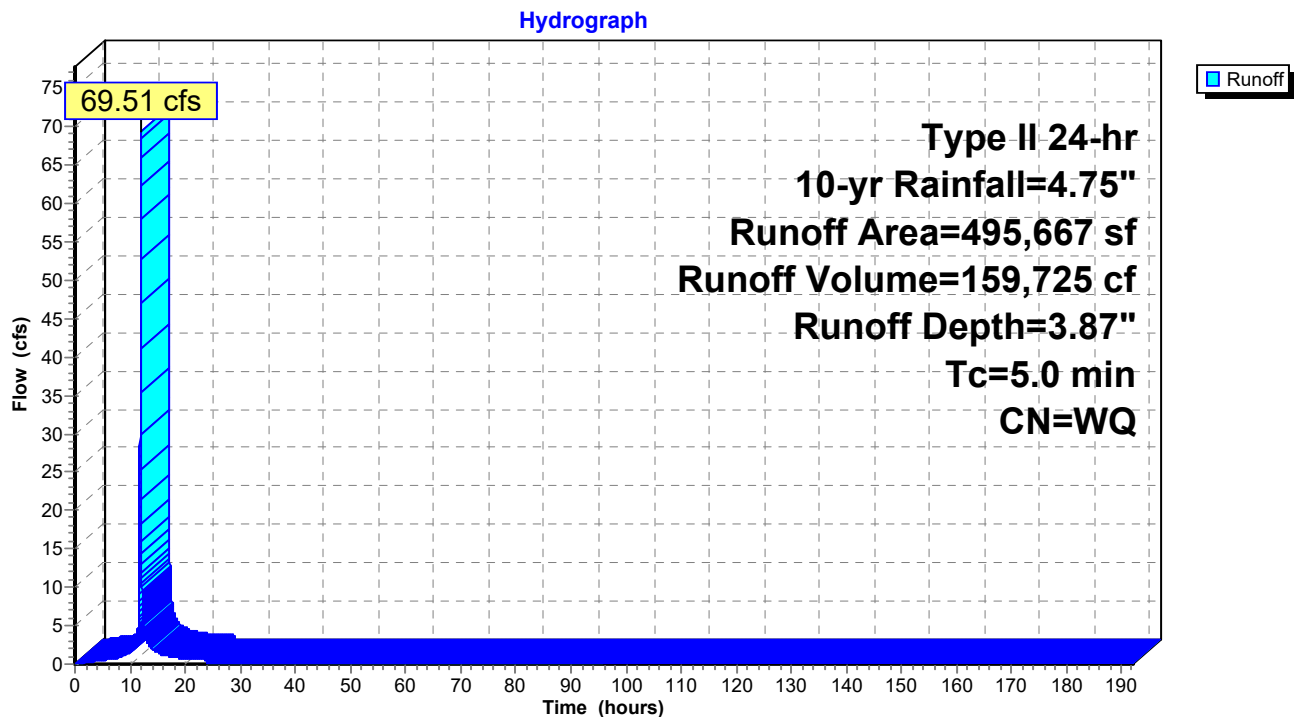
Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 69.51 cfs @ 11.96 hrs, Volume= 159,725 cf, Depth= 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

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Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 58.23 cfs @ 11.96 hrs, Volume= 130,605 cf, Depth= 3.45"

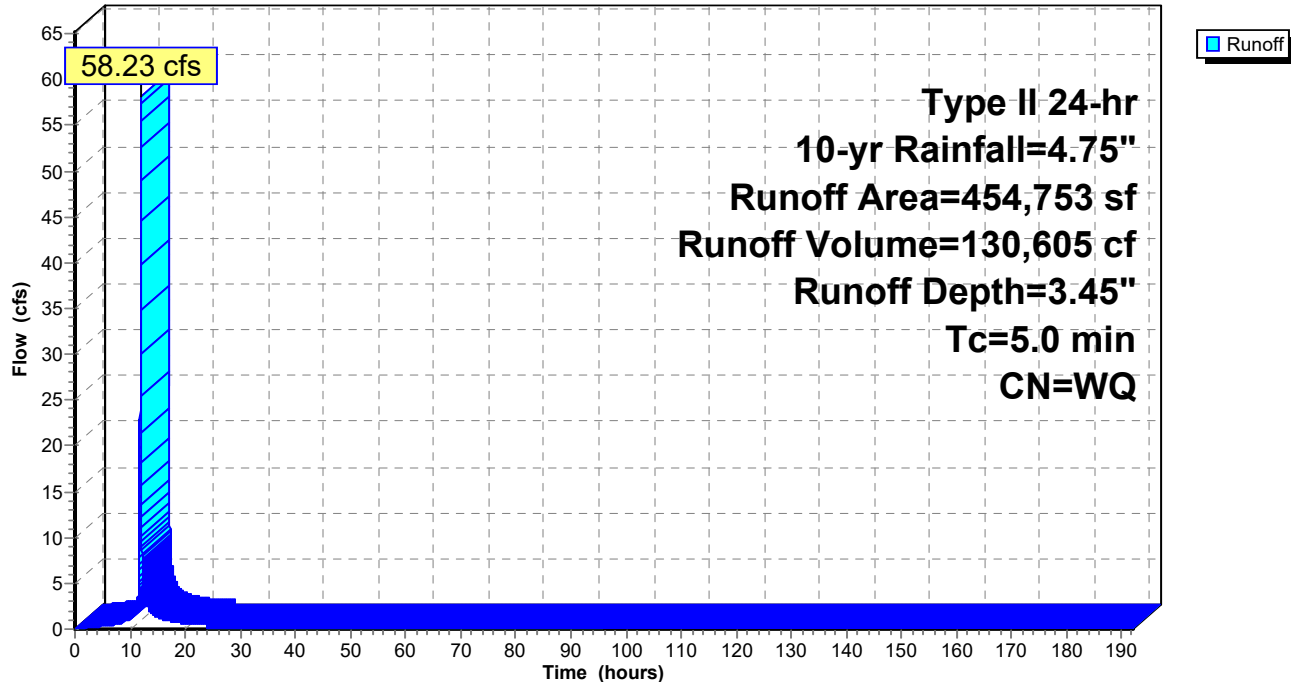
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 22.85 cfs @ 11.96 hrs, Volume= 48,378 cf, Depth= 2.32"

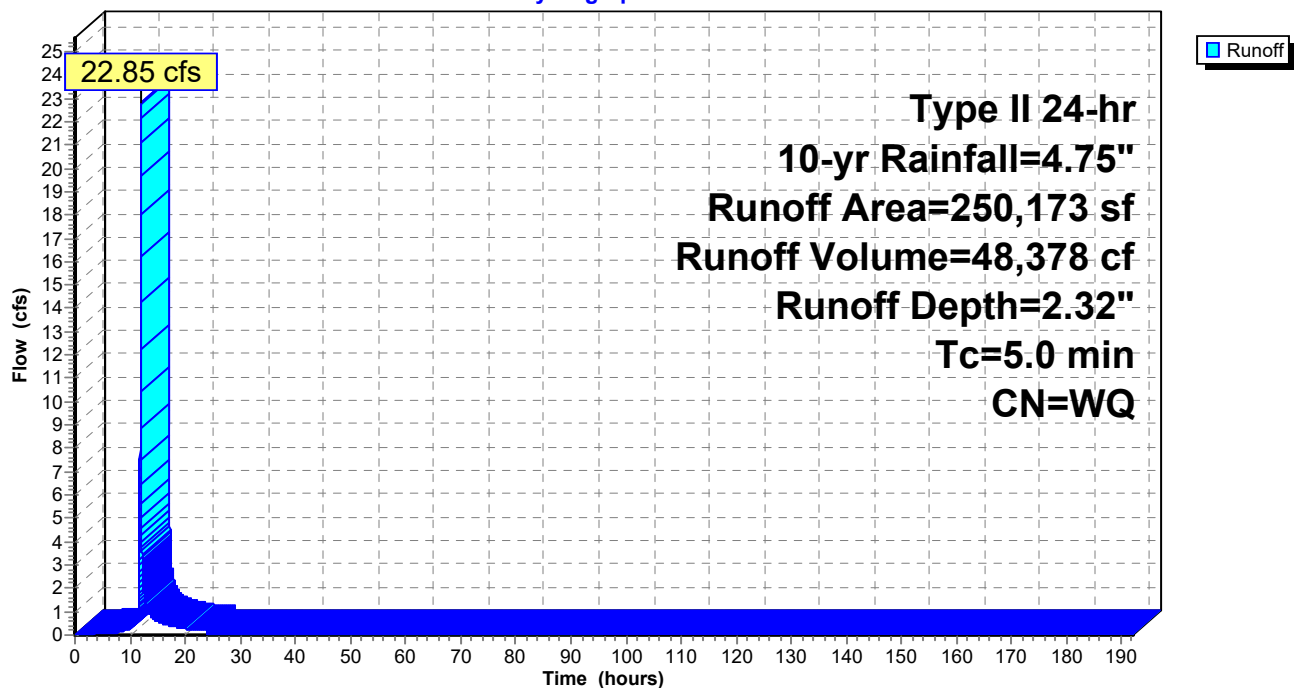
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.75"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Hydrograph



Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 2.83" for 10-yr event
 Inflow = 176.80 cfs @ 12.02 hrs, Volume= 666,853 cf
 Outflow = 27.88 cfs @ 12.71 hrs, Volume= 659,933 cf, Atten= 84%, Lag= 41.4 min
 Primary = 27.88 cfs @ 12.71 hrs, Volume= 659,933 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 357.79' @ 12.71 hrs Surf.Area= 83,332 sf Storage= 213,036 cf

Plug-Flow detention time= 297.1 min calculated for 659,899 cf (99% of inflow)
 Center-of-Mass det. time= 201.2 min (2,215.7 - 2,014.4)

Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

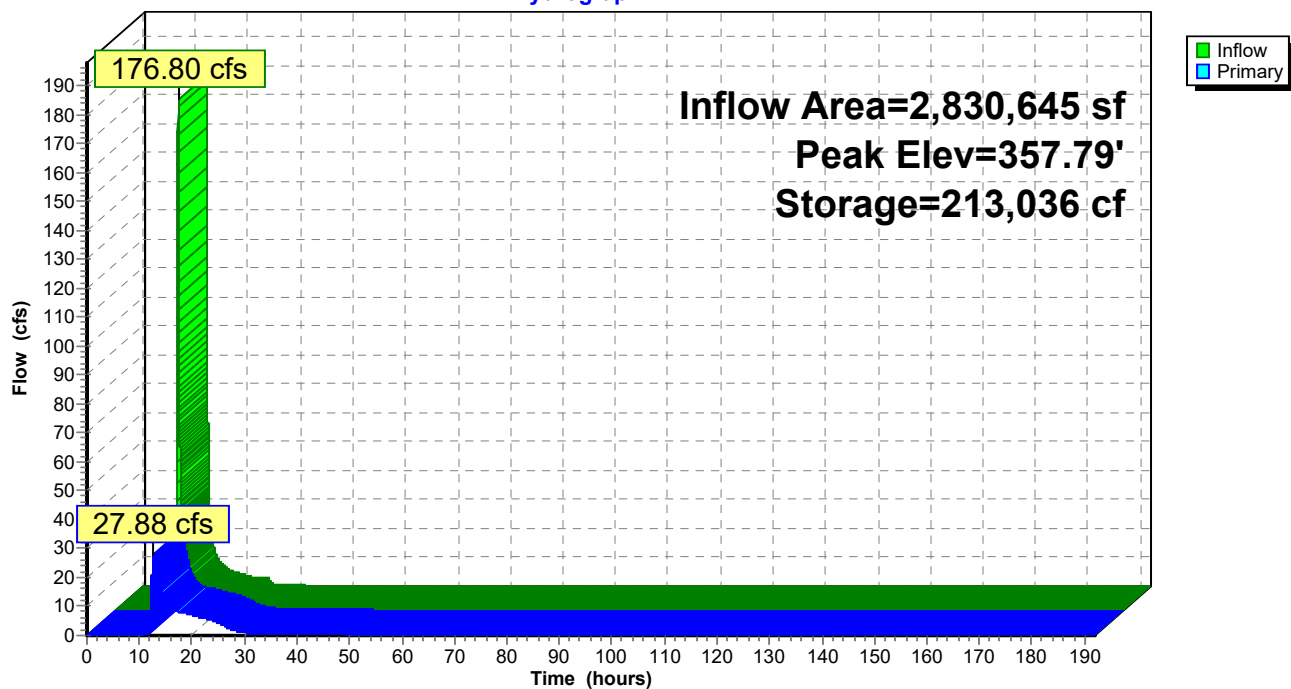
Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=27.88 cfs @ 12.71 hrs HW=357.79' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 27.88 cfs of 177.72 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 10.16 cfs @ 7.61 fps)
 3=19"Wx30"H Weir (Orifice Controls 17.72 cfs @ 2.85 fps)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

Hydrograph



2025-1201 SCS*Type II 24-hr 10-yr Rainfall=4.75"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 4.08" for 10-yr event
 Inflow = 48.14 cfs @ 11.96 hrs, Volume= 112,462 cf
 Outflow = 33.34 cfs @ 12.02 hrs, Volume= 110,544 cf, Atten= 31%, Lag= 3.7 min
 Primary = 33.34 cfs @ 12.02 hrs, Volume= 110,544 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.92' @ 12.02 hrs Surf.Area= 38,388 sf Storage= 49,450 cf

Plug-Flow detention time= 1,414.1 min calculated for 110,538 cf (98% of inflow)
 Center-of-Mass det. time= 1,403.2 min (2,152.2 - 749.0)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=33.31 cfs @ 12.02 hrs HW=361.92' TW=356.12' (Dynamic Tailwater)

1=Outflow Pipe (Passes 33.31 cfs of 71.56 cfs potential flow)

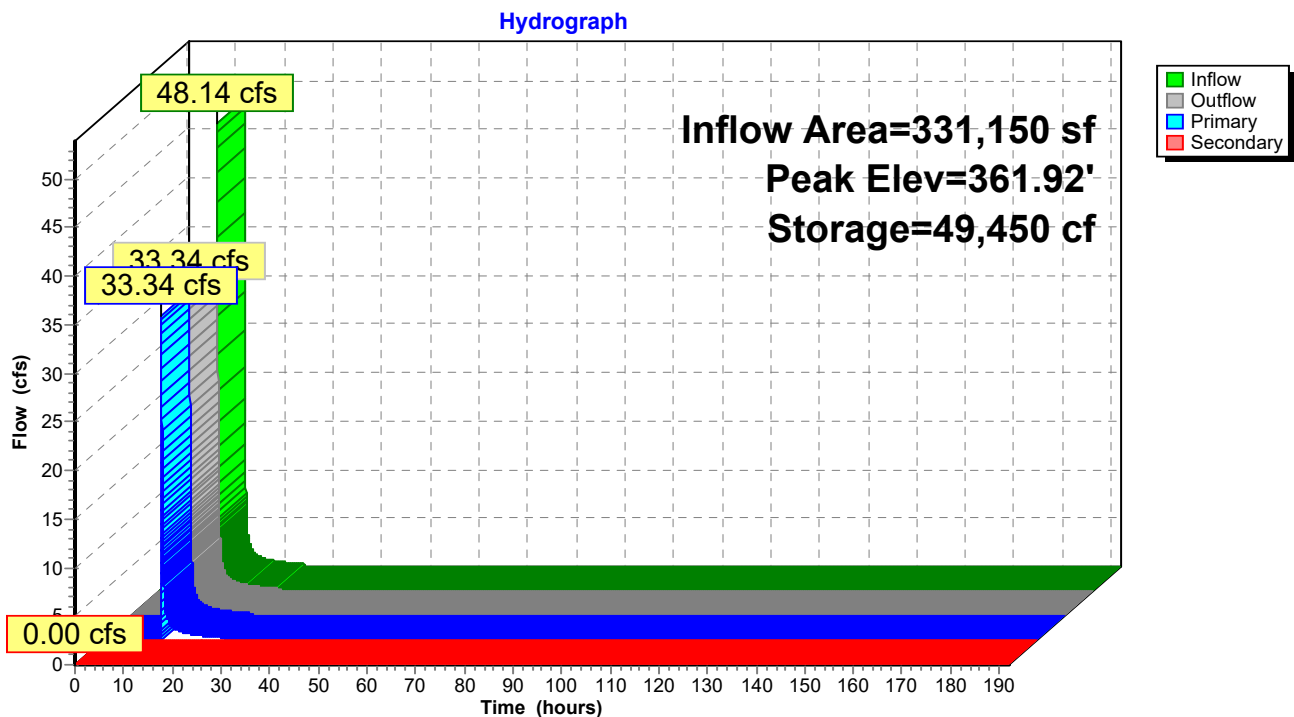
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.63 fps)

3=Type M Overflow (Weir Controls 33.24 cfs @ 3.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-2: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 10-yr Rainfall=4.75"*

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 3.72" for 10-yr event
 Inflow = 45.68 cfs @ 11.96 hrs, Volume= 104,138 cf
 Outflow = 19.99 cfs @ 12.05 hrs, Volume= 96,574 cf, Atten= 56%, Lag= 5.5 min
 Primary = 19.99 cfs @ 12.05 hrs, Volume= 96,574 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.65' @ 12.05 hrs Surf.Area= 45,022 sf Storage= 54,689 cf

Plug-Flow detention time= 1,971.9 min calculated for 96,574 cf (93% of inflow)
 Center-of-Mass det. time= 1,930.6 min (2,690.3 - 759.7)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=19.99 cfs @ 12.05 hrs HW=361.65' TW=356.37' (Dynamic Tailwater)

1=Outflow Pipe (Passes 19.99 cfs of 69.37 cfs potential flow)

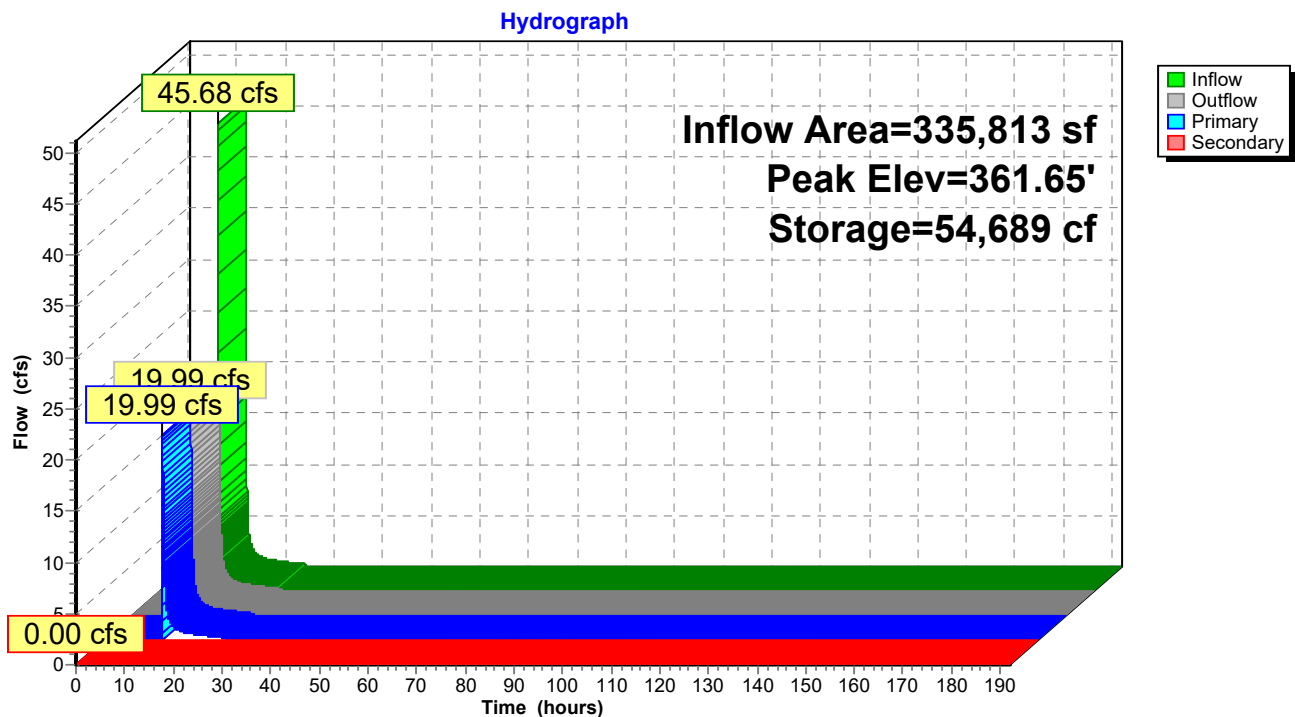
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.34 fps)

3=Type M Overflow (Weir Controls 19.92 cfs @ 2.65 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-3: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 10-yr Rainfall=4.75"*

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Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

2025-1201 SCS

Type II 24-hr 10-yr Rainfall=4.75"

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Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 3.87" for 10-yr event
 Inflow = 69.51 cfs @ 11.96 hrs, Volume= 159,725 cf
 Outflow = 36.49 cfs @ 12.04 hrs, Volume= 145,788 cf, Atten= 48%, Lag= 4.9 min
 Primary = 36.49 cfs @ 12.04 hrs, Volume= 145,788 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.02' @ 12.04 hrs Surf.Area= 58,366 sf Storage= 77,369 cf

Plug-Flow detention time= 1,406.3 min calculated for 145,788 cf (91% of inflow)
 Center-of-Mass det. time= 1,358.5 min (2,114.4 - 755.9)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

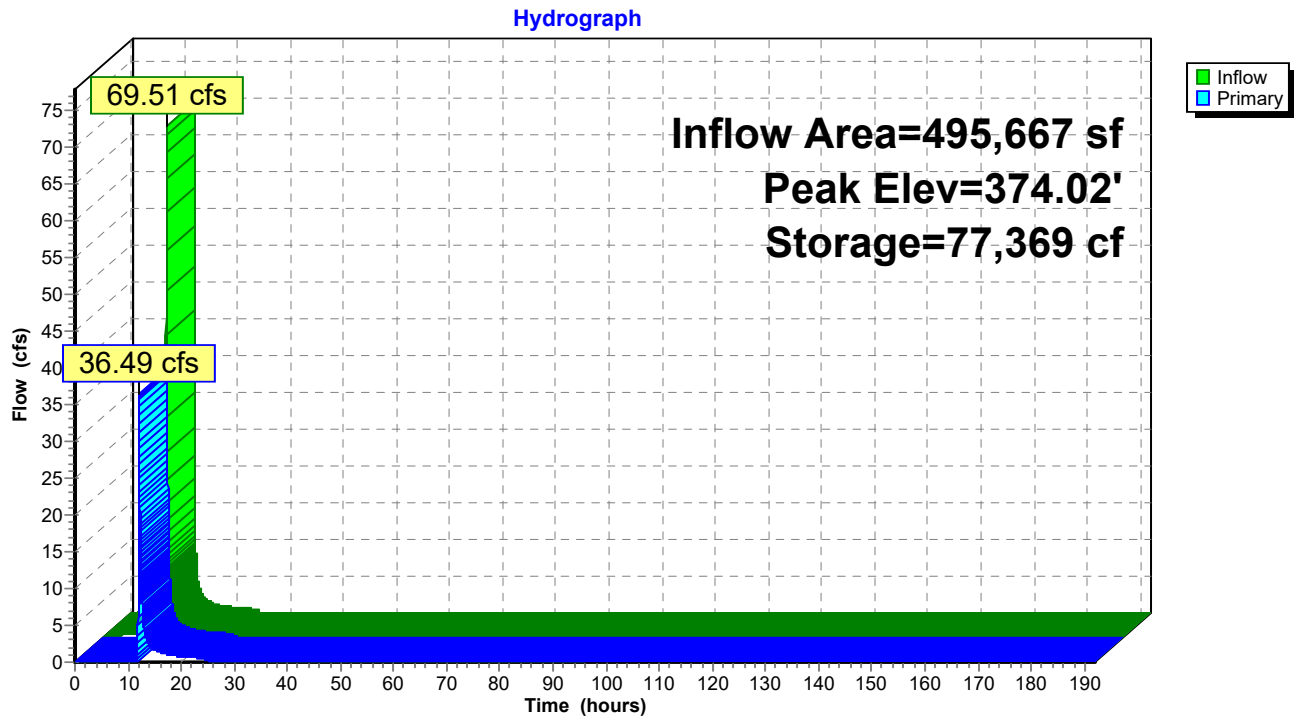
Primary OutFlow Max=36.48 cfs @ 12.04 hrs HW=374.02' TW=356.28' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 36.48 cfs of 66.49 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.73 fps)

3=Type M Overflow (Orifice Controls 36.41 cfs @ 4.85 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 10-yr Rainfall=4.75"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 2.99" for 10-yr event
 Inflow = 64.14 cfs @ 11.96 hrs, Volume= 142,709 cf
 Outflow = 26.29 cfs @ 12.05 hrs, Volume= 128,770 cf, Atten= 59%, Lag= 5.7 min
 Primary = 26.29 cfs @ 12.05 hrs, Volume= 128,770 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 373.79' @ 12.05 hrs Surf.Area= 57,360 sf Storage= 70,185 cf

Plug-Flow detention time= 1,575.1 min calculated for 128,763 cf (90% of inflow)
 Center-of-Mass det. time= 1,523.3 min (2,300.0 - 776.7)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

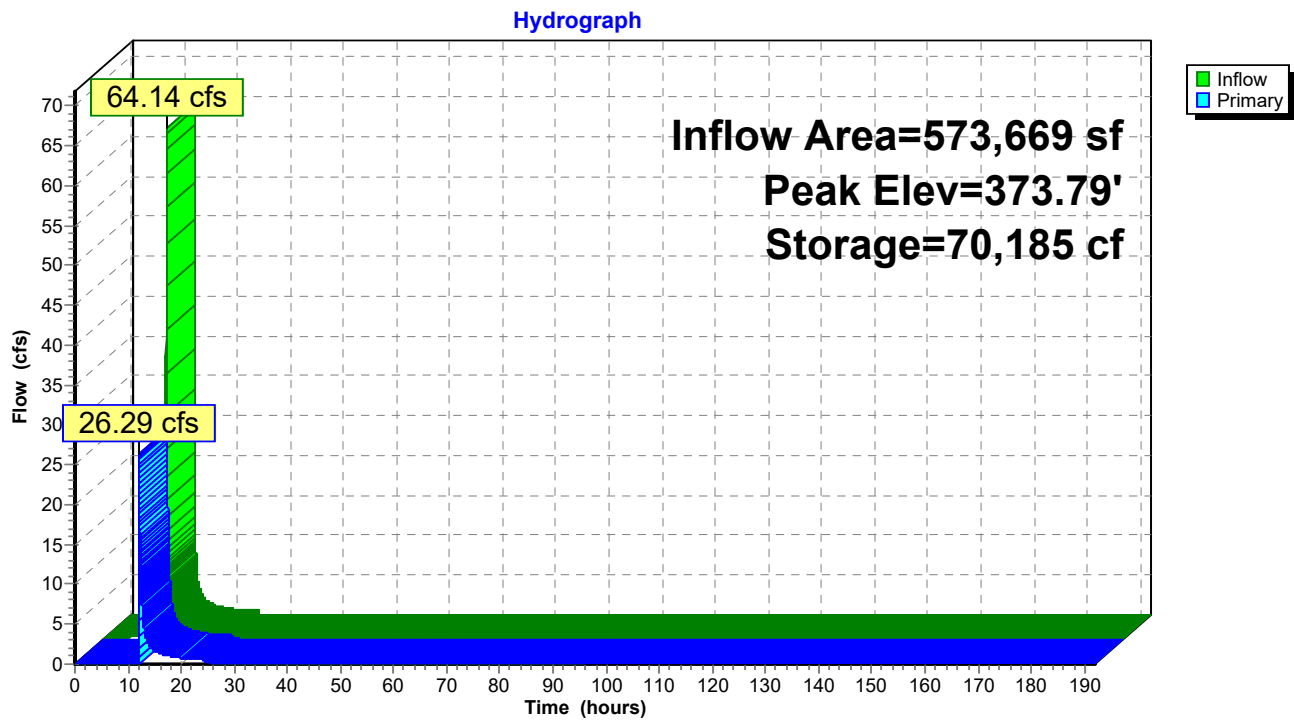
Primary OutFlow Max=26.25 cfs @ 12.05 hrs HW=373.79' TW=356.41' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 26.25 cfs of 64.45 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.48 fps)

3=Type M Overflow (Weir Controls 26.18 cfs @ 2.90 fps)

Pond SCM-5: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 10-yr Rainfall=4.75"*

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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 1.88" for 10-yr event
 Inflow = 56.75 cfs @ 11.96 hrs, Volume= 120,823 cf
 Outflow = 43.19 cfs @ 12.02 hrs, Volume= 119,875 cf, Atten= 24%, Lag= 3.1 min
 Primary = 14.16 cfs @ 12.02 hrs, Volume= 108,328 cf
 Secondary = 29.03 cfs @ 12.02 hrs, Volume= 11,548 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 369.37' @ 12.02 hrs Surf.Area= 26,949 sf Storage= 38,436 cf

Plug-Flow detention time= 769.8 min calculated for 119,875 cf (99% of inflow)
 Center-of-Mass det. time= 764.9 min (1,582.5 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 1' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=14.16 cfs @ 12.02 hrs HW=369.36' TW=356.10' (Dynamic Tailwater)

1=Outflow Pipe (Inlet Controls 14.16 cfs @ 11.53 fps)

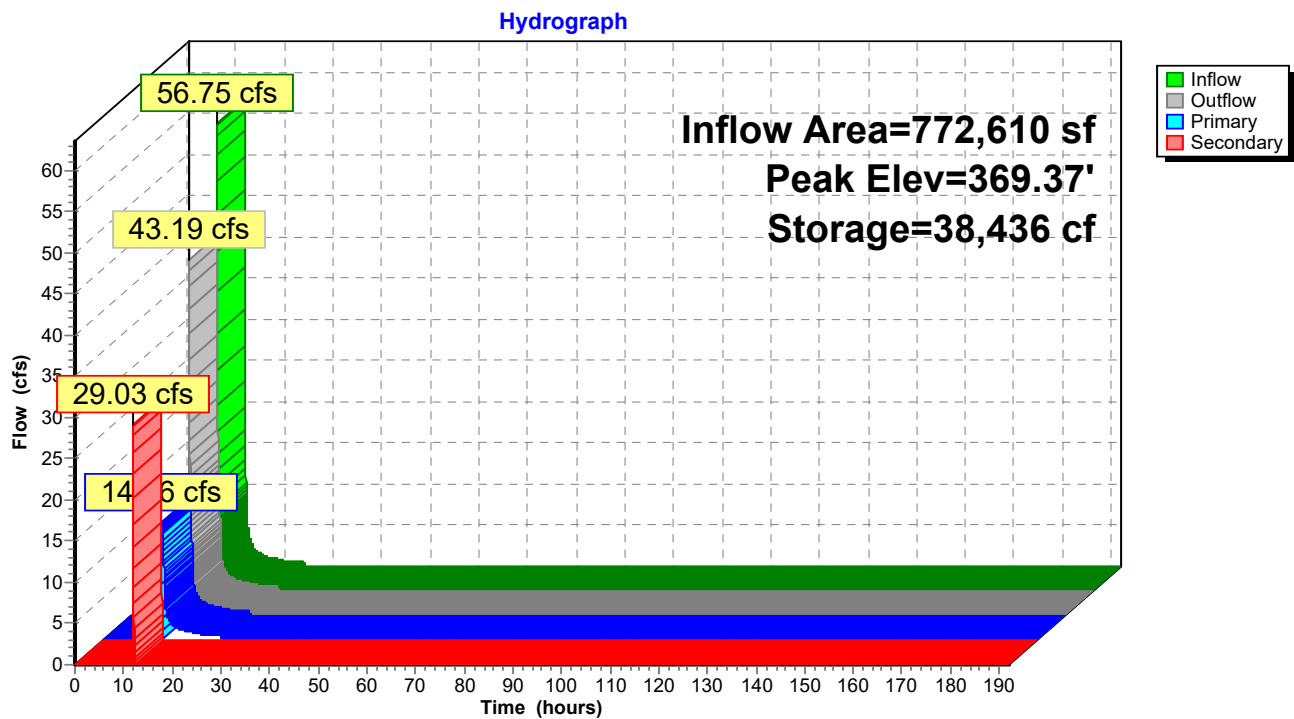
2=MRC Low Flow Orifice (Passes < 0.06 cfs potential flow)

3=Type M Overflow (Passes < 42.17 cfs potential flow)

Secondary OutFlow Max=28.88 cfs @ 12.02 hrs HW=369.36' TW=356.10' (Dynamic Tailwater)

4=Spillway (Weir Controls 28.88 cfs @ 1.59 fps)

Pond SCM-6: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 10-yr Rainfall=4.75"*

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Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

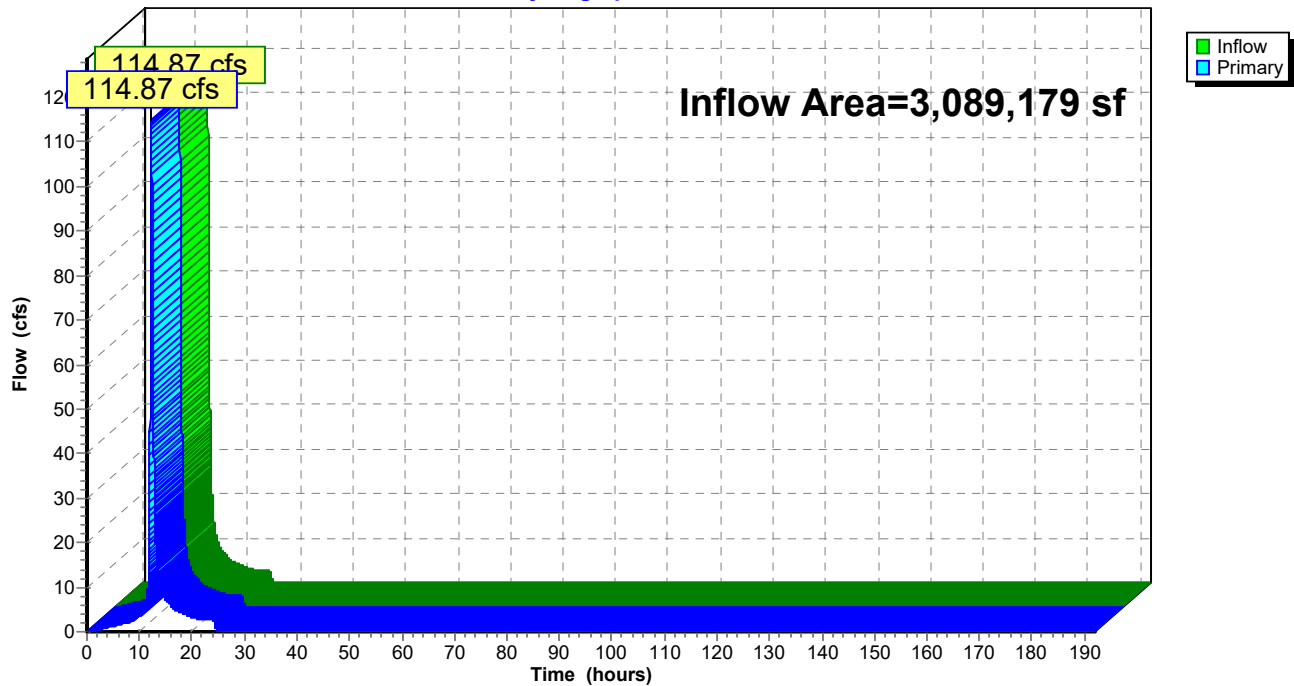
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 2.23" for 10-yr event
Inflow = 114.87 cfs @ 12.27 hrs, Volume= 573,448 cf
Primary = 114.87 cfs @ 12.27 hrs, Volume= 573,448 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

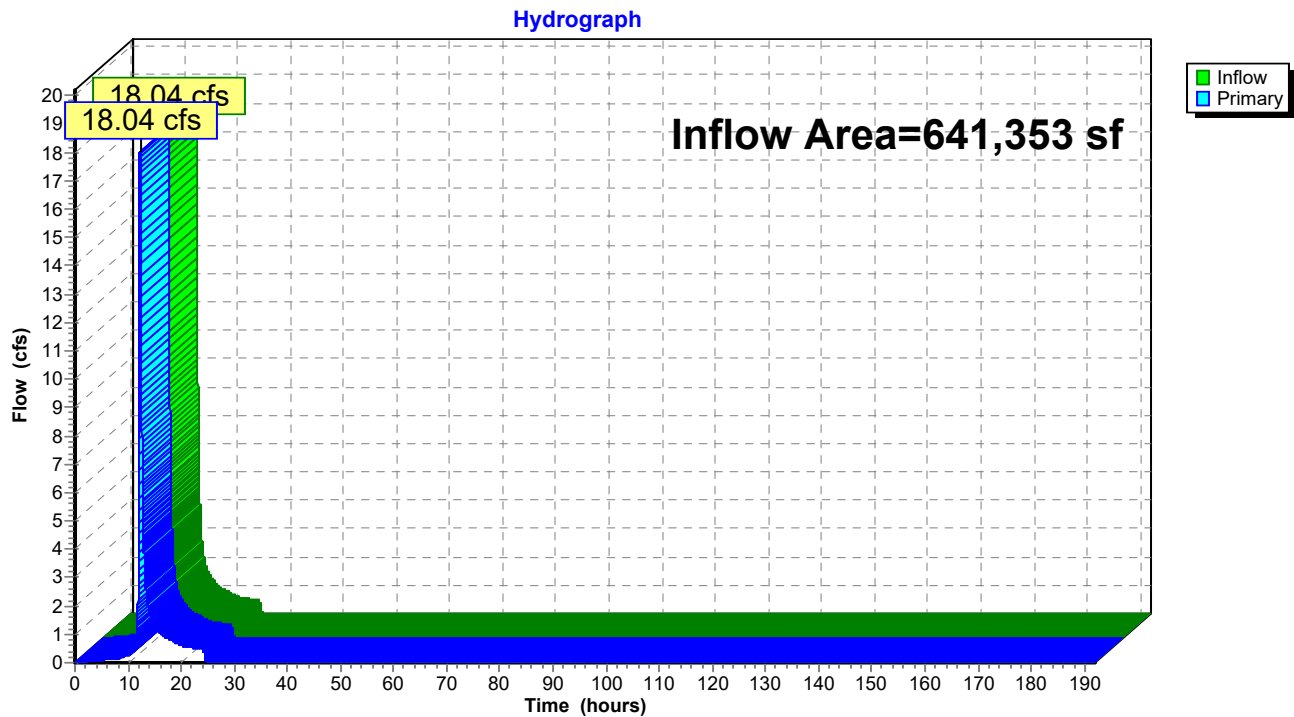
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 1.58" for 10-yr event
Inflow = 18.04 cfs @ 12.25 hrs, Volume= 84,549 cf
Primary = 18.04 cfs @ 12.25 hrs, Volume= 84,549 cf, Atten= 0%, Lag= 0.0 min

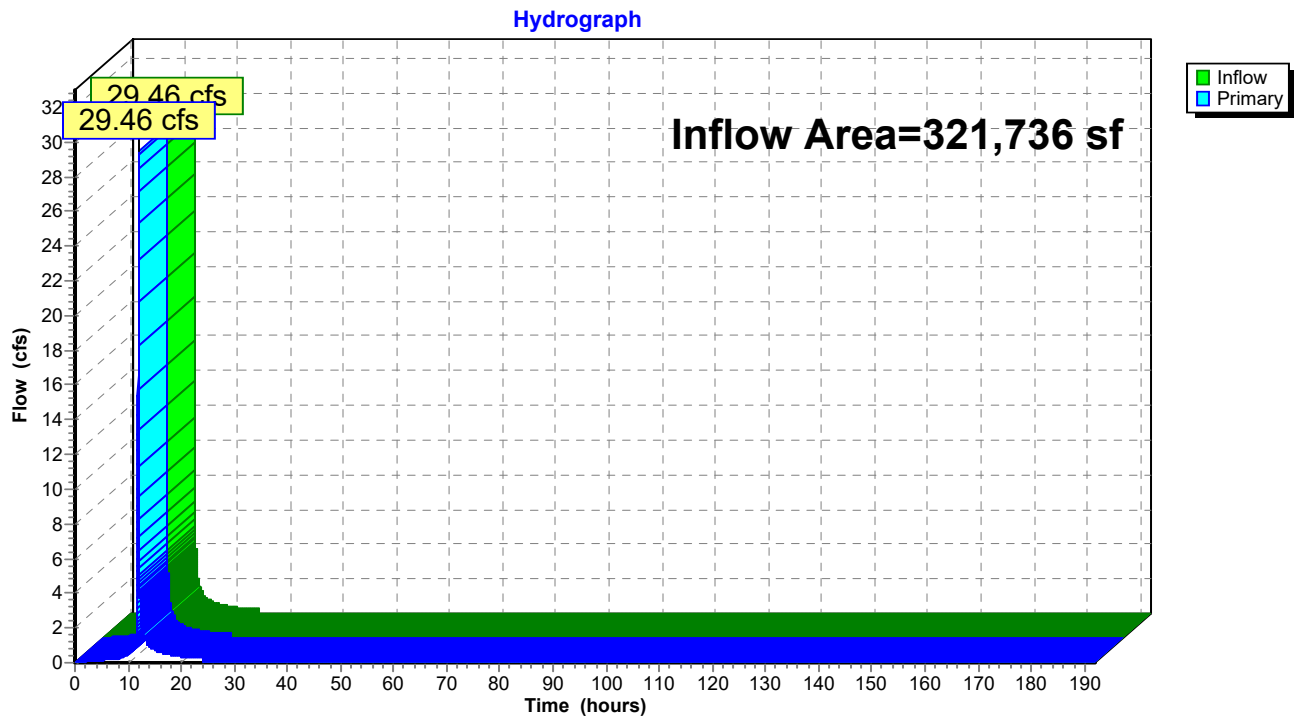
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 2.44" for 10-yr event
Inflow = 29.46 cfs @ 11.96 hrs, Volume= 65,303 cf
Primary = 29.46 cfs @ 11.96 hrs, Volume= 65,303 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

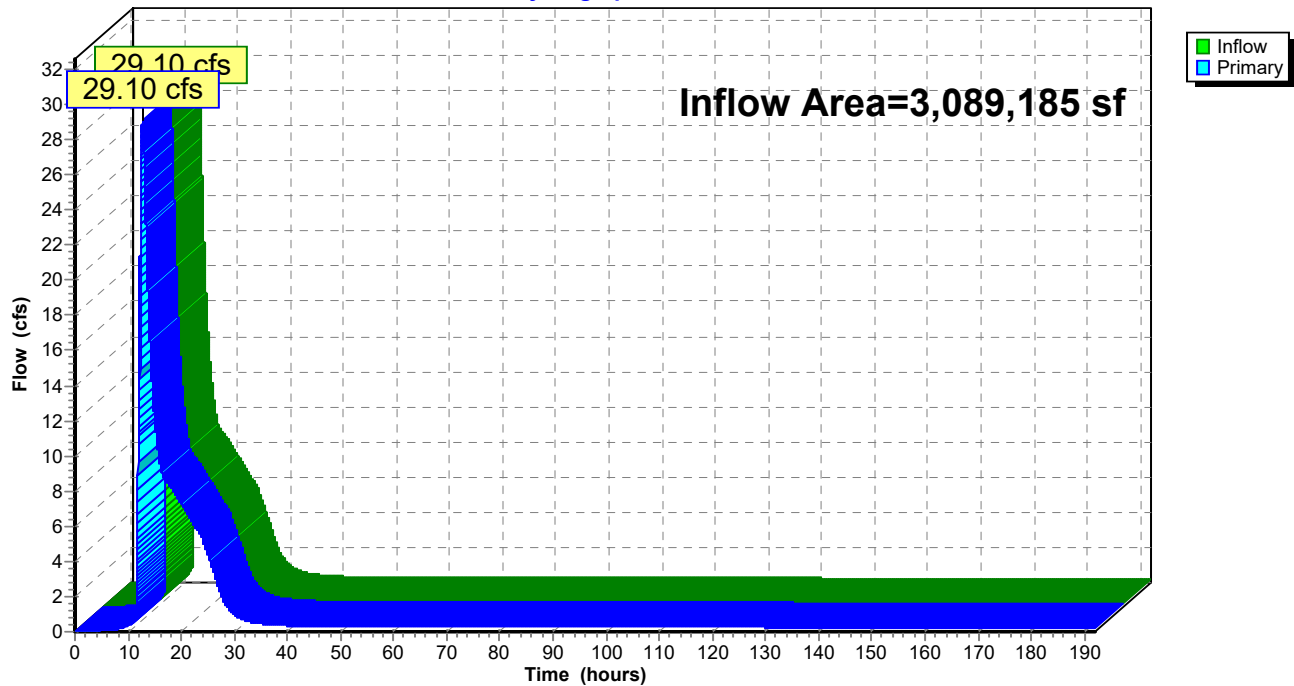
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 2.70" for 10-yr event
Inflow = 29.10 cfs @ 12.70 hrs, Volume= 696,264 cf
Primary = 29.10 cfs @ 12.70 hrs, Volume= 696,264 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 12.16 cfs @ 11.97 hrs, Volume= 24,304 cf, Depth= 1.94"

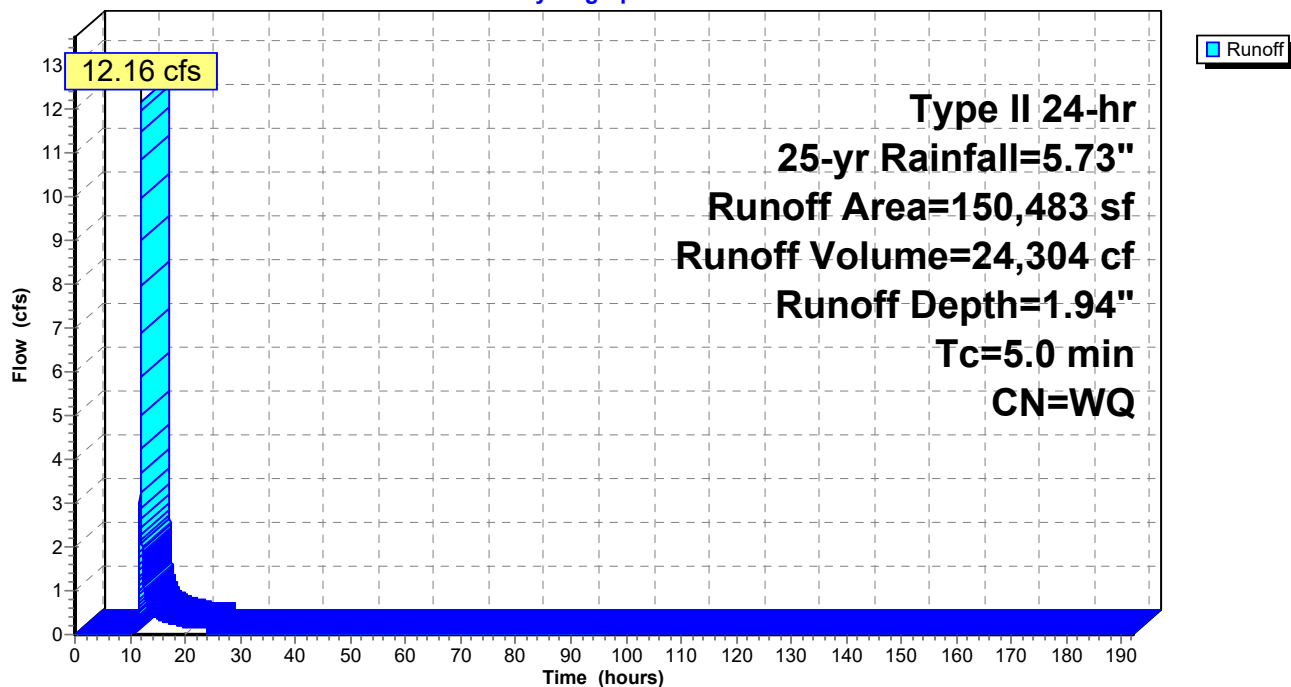
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 5.54 cfs @ 11.96 hrs, Volume= 13,079 cf, Depth= 5.37"

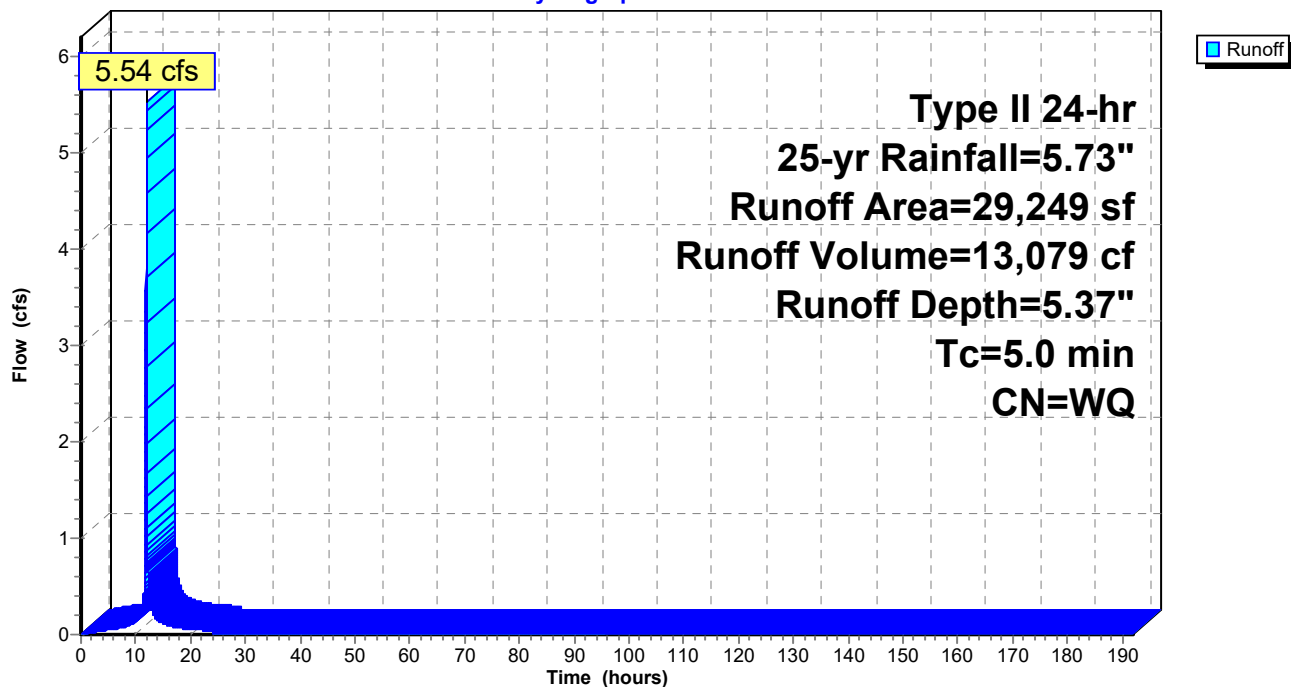
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 5.73 cfs @ 11.97 hrs, Volume= 11,337 cf, Depth= 1.86"

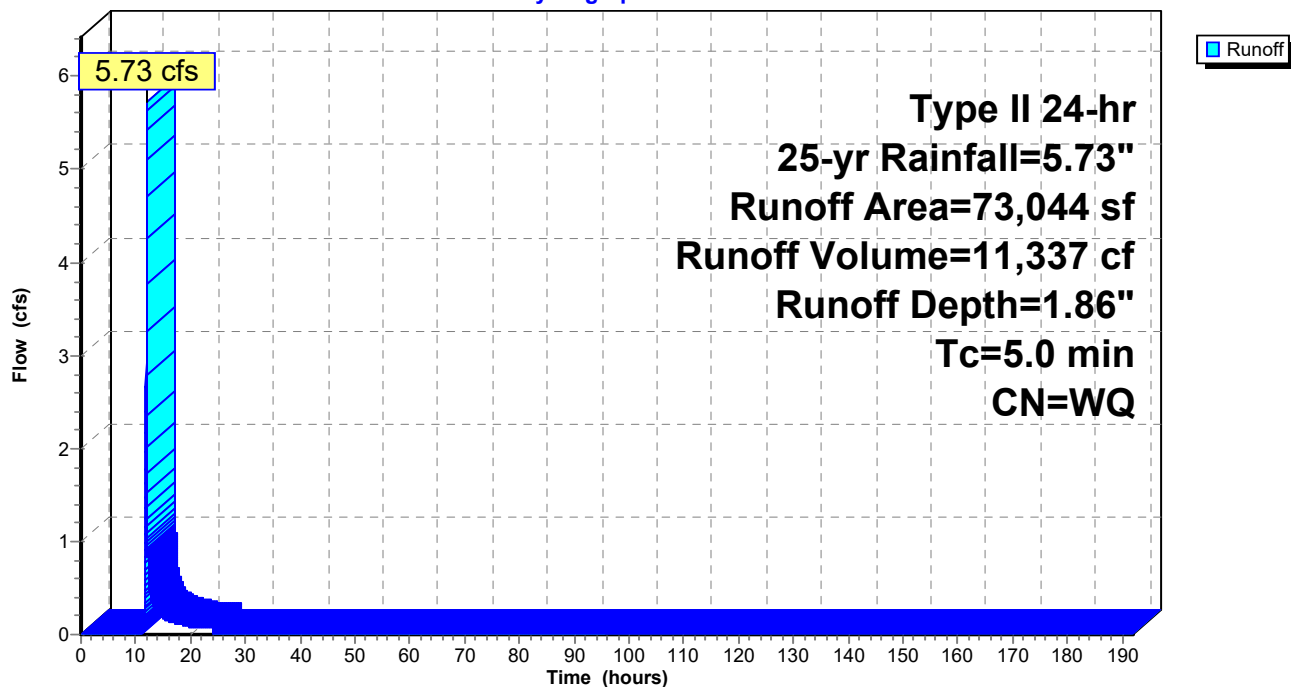
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.79 cfs @ 11.96 hrs, Volume= 1,792 cf, Depth= 3.73"

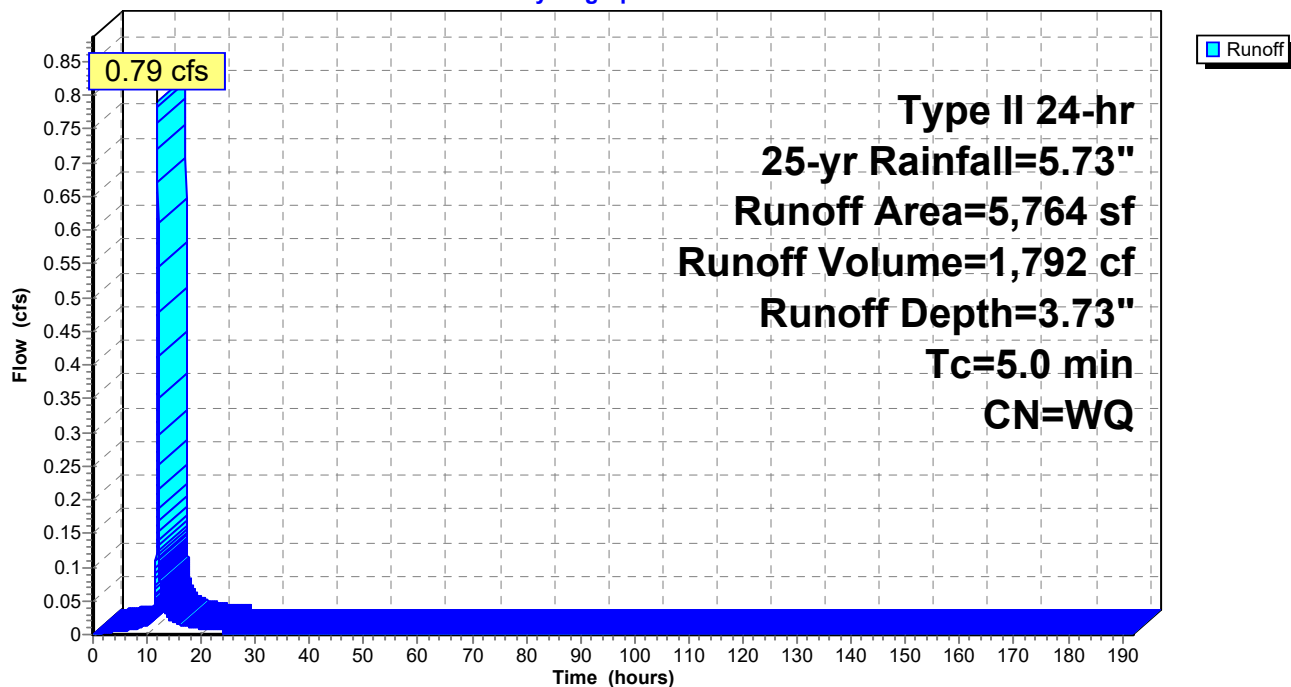
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 128.76 cfs @ 12.27 hrs, Volume= 636,200 cf, Depth= 3.12"

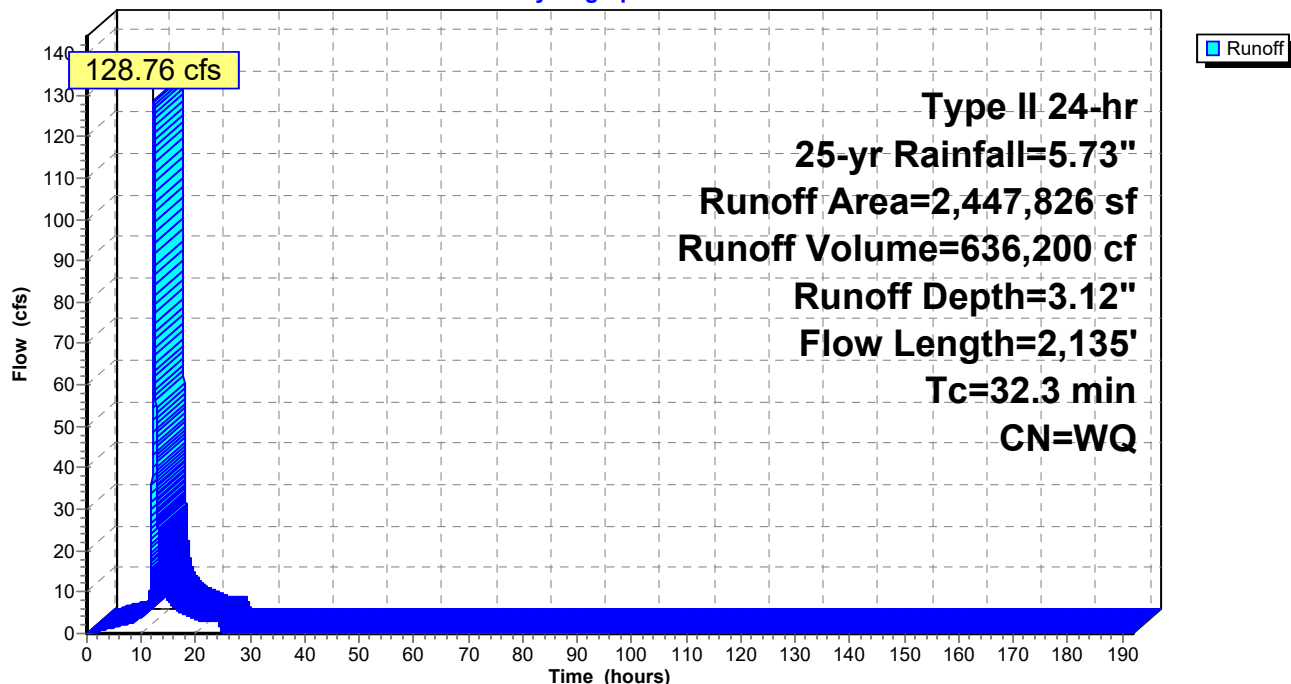
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment E2: PRE (OLOD)

Runoff = 3.95 cfs @ 12.28 hrs, Volume= 18,106 cf, Depth= 1.83"

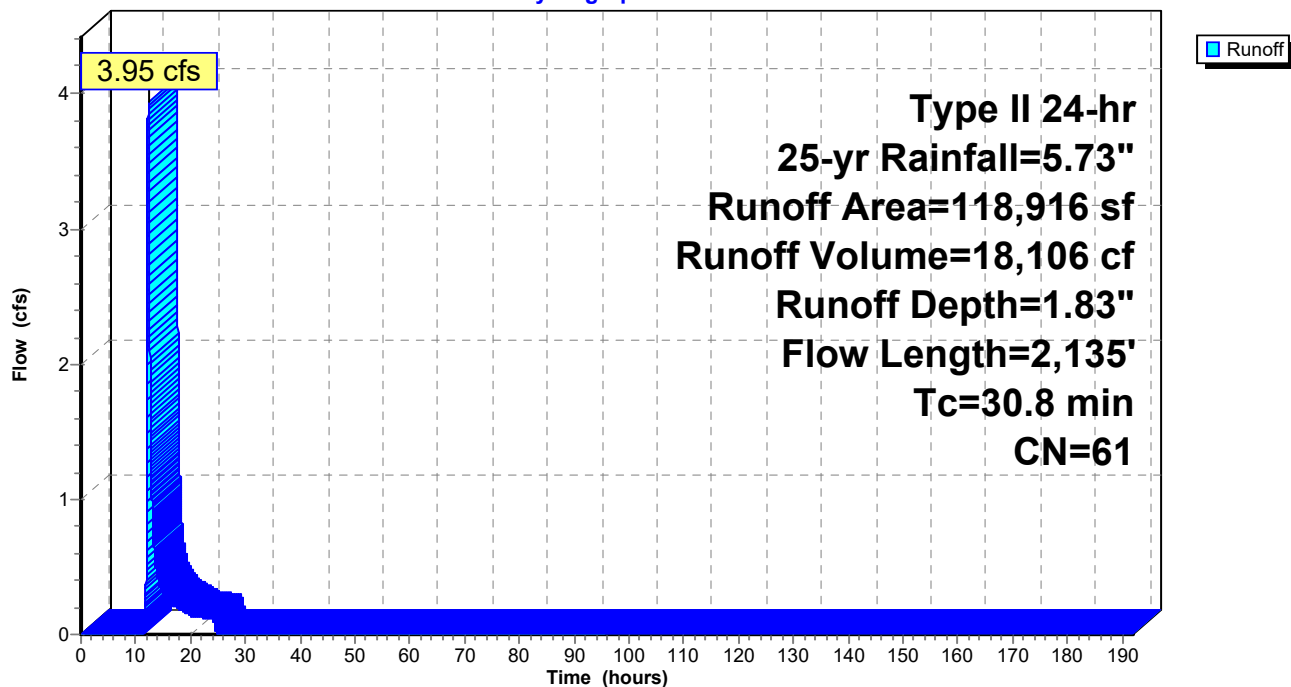
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 22.70 cfs @ 12.24 hrs, Volume= 100,991 cf, Depth= 2.32"

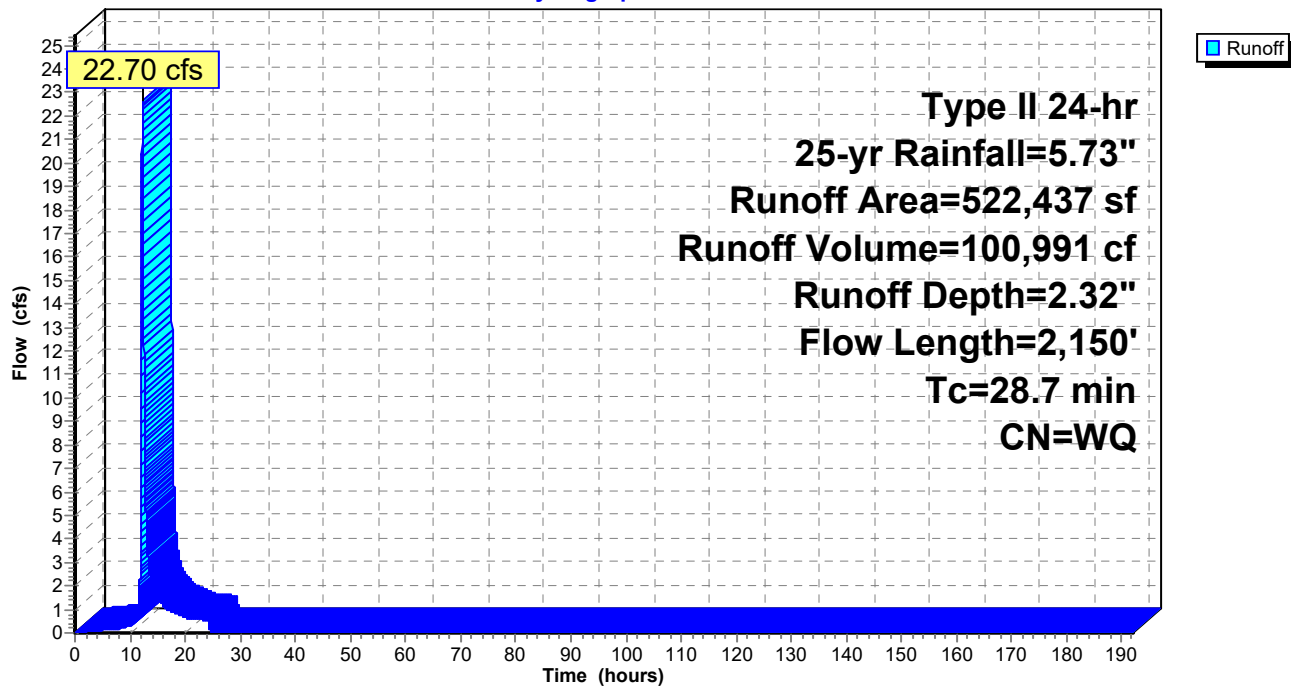
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



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Type II 24-hr 25-yr Rainfall=5.73"

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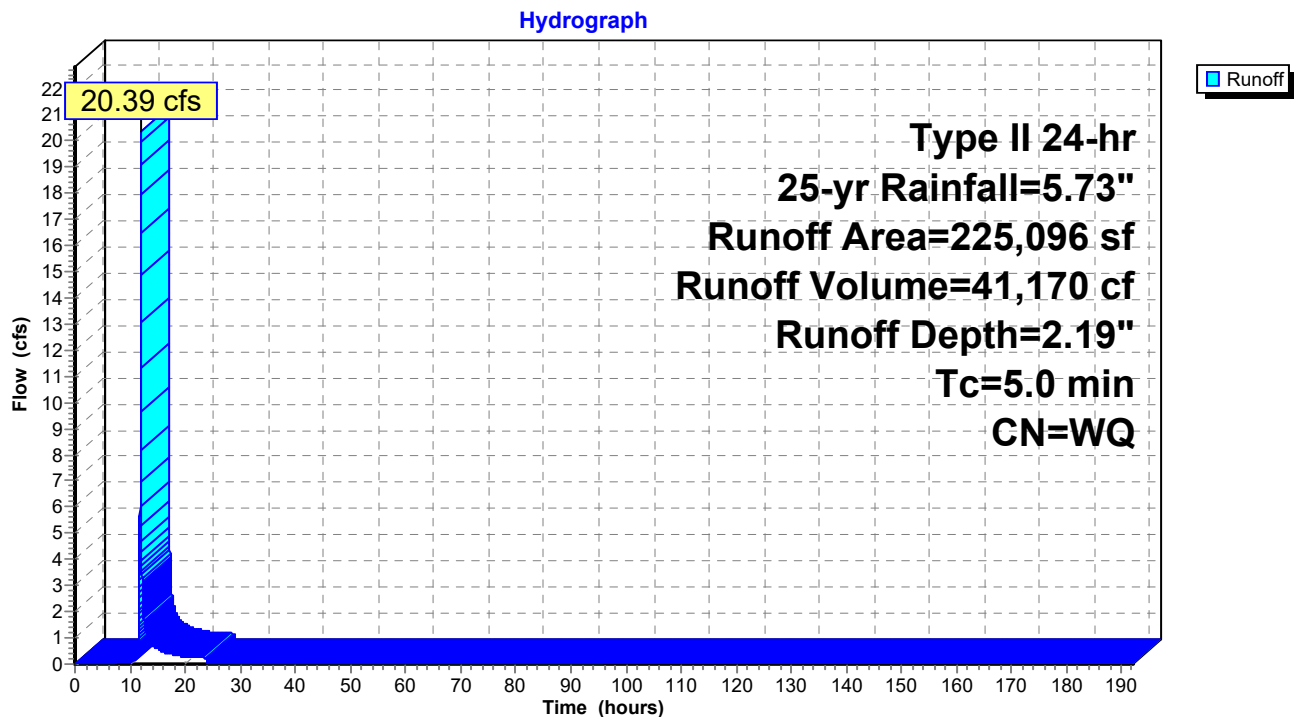
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 20.39 cfs @ 11.97 hrs, Volume= 41,170 cf, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 18.70 cfs @ 11.96 hrs, Volume= 44,230 cf, Depth= 5.49"

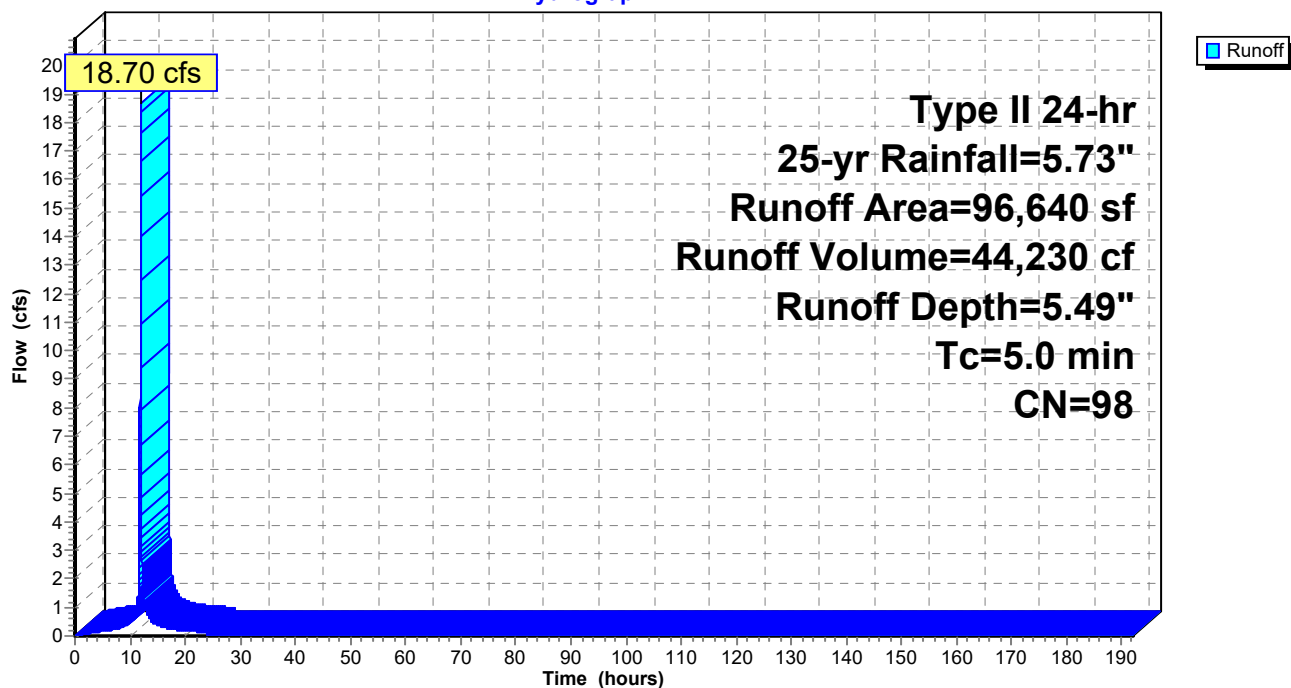
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 48.43 cfs @ 11.96 hrs, Volume= 100,991 cf, Depth= 2.32"

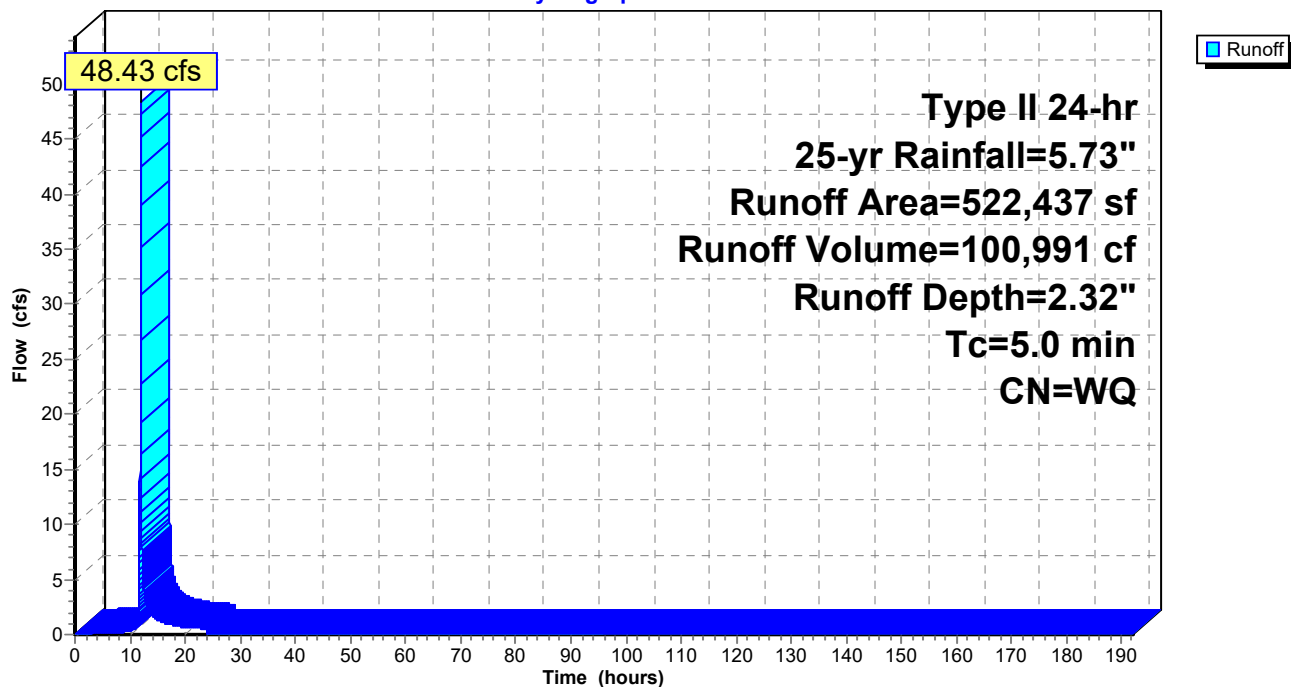
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 9.20 cfs @ 11.97 hrs, Volume= 18,106 cf, Depth= 1.83"

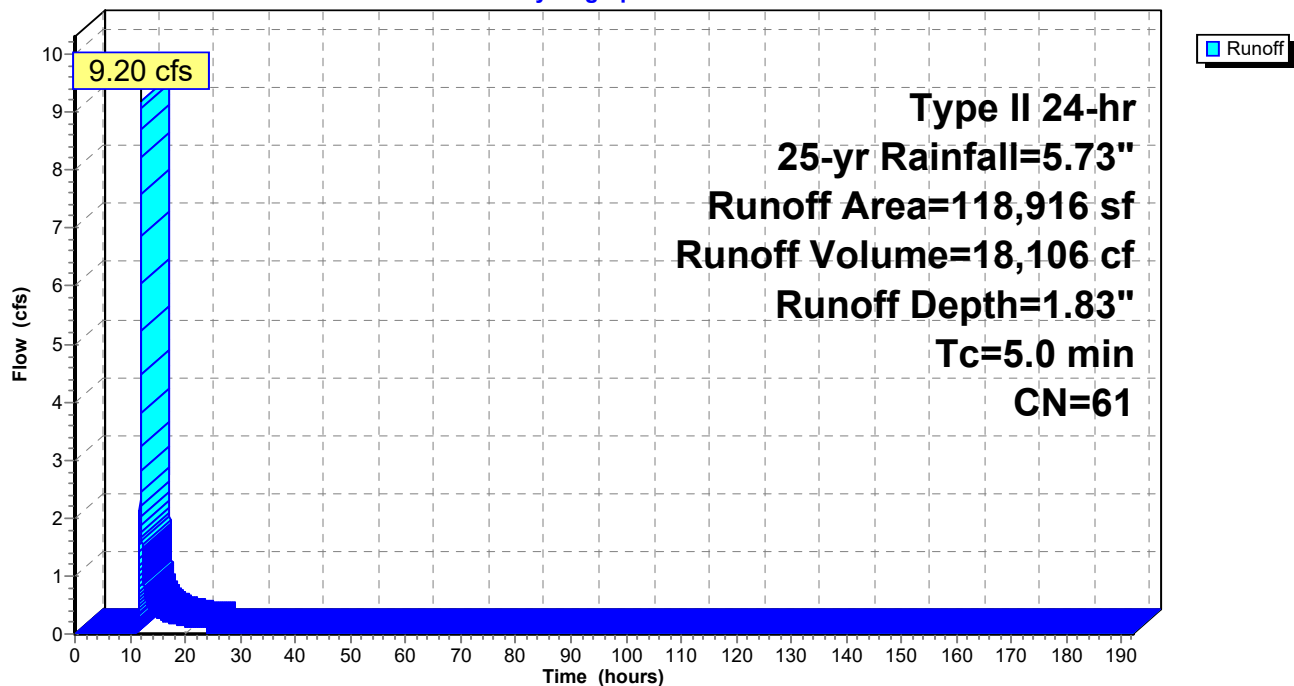
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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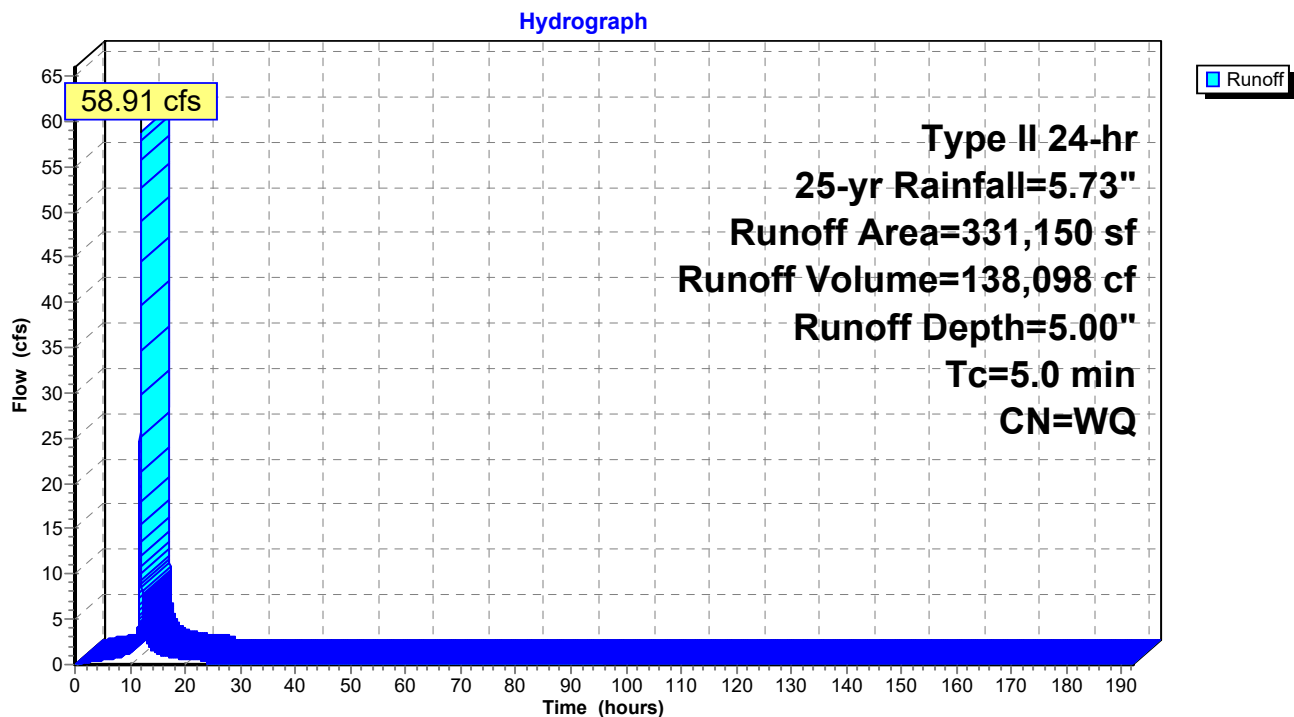
Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 58.91 cfs @ 11.96 hrs, Volume= 138,098 cf, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 56.61 cfs @ 11.96 hrs, Volume= 129,421 cf, Depth= 4.62"

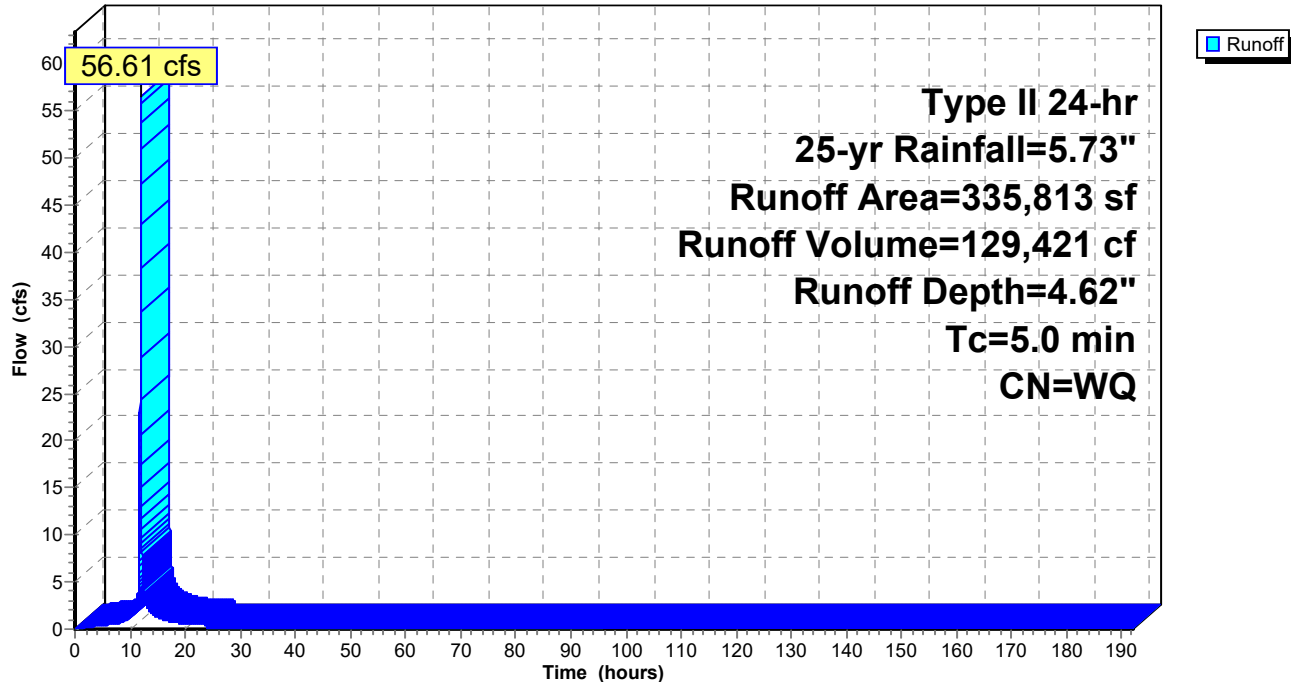
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
	57,394	61	>75% Grass cover, Good, HSG B
*	188,667	98	Building
*	19,774	98	Impervious
*	13,923	98	Generators
*	56,055	85	Gravel
	335,813		Weighted Average
	113,449	73	33.78% Pervious Area
	222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 85.69 cfs @ 11.96 hrs, Volume= 197,566 cf, Depth= 4.78"

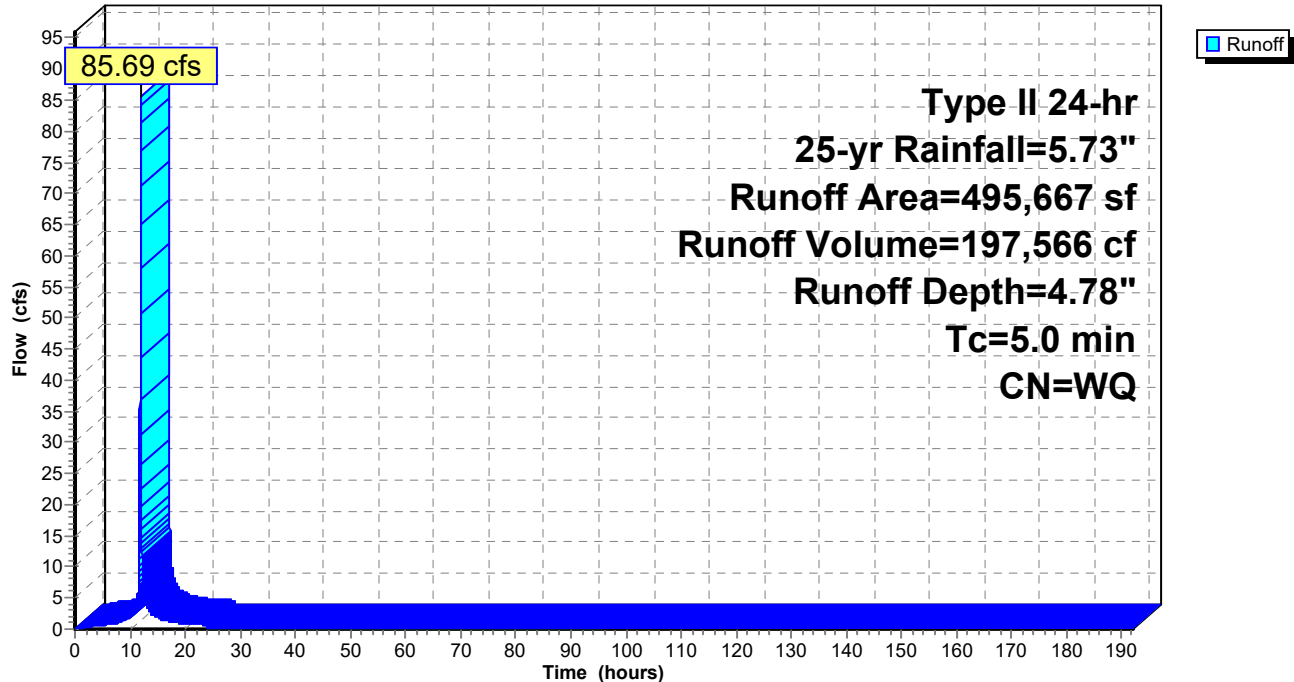
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 25-yr Rainfall=5.73"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 72.95 cfs @ 11.96 hrs, Volume= 163,936 cf, Depth= 4.33"

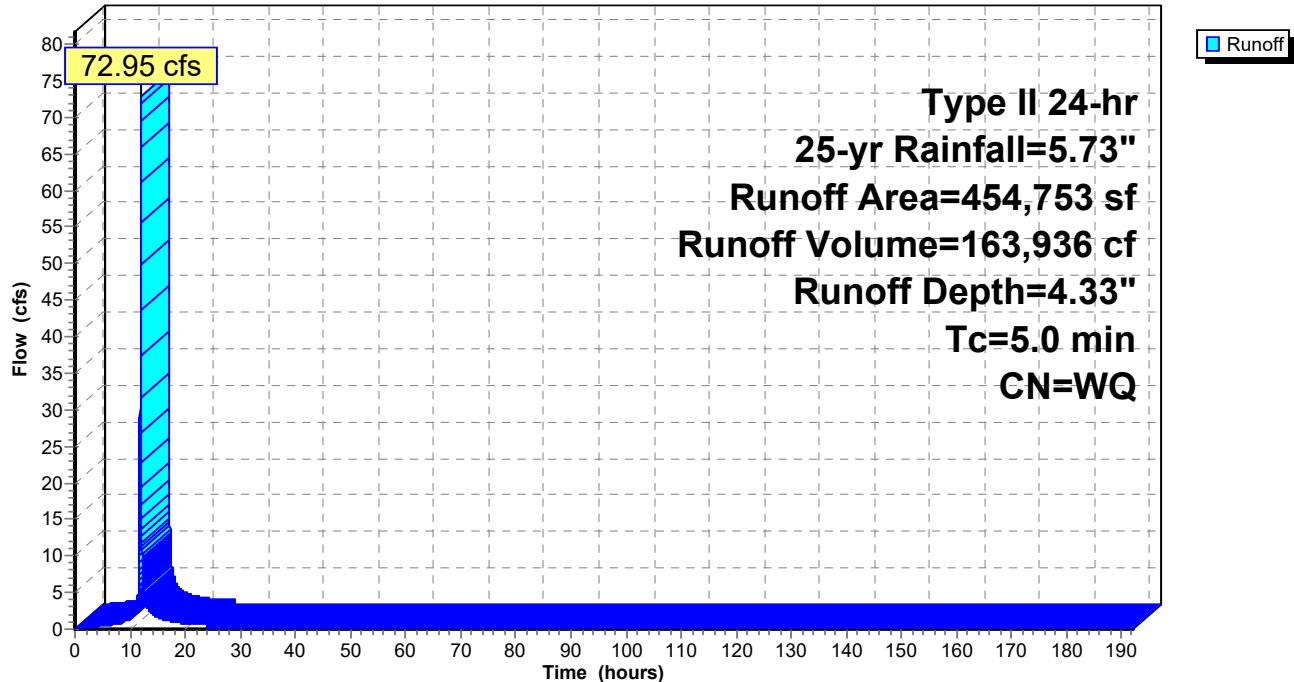
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 30.47 cfs @ 11.96 hrs, Volume= 64,164 cf, Depth= 3.08"

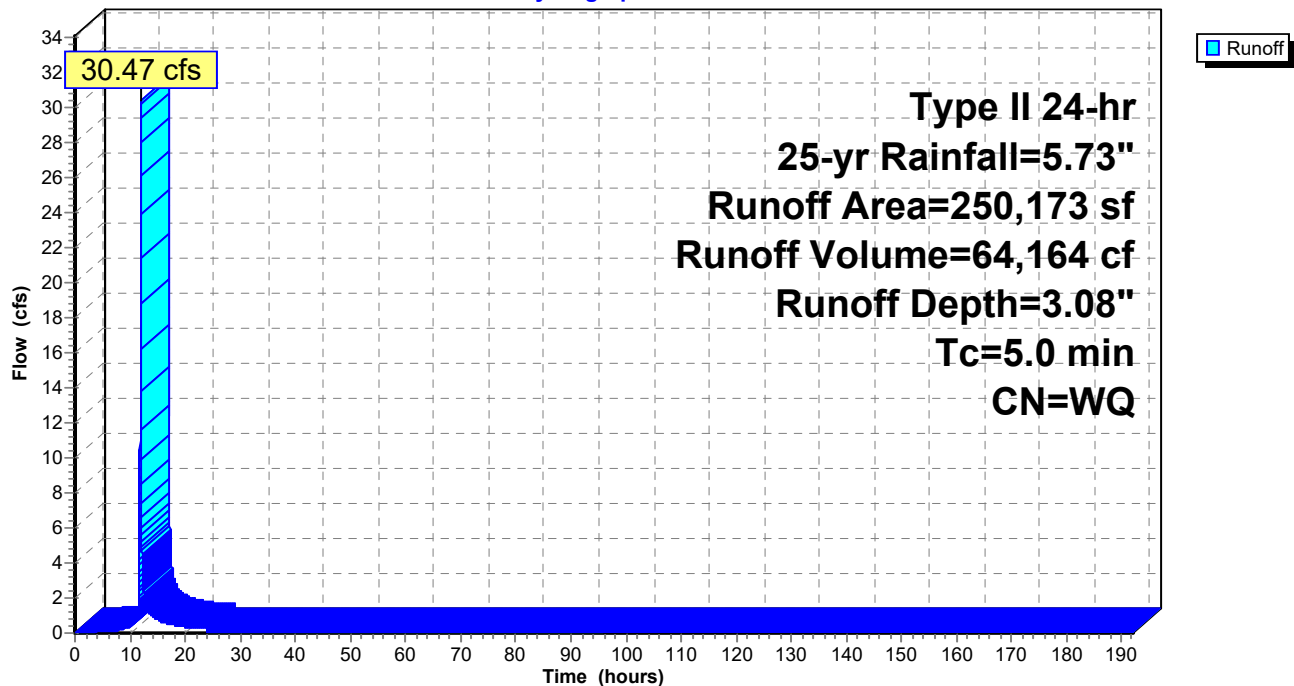
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=5.73"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Hydrograph



Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 3.64" for 25-yr event
 Inflow = 258.89 cfs @ 12.00 hrs, Volume= 859,317 cf
 Outflow = 58.53 cfs @ 12.48 hrs, Volume= 852,394 cf, Atten= 77%, Lag= 29.1 min
 Primary = 58.53 cfs @ 12.48 hrs, Volume= 852,394 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 358.51' @ 12.48 hrs Surf.Area= 87,009 sf Storage= 274,369 cf

Plug-Flow detention time= 251.4 min calculated for 852,394 cf (99% of inflow)
 Center-of-Mass det. time= 175.0 min (1,920.0 - 1,745.0)

Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

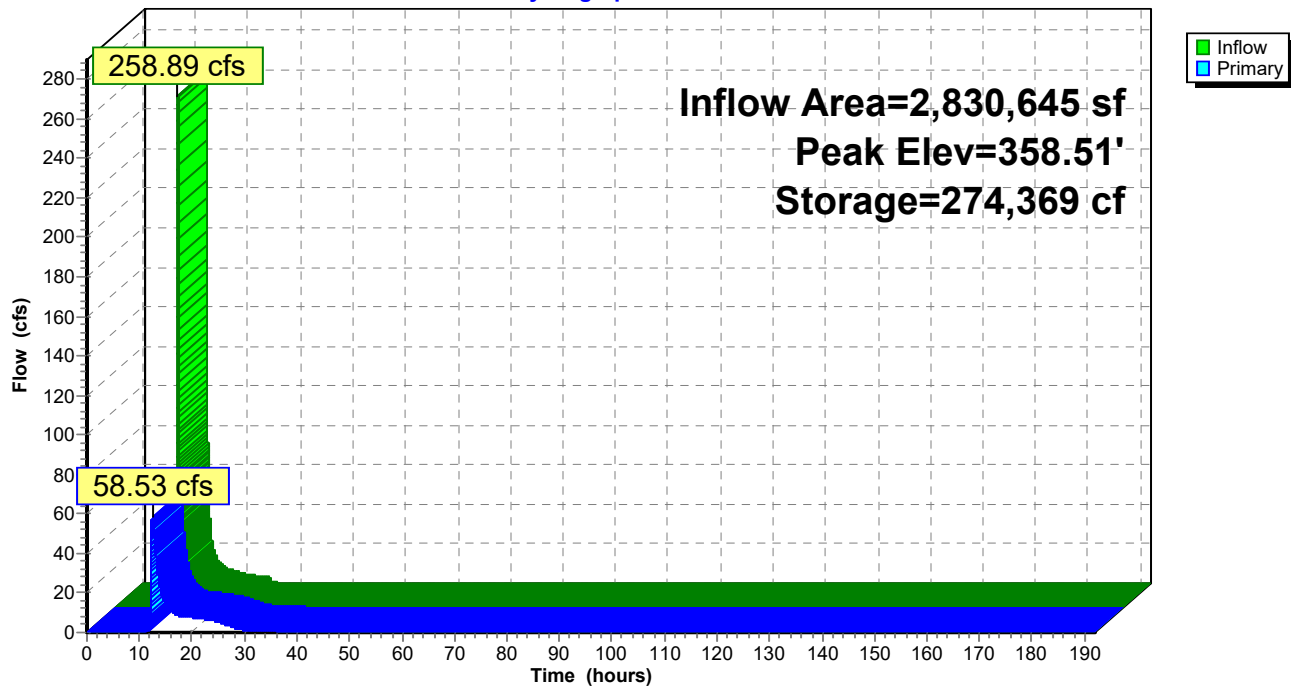
Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=58.53 cfs @ 12.48 hrs HW=358.51' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 58.53 cfs of 238.48 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 11.54 cfs @ 8.63 fps)
 3=19"Wx30"H Weir (Orifice Controls 46.99 cfs @ 3.94 fps)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

Hydrograph



2025-1201 SCS*Type II 24-hr 25-yr Rainfall=5.73"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 5.00" for 25-yr event
 Inflow = 58.91 cfs @ 11.96 hrs, Volume= 138,098 cf
 Outflow = 42.71 cfs @ 12.01 hrs, Volume= 136,176 cf, Atten= 27%, Lag= 3.4 min
 Primary = 38.31 cfs @ 12.01 hrs, Volume= 135,105 cf
 Secondary = 4.40 cfs @ 12.01 hrs, Volume= 1,071 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 362.12' @ 12.01 hrs Surf.Area= 38,913 sf Storage= 53,779 cf

Plug-Flow detention time= 1,160.6 min calculated for 136,169 cf (99% of inflow)
 Center-of-Mass det. time= 1,151.7 min (1,898.2 - 746.5)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

2025-1201 SCS

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Type II 24-hr 25-yr Rainfall=5.73"

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Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=38.30 cfs @ 12.01 hrs HW=362.12' TW=356.90' (Dynamic Tailwater)

1=Outflow Pipe (Passes 38.30 cfs of 73.16 cfs potential flow)

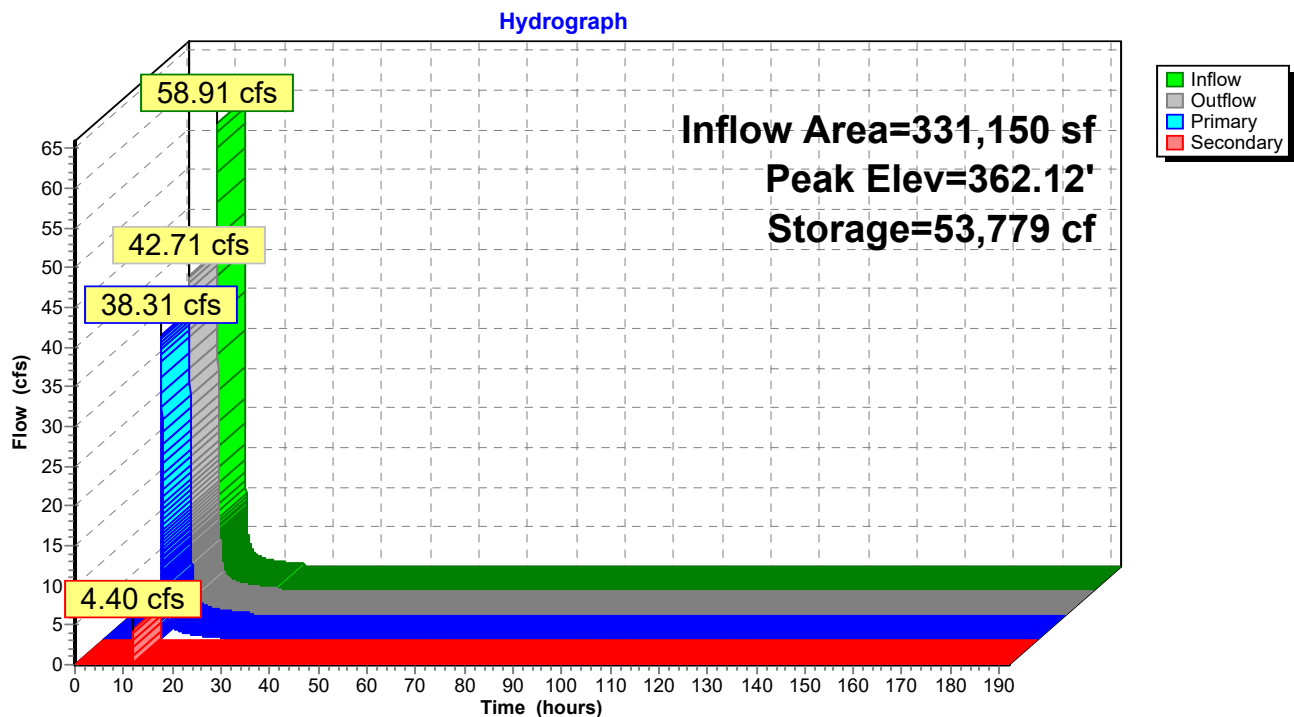
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.85 fps)

3=Type M Overflow (Orifice Controls 38.22 cfs @ 5.10 fps)

Secondary OutFlow Max=4.35 cfs @ 12.01 hrs HW=362.12' TW=356.90' (Dynamic Tailwater)

4=Emergency Spillway (Weir Controls 4.35 cfs @ 0.90 fps)

Pond SCM-2: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 25-yr Rainfall=5.73"*

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 4.62" for 25-yr event
 Inflow = 56.61 cfs @ 11.96 hrs, Volume= 129,421 cf
 Outflow = 33.89 cfs @ 12.03 hrs, Volume= 121,842 cf, Atten= 40%, Lag= 4.3 min
 Primary = 33.89 cfs @ 12.03 hrs, Volume= 121,842 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 361.93' @ 12.03 hrs Surf.Area= 46,047 sf Storage= 61,292 cf

Plug-Flow detention time= 1,577.5 min calculated for 121,842 cf (94% of inflow)
 Center-of-Mass det. time= 1,542.9 min (2,300.0 - 757.2)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=33.88 cfs @ 12.03 hrs HW=361.93' TW=357.08' (Dynamic Tailwater)

1=Outflow Pipe (Passes 33.88 cfs of 71.65 cfs potential flow)

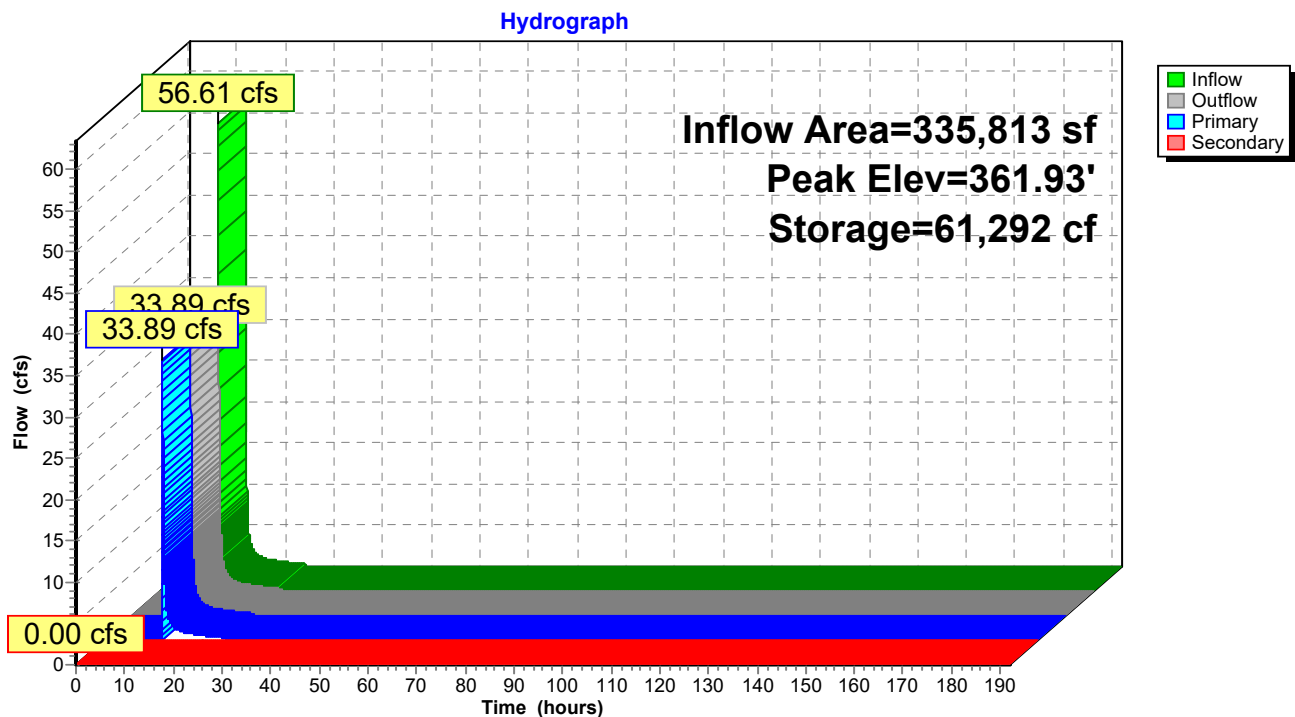
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.61 fps)

3=Type M Overflow (Weir Controls 33.81 cfs @ 3.16 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-3: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 25-yr Rainfall=5.73"*

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Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 4.78" for 25-yr event
 Inflow = 85.69 cfs @ 11.96 hrs, Volume= 197,566 cf
 Outflow = 42.40 cfs @ 12.04 hrs, Volume= 183,610 cf, Atten= 51%, Lag= 5.1 min
 Primary = 42.40 cfs @ 12.04 hrs, Volume= 183,610 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.37' @ 12.04 hrs Surf.Area= 59,757 sf Storage= 88,913 cf

Plug-Flow detention time= 1,132.2 min calculated for 183,600 cf (93% of inflow)
 Center-of-Mass det. time= 1,092.2 min (1,845.5 - 753.3)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

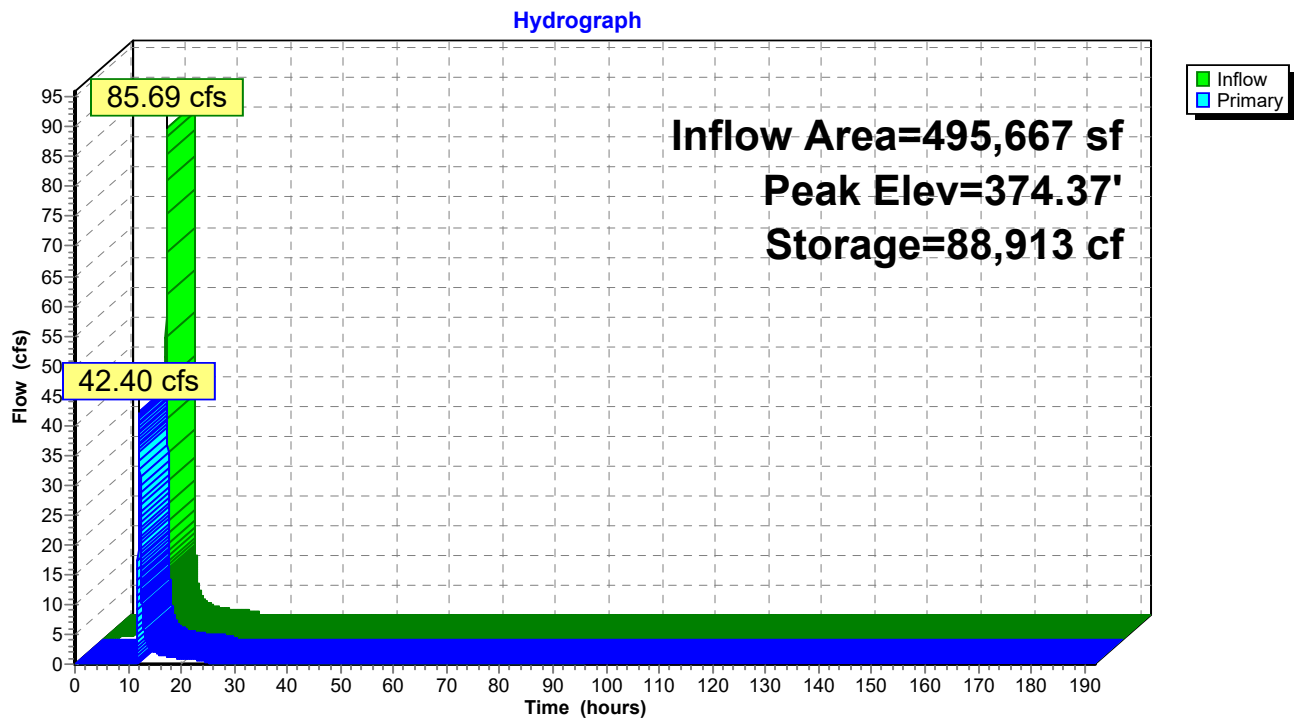
Primary OutFlow Max=42.39 cfs @ 12.04 hrs HW=374.37' TW=357.20' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 42.39 cfs of 69.53 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 11.11 fps)

3=Type M Overflow (Orifice Controls 42.31 cfs @ 5.64 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 25-yr Rainfall=5.73"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 3.81" for 25-yr event
 Inflow = 82.07 cfs @ 11.96 hrs, Volume= 182,041 cf
 Outflow = 39.03 cfs @ 12.05 hrs, Volume= 168,081 cf, Atten= 52%, Lag= 5.2 min
 Primary = 39.03 cfs @ 12.05 hrs, Volume= 168,081 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.16' @ 12.05 hrs Surf.Area= 58,940 sf Storage= 82,076 cf

Plug-Flow detention time= 1,221.8 min calculated for 168,072 cf (92% of inflow)
 Center-of-Mass det. time= 1,179.2 min (1,953.7 - 774.5)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

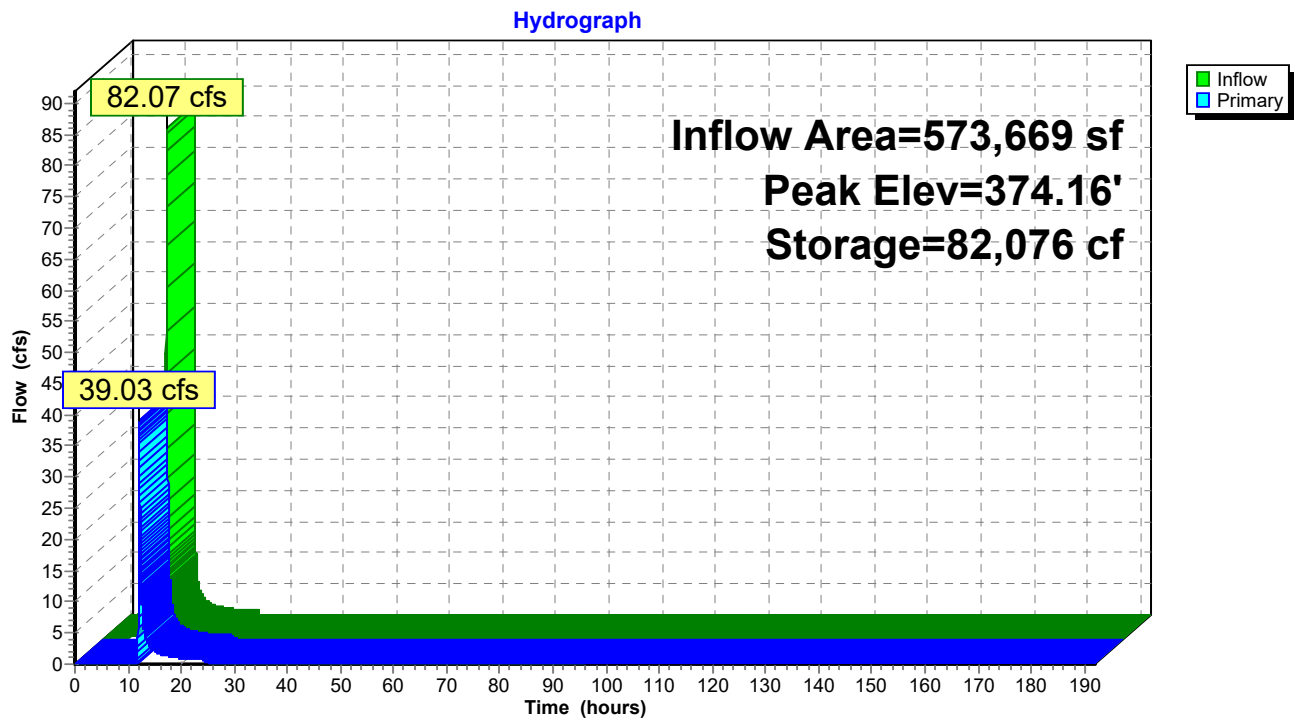
Primary OutFlow Max=39.02 cfs @ 12.05 hrs HW=374.16' TW=357.24' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 39.02 cfs of 67.76 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.89 fps)

3=Type M Overflow (Orifice Controls 38.95 cfs @ 5.19 fps)

Pond SCM-5: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 25-yr Rainfall=5.73"*

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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 2.57" for 25-yr event
 Inflow = 78.88 cfs @ 11.96 hrs, Volume= 165,155 cf
 Outflow = 72.73 cfs @ 11.99 hrs, Volume= 164,208 cf, Atten= 8%, Lag= 1.7 min
 Primary = 14.41 cfs @ 11.99 hrs, Volume= 133,270 cf
 Secondary = 58.32 cfs @ 11.99 hrs, Volume= 30,938 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 369.57' @ 11.99 hrs Surf.Area= 27,489 sf Storage= 41,553 cf

Plug-Flow detention time= 567.9 min calculated for 164,199 cf (99% of inflow)
 Center-of-Mass det. time= 564.8 min (1,378.5 - 813.7)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 ' /' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

2025-1201 SCS

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Type II 24-hr 25-yr Rainfall=5.73"

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Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=14.41 cfs @ 11.99 hrs HW=369.57' TW=356.65' (Dynamic Tailwater)

1=Outflow Pipe (Inlet Controls 14.41 cfs @ 11.74 fps)

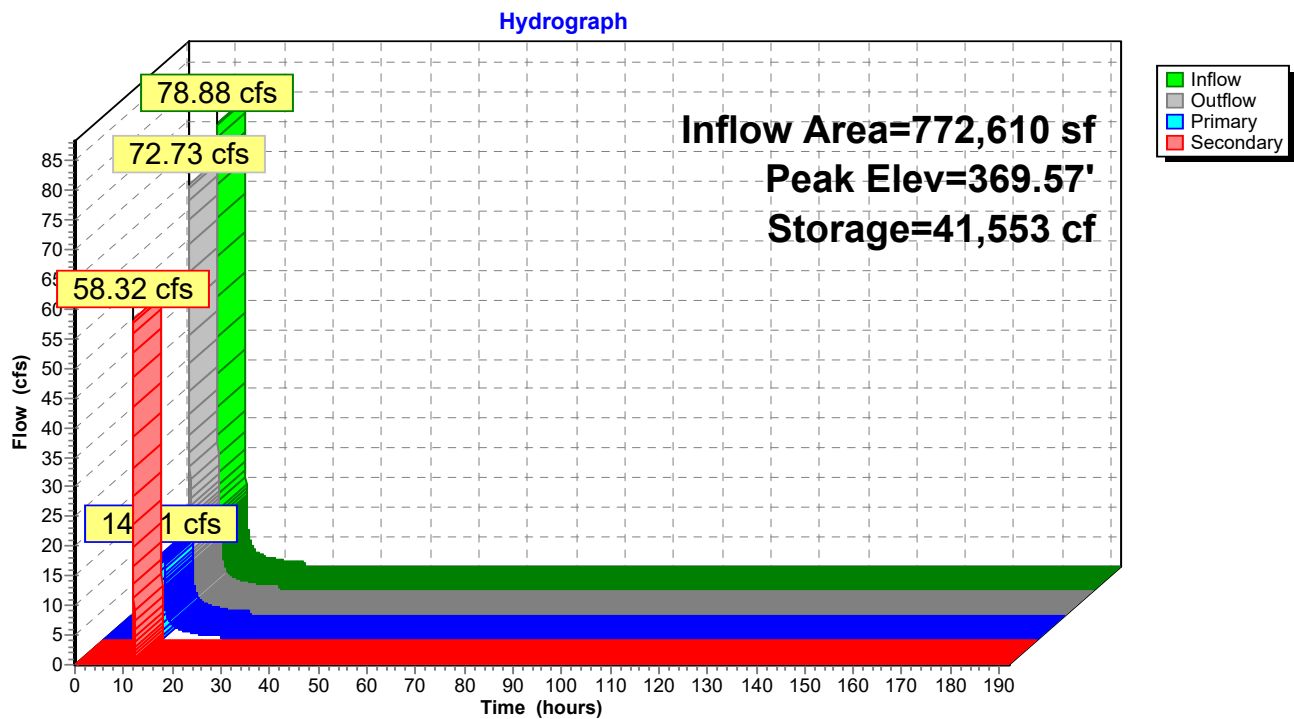
2=MRC Low Flow Orifice (Passes < 0.06 cfs potential flow)

3=Type M Overflow (Passes < 45.28 cfs potential flow)

Secondary OutFlow Max=58.22 cfs @ 11.99 hrs HW=369.57' TW=356.65' (Dynamic Tailwater)

4=Spillway (Weir Controls 58.22 cfs @ 2.04 fps)

Pond SCM-6: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 25-yr Rainfall=5.73"*

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Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

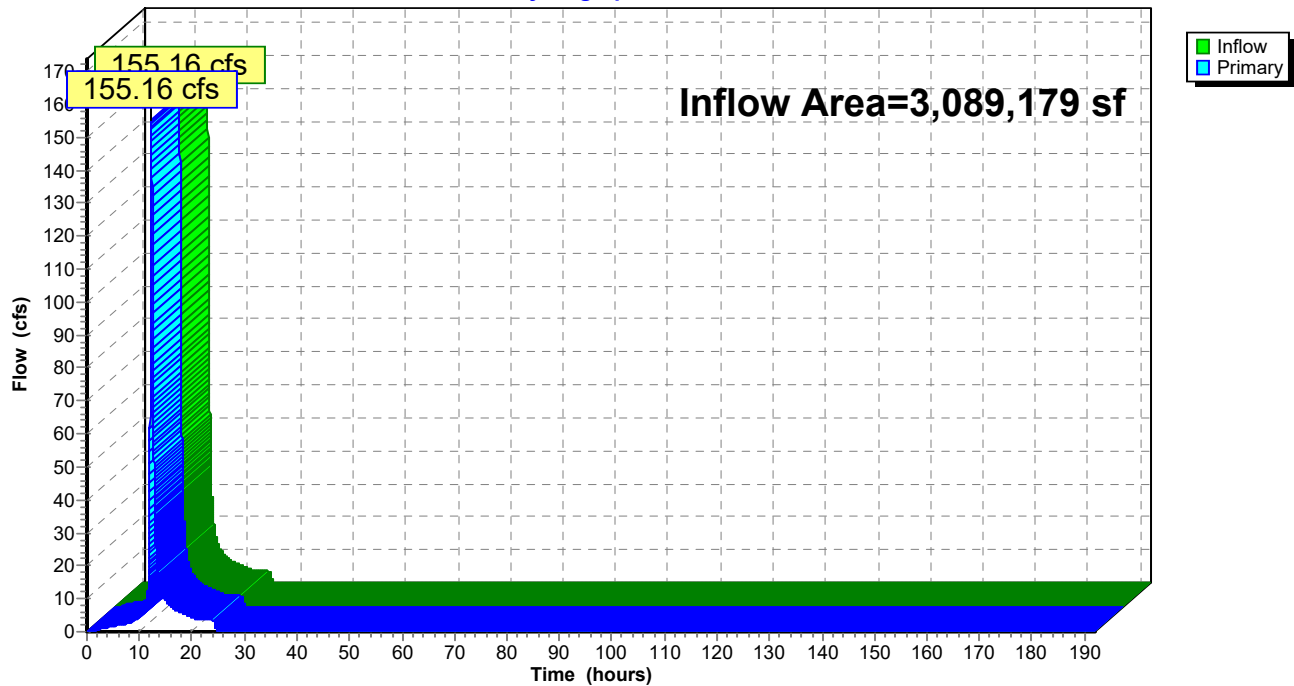
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 2.93" for 25-yr event
Inflow = 155.16 cfs @ 12.27 hrs, Volume= 755,297 cf
Primary = 155.16 cfs @ 12.27 hrs, Volume= 755,297 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

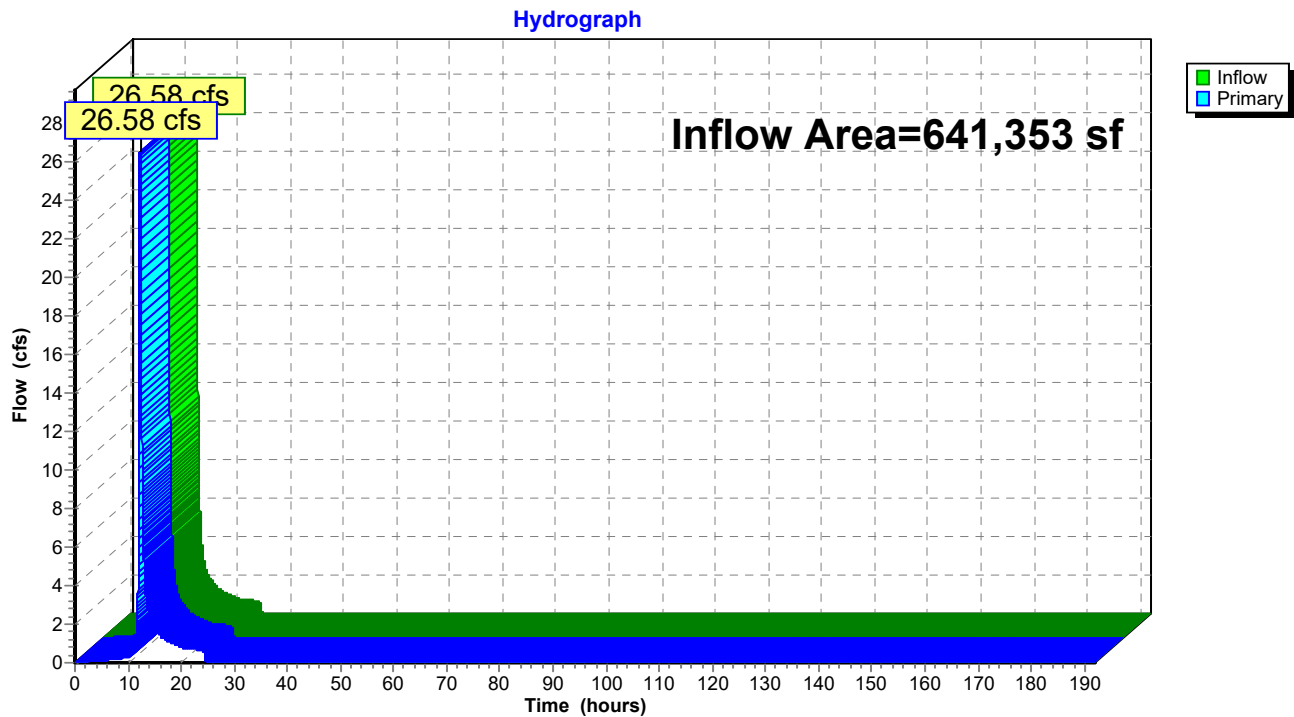
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 2.23" for 25-yr event
Inflow = 26.58 cfs @ 12.24 hrs, Volume= 119,097 cf
Primary = 26.58 cfs @ 12.24 hrs, Volume= 119,097 cf, Atten= 0%, Lag= 0.0 min

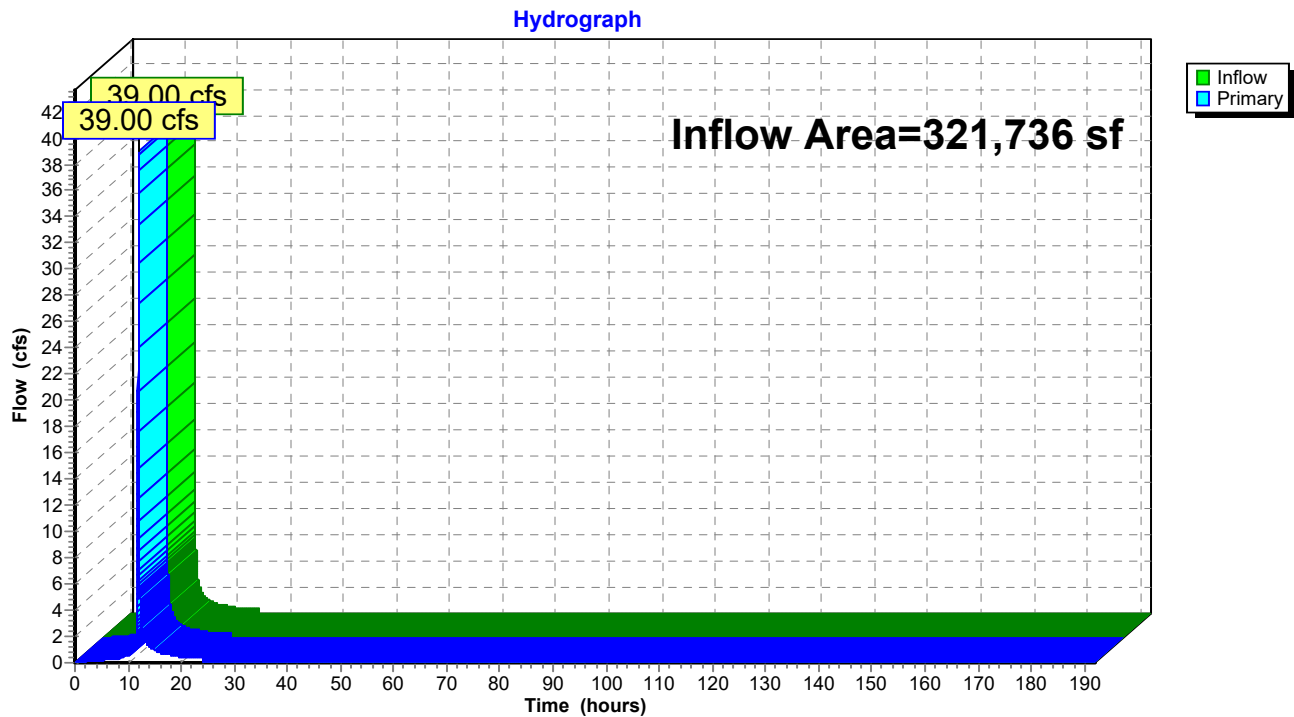
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 3.19" for 25-yr event
Inflow = 39.00 cfs @ 11.96 hrs, Volume= 85,401 cf
Primary = 39.00 cfs @ 11.96 hrs, Volume= 85,401 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

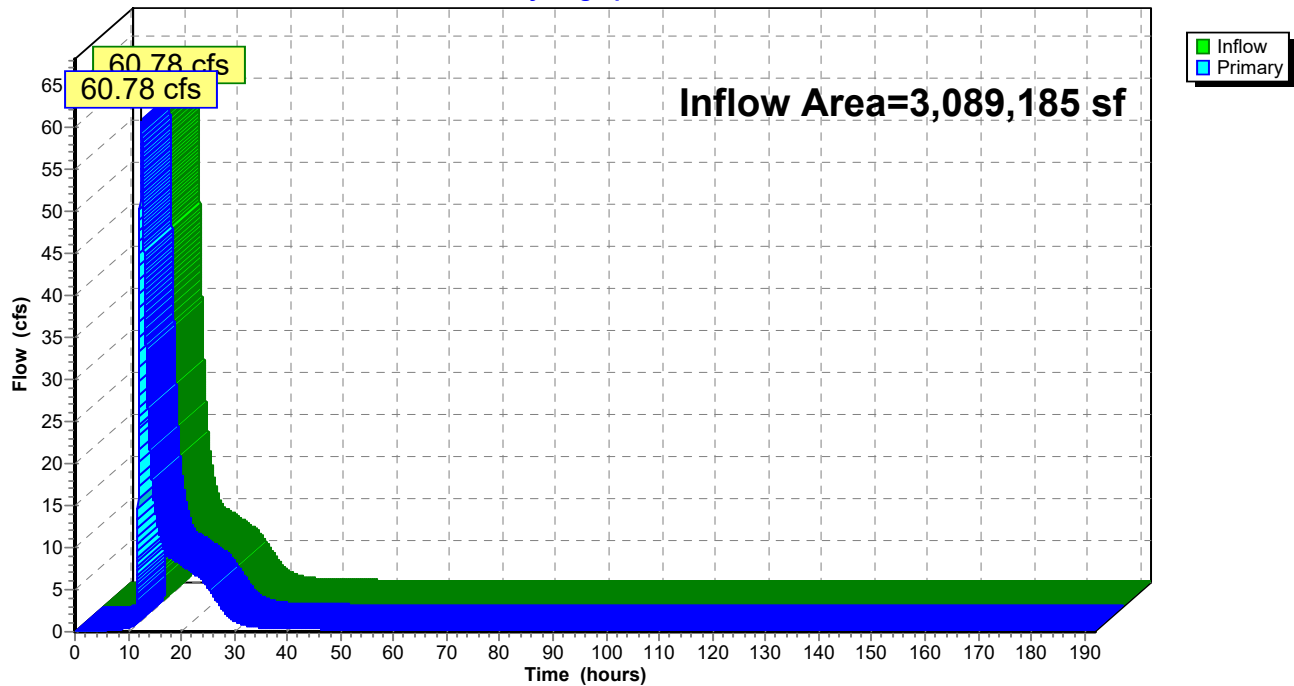
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 3.51" for 25-yr event
Inflow = 60.78 cfs @ 12.46 hrs, Volume= 902,906 cf
Primary = 60.78 cfs @ 12.46 hrs, Volume= 902,906 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 15.88 cfs @ 11.97 hrs, Volume= 31,453 cf, Depth= 2.51"

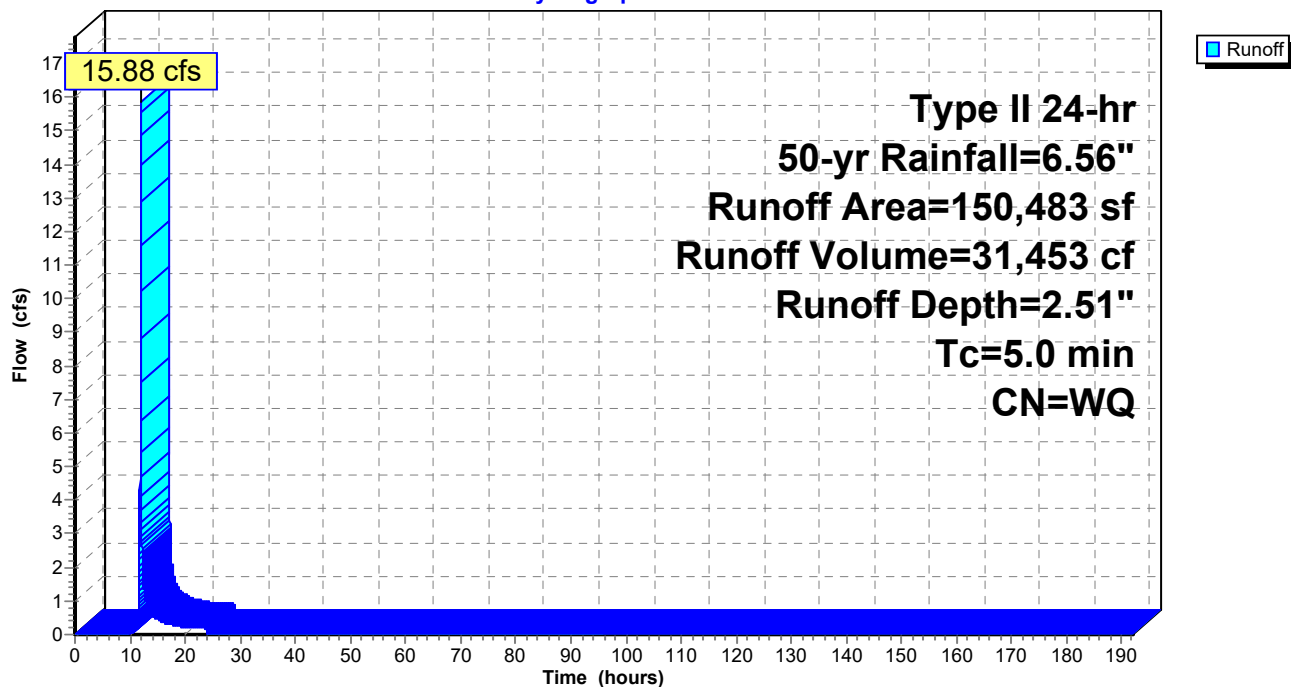
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 6.36 cfs @ 11.96 hrs, Volume= 15,077 cf, Depth= 6.19"

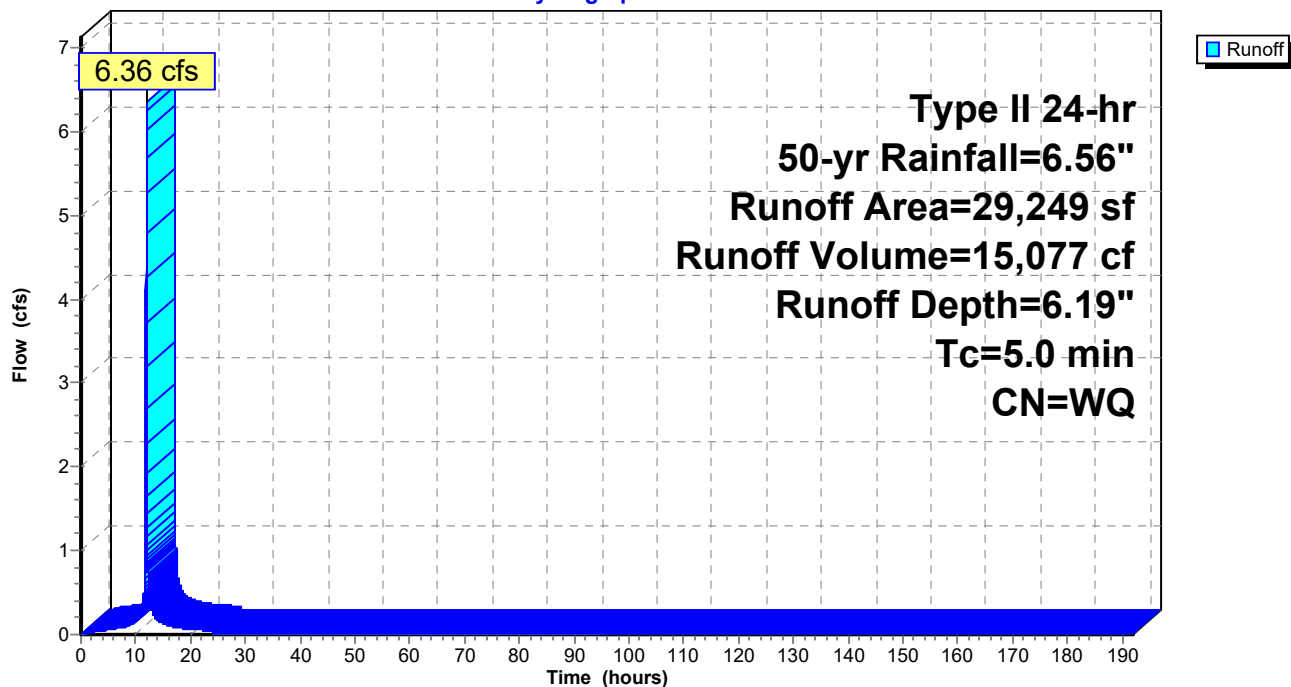
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

Hydrograph



Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 7.53 cfs @ 11.97 hrs, Volume= 14,774 cf, Depth= 2.43"

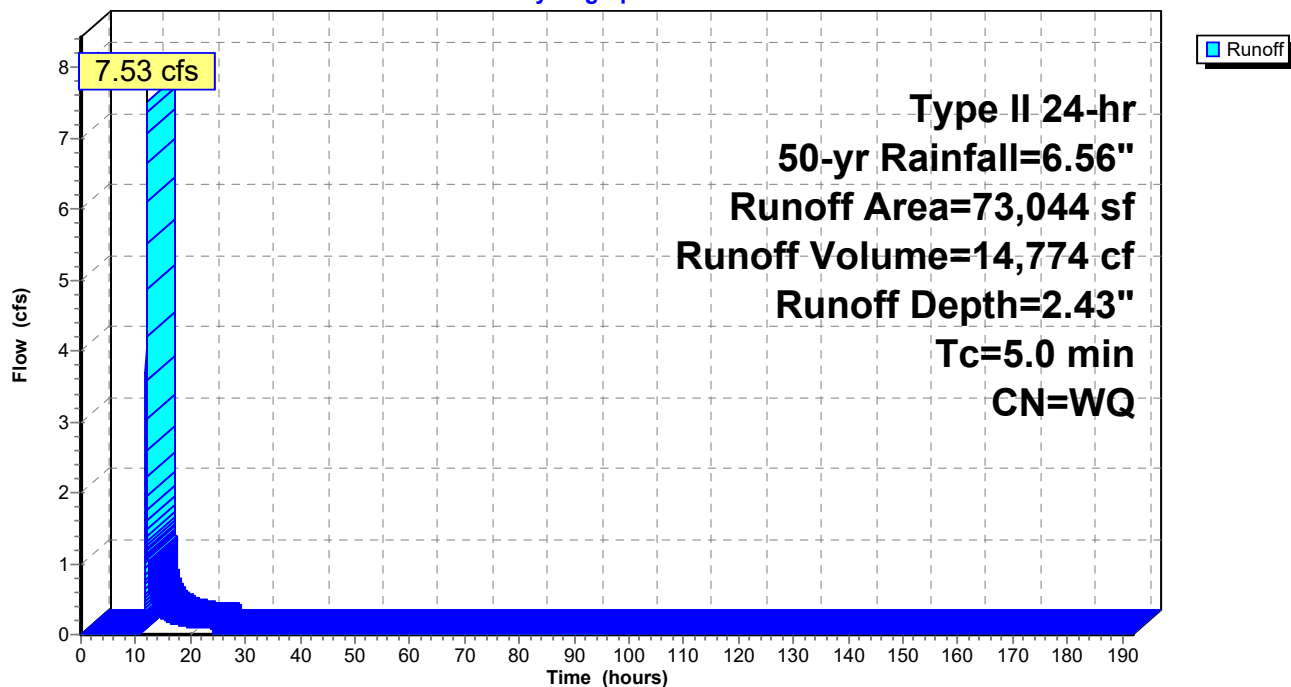
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Hydrograph



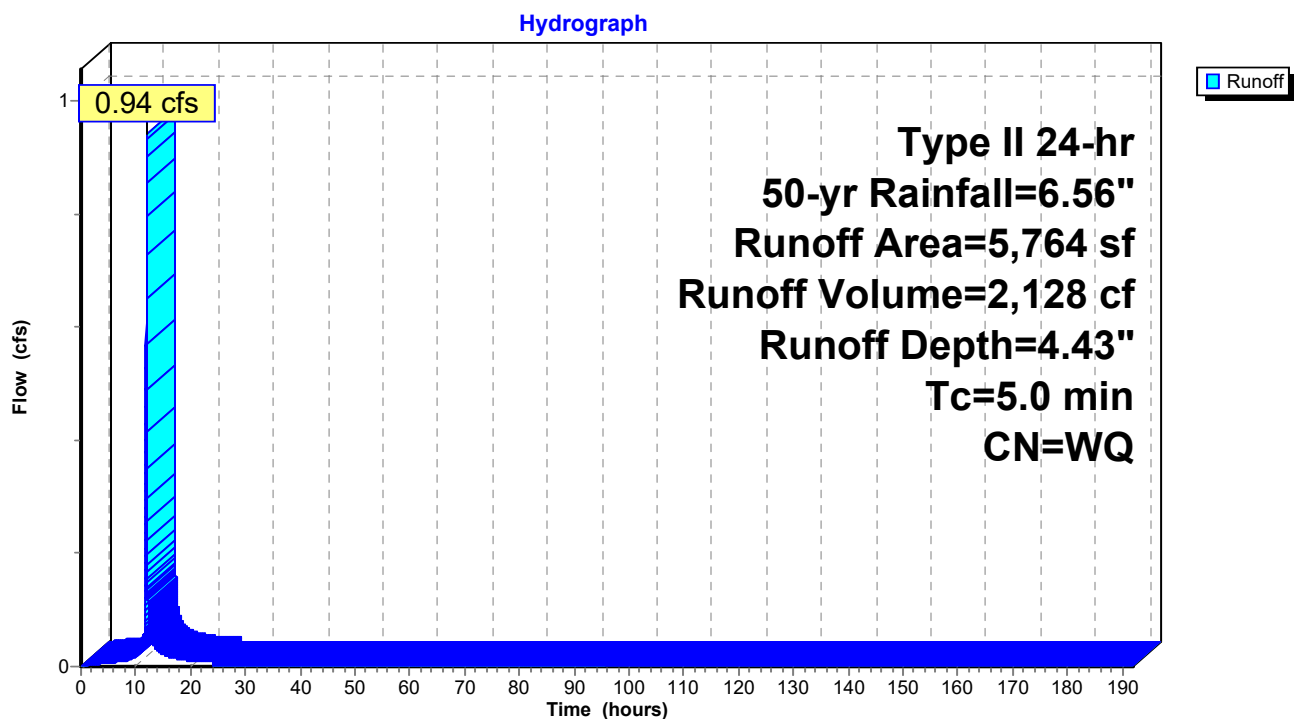
Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.94 cfs @ 11.96 hrs, Volume= 2,128 cf, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 157.33 cfs @ 12.27 hrs, Volume= 767,495 cf, Depth= 3.76"

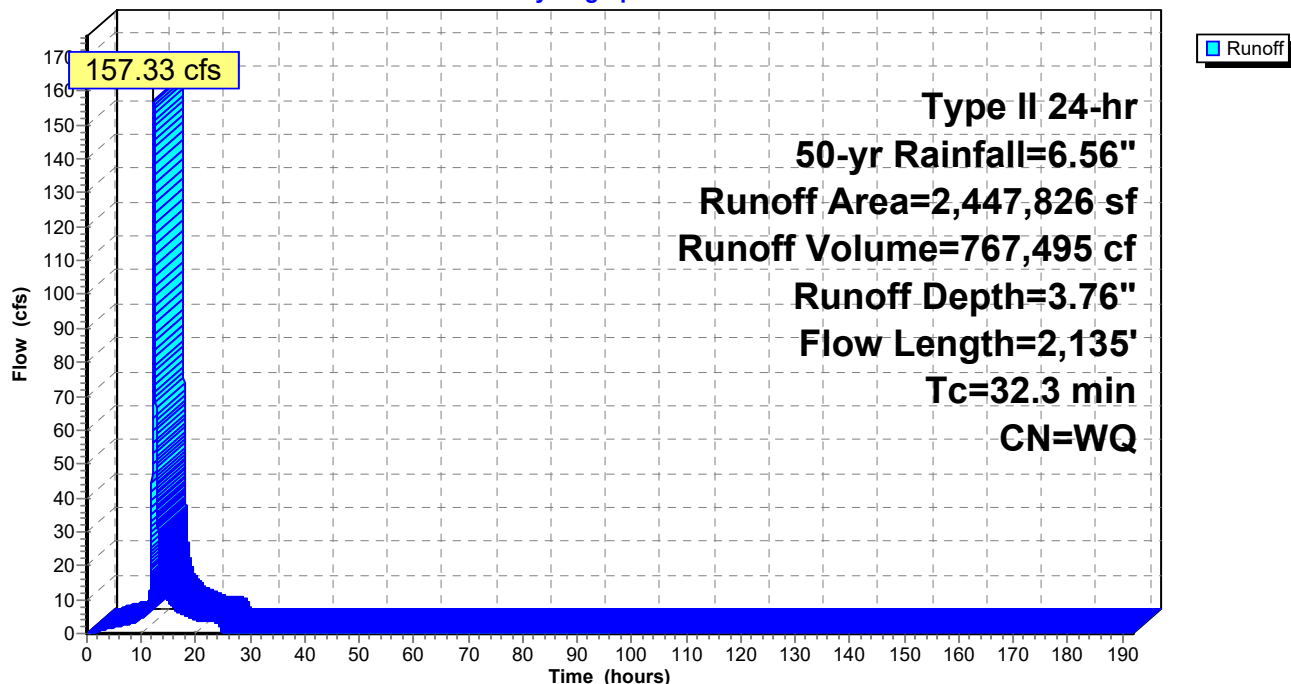
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment E2: PRE (OLOD)

Runoff = 5.31 cfs @ 12.28 hrs, Volume= 23,675 cf, Depth= 2.39"

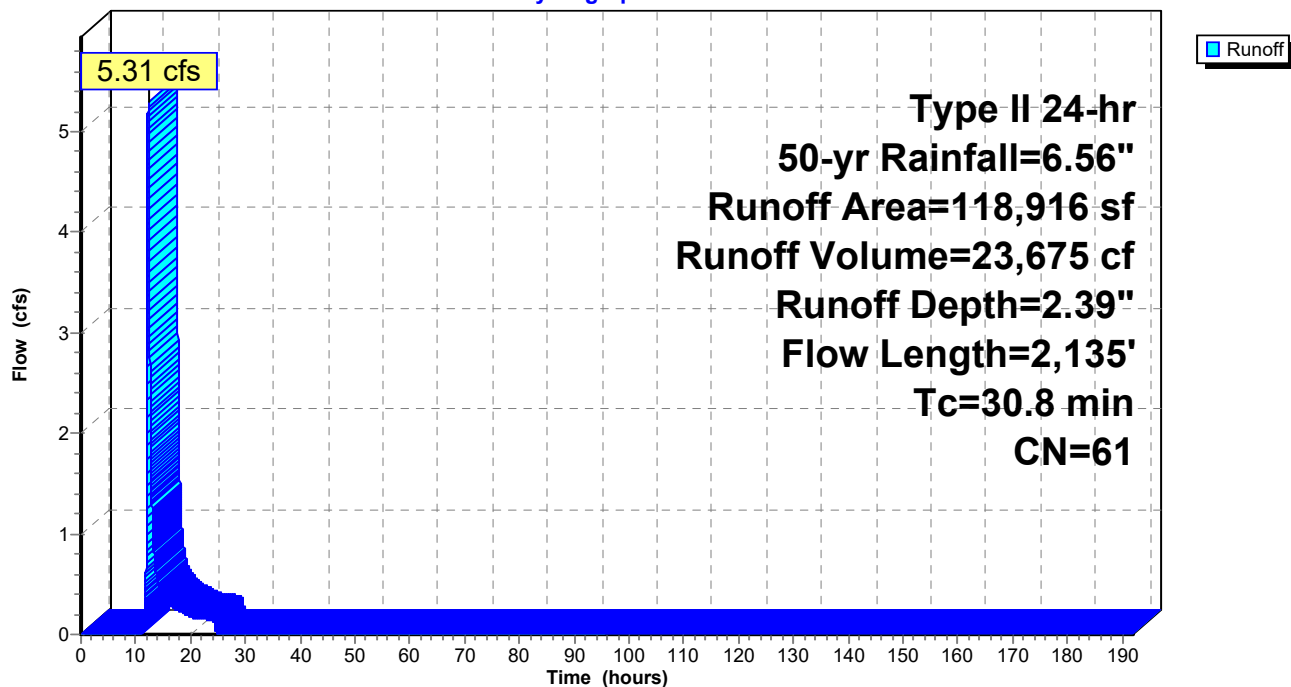
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 29.16 cfs @ 12.22 hrs, Volume= 127,023 cf, Depth= 2.92"

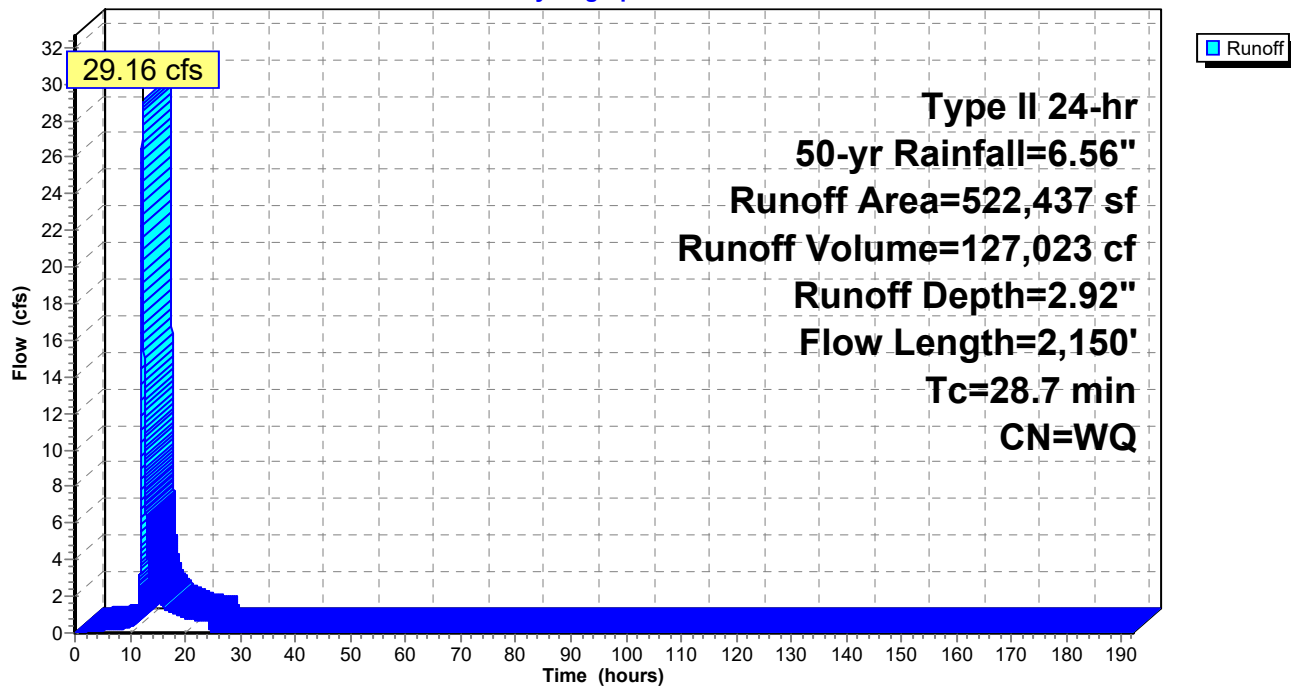
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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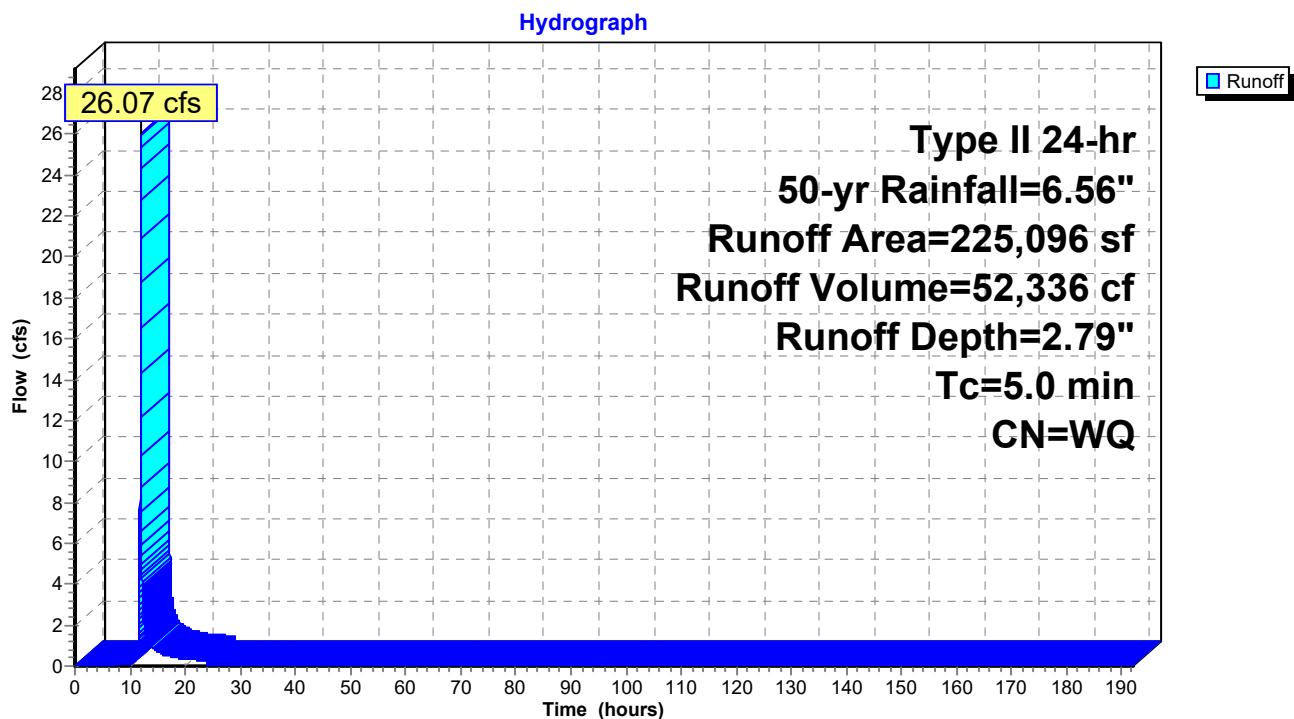
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 26.07 cfs @ 11.96 hrs, Volume= 52,336 cf, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 21.43 cfs @ 11.96 hrs, Volume= 50,908 cf, Depth= 6.32"

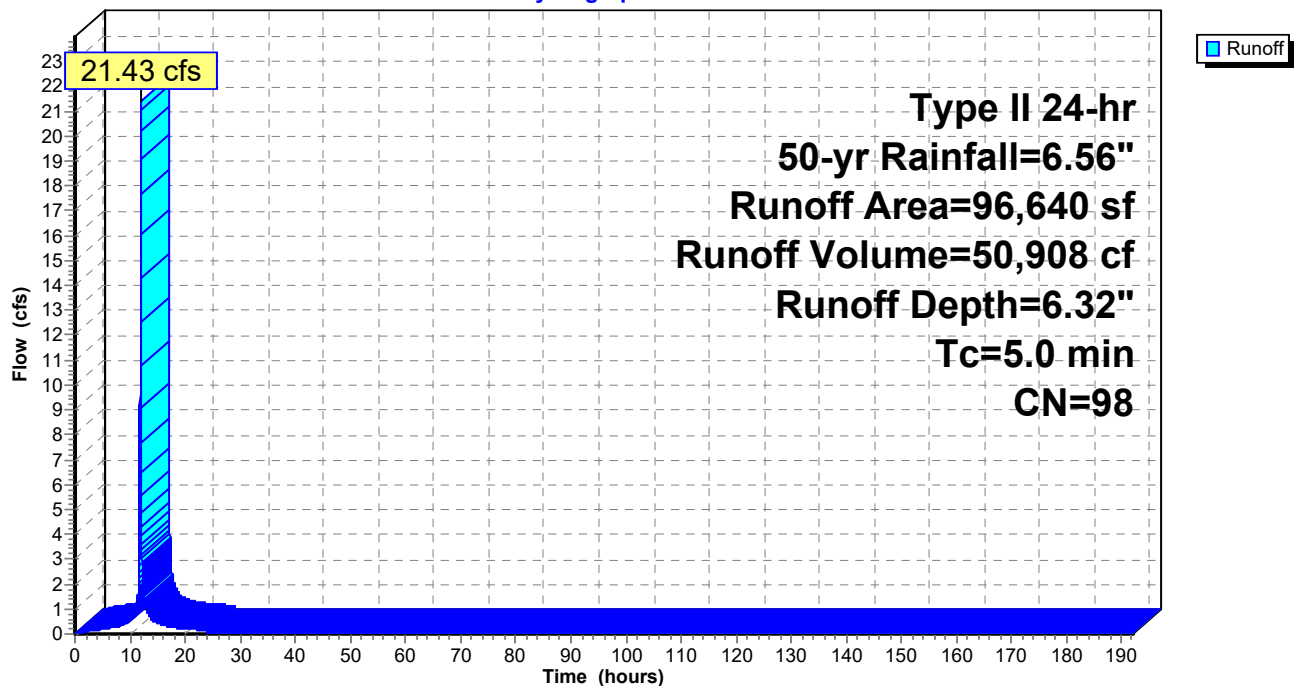
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 61.54 cfs @ 11.96 hrs, Volume= 127,023 cf, Depth= 2.92"

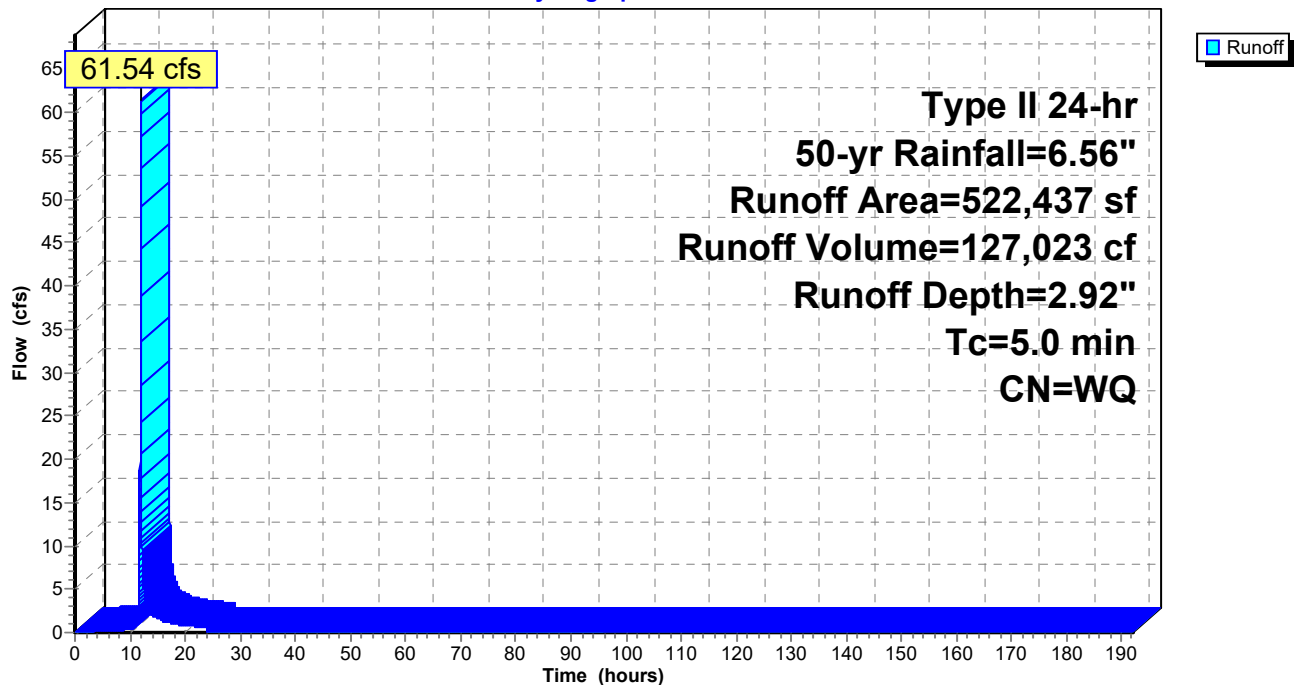
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 12.12 cfs @ 11.97 hrs, Volume= 23,675 cf, Depth= 2.39"

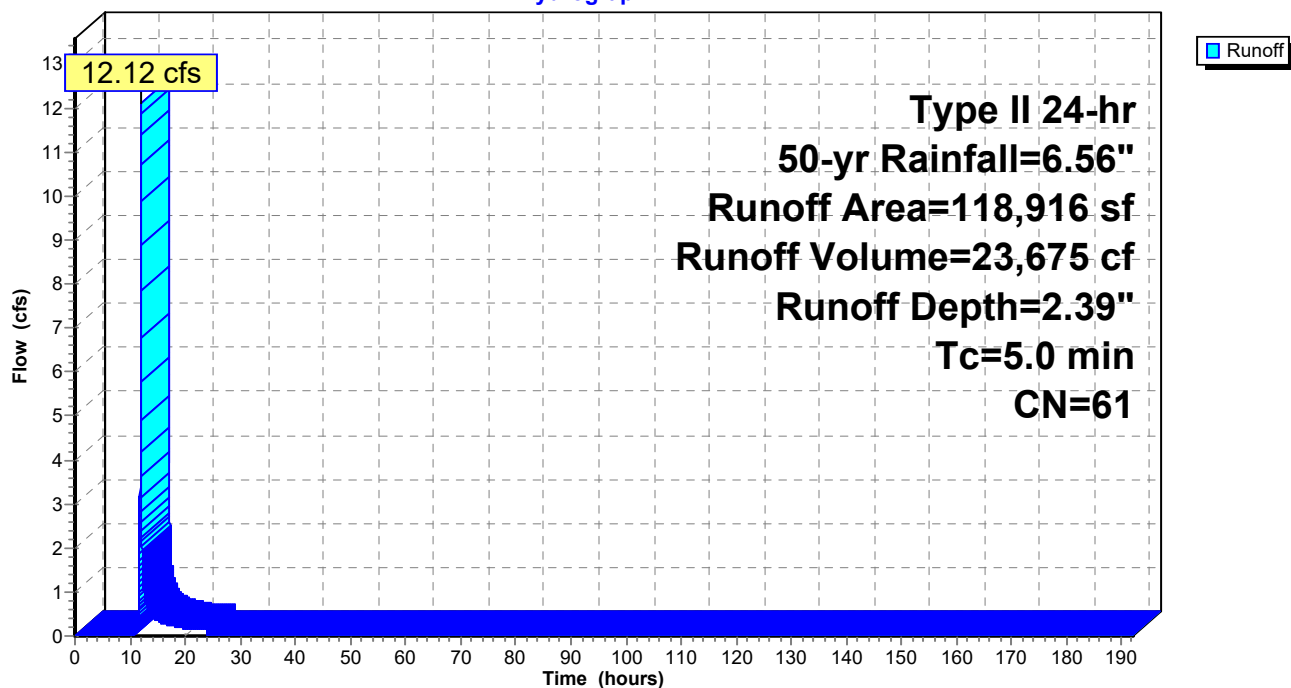
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 68.09 cfs @ 11.96 hrs, Volume= 159,999 cf, Depth= 5.80"

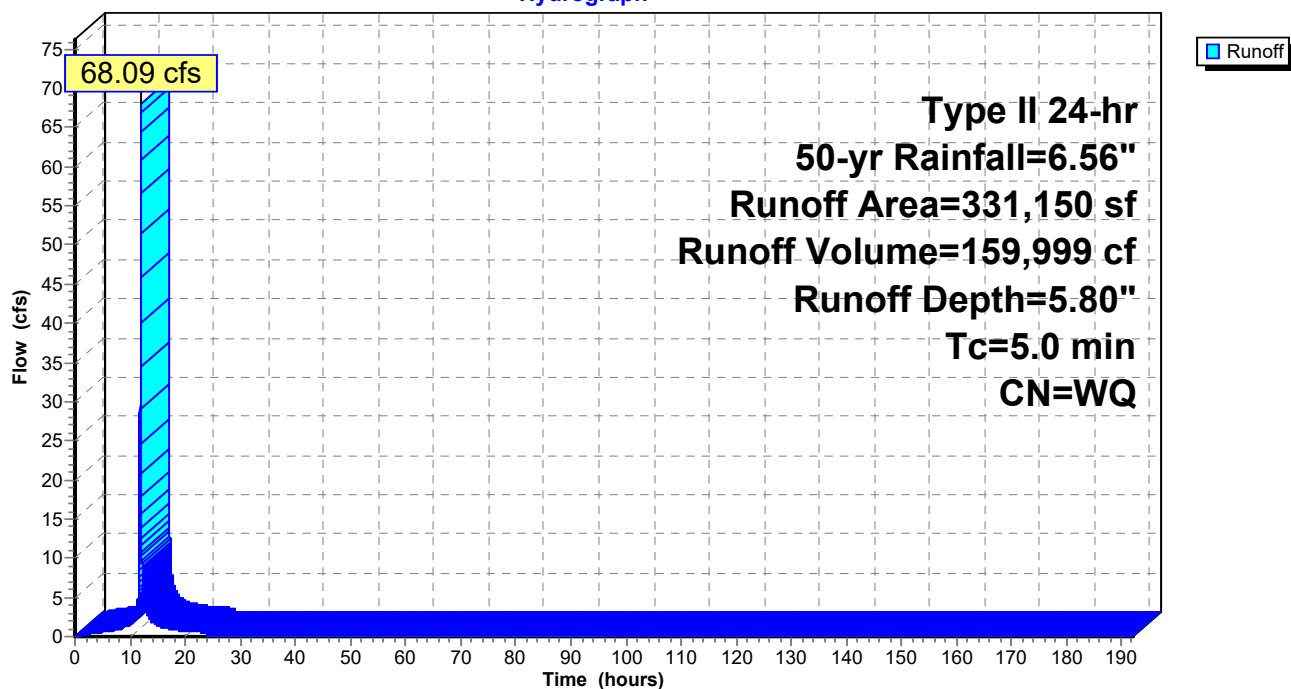
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 65.96 cfs @ 11.96 hrs, Volume= 151,139 cf, Depth= 5.40"

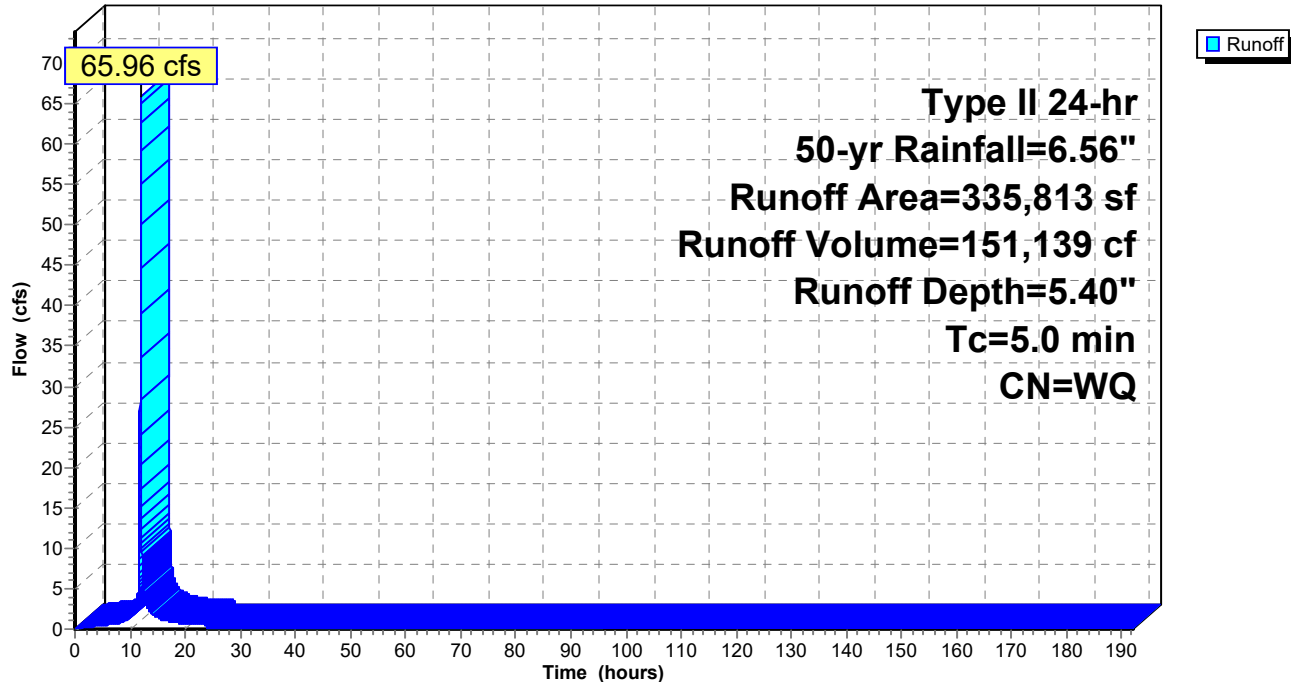
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

Area (sf)	CN	Description
57,394	61	>75% Grass cover, Good, HSG B
* 188,667	98	Building
* 19,774	98	Impervious
* 13,923	98	Generators
* 56,055	85	Gravel
335,813		Weighted Average
113,449	73	33.78% Pervious Area
222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 99.51 cfs @ 11.96 hrs, Volume= 229,986 cf, Depth= 5.57"

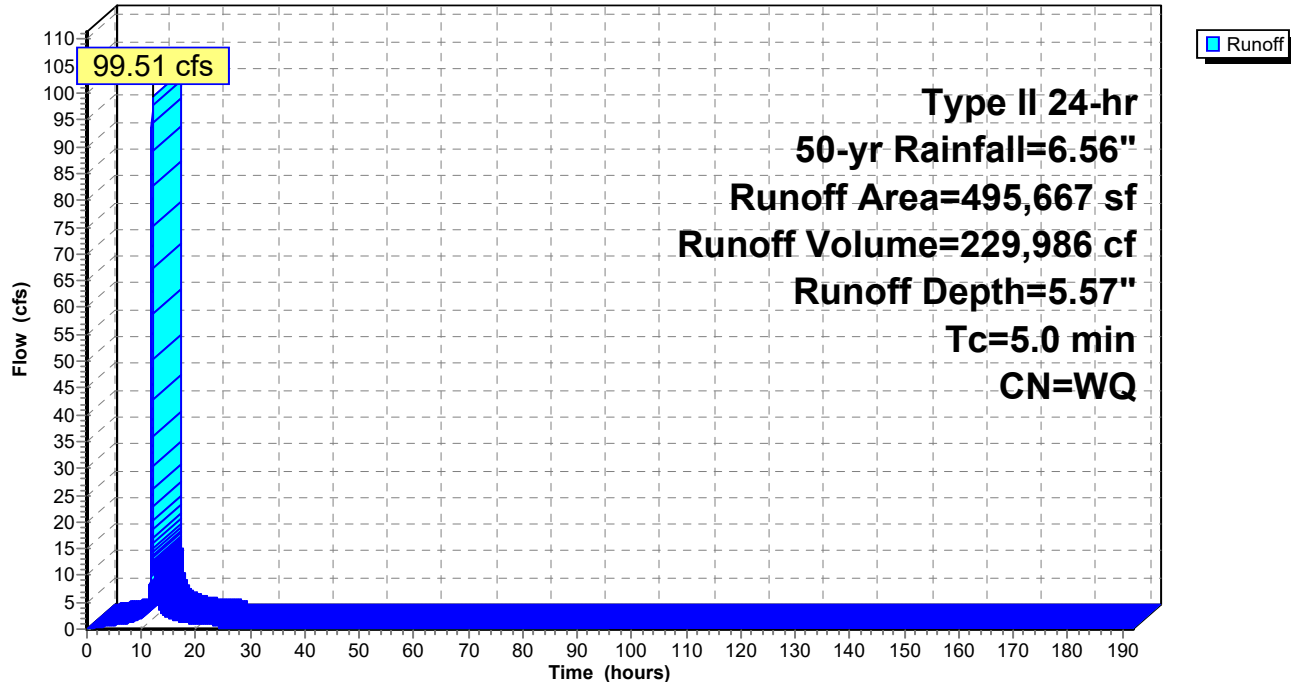
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 85.59 cfs @ 11.96 hrs, Volume= 192,708 cf, Depth= 5.09"

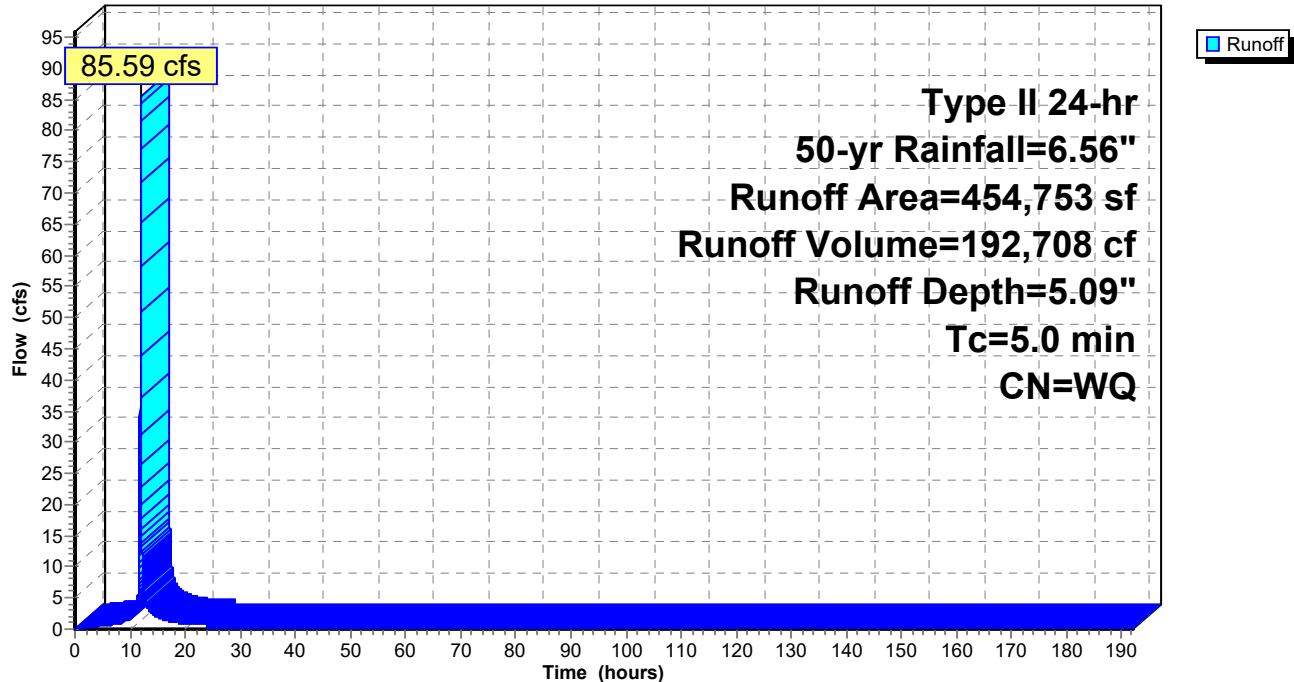
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 37.15 cfs @ 11.96 hrs, Volume= 78,172 cf, Depth= 3.75"

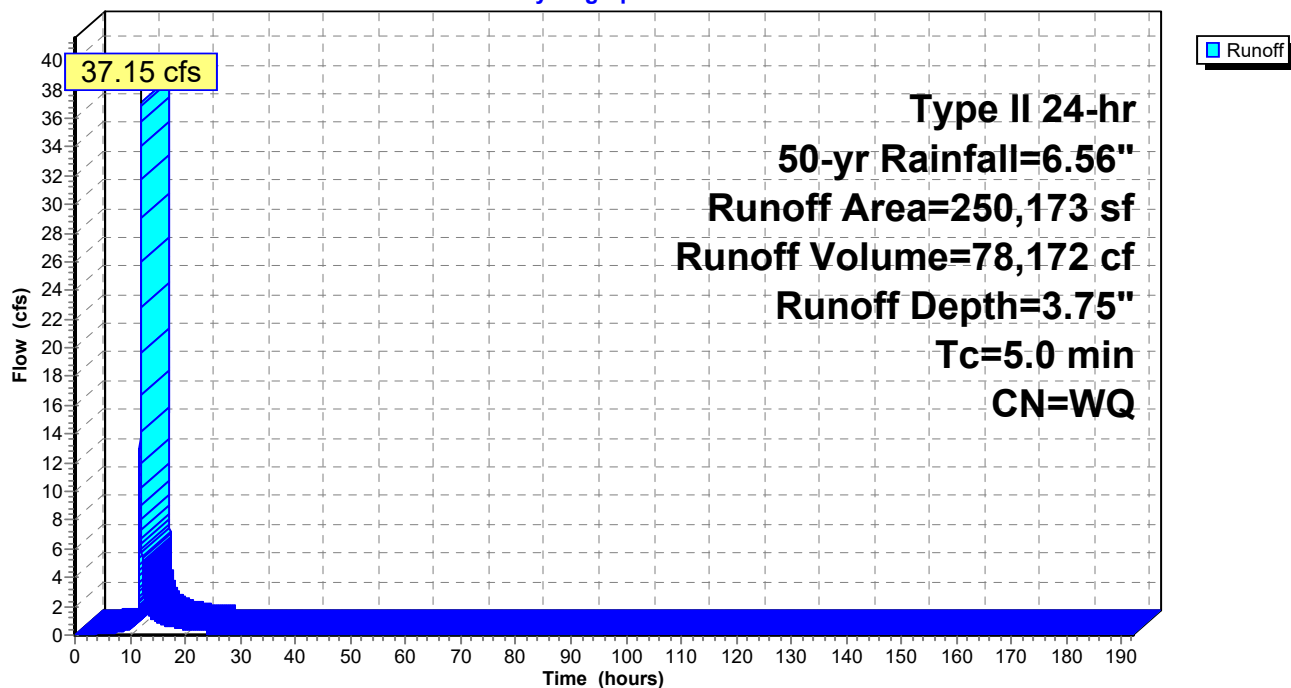
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Hydrograph



Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 4.36" for 50-yr event
 Inflow = 315.11 cfs @ 11.99 hrs, Volume= 1,027,539 cf
 Outflow = 89.40 cfs @ 12.38 hrs, Volume= 1,020,614 cf, Atten= 72%, Lag= 23.2 min
 Primary = 89.40 cfs @ 12.38 hrs, Volume= 1,020,614 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 359.09' @ 12.38 hrs Surf.Area= 90,025 sf Storage= 326,133 cf

Plug-Flow detention time= 223.4 min calculated for 1,020,614 cf (99% of inflow)
 Center-of-Mass det. time= 158.6 min (1,750.2 - 1,591.6)

Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

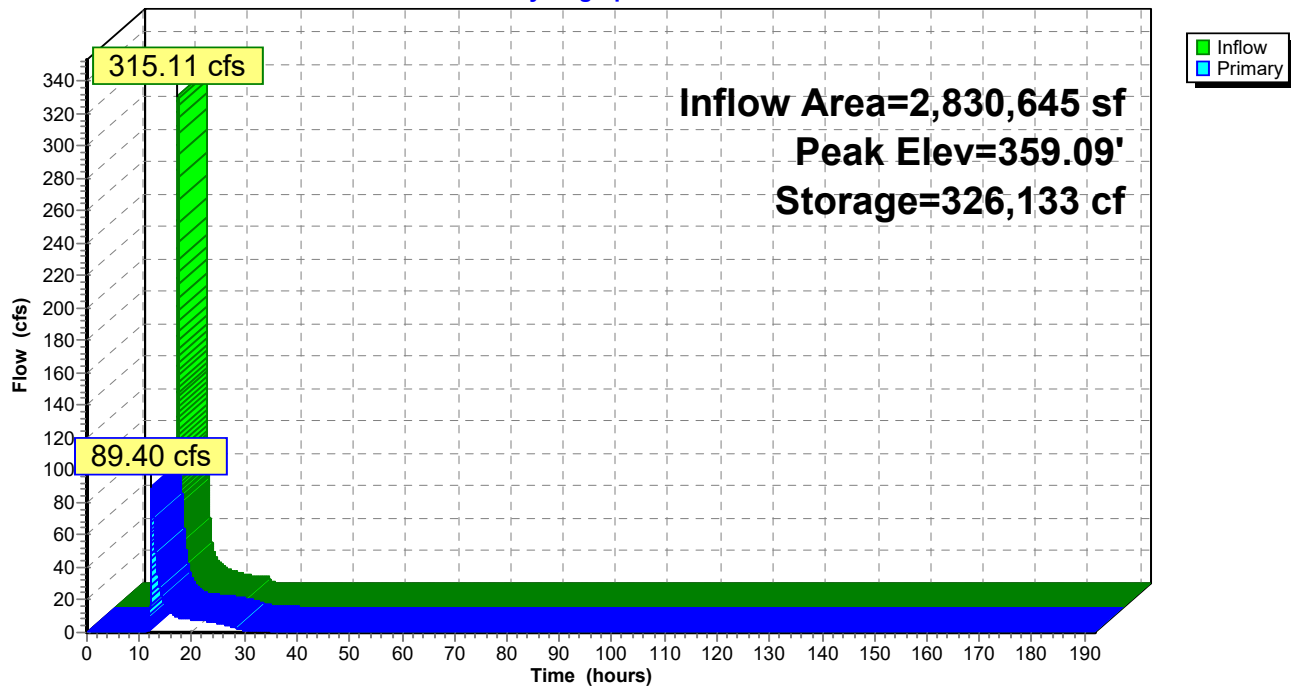
Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=89.40 cfs @ 12.38 hrs HW=359.09' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 89.40 cfs of 271.85 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 12.54 cfs @ 9.39 fps)
 3=19"Wx30"H Weir (Orifice Controls 76.86 cfs @ 4.64 fps)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

Hydrograph



2025-1201 SCS*Type II 24-hr 50-yr Rainfall=6.56"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

2025-1201 SCS

Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 5.80" for 50-yr event
 Inflow = 68.09 cfs @ 11.96 hrs, Volume= 159,999 cf
 Outflow = 52.75 cfs @ 12.01 hrs, Volume= 158,074 cf, Atten= 23%, Lag= 3.1 min
 Primary = 40.32 cfs @ 12.01 hrs, Volume= 153,845 cf
 Secondary = 12.43 cfs @ 12.01 hrs, Volume= 4,228 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 362.24' @ 12.01 hrs Surf.Area= 39,200 sf Storage= 56,443 cf

Plug-Flow detention time= 1,008.5 min calculated for 158,065 cf (99% of inflow)
 Center-of-Mass det. time= 1,000.8 min (1,745.7 - 744.9)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=40.30 cfs @ 12.01 hrs HW=362.24' TW=357.55' (Dynamic Tailwater)

1=Outflow Pipe (Passes 40.30 cfs of 73.71 cfs potential flow)

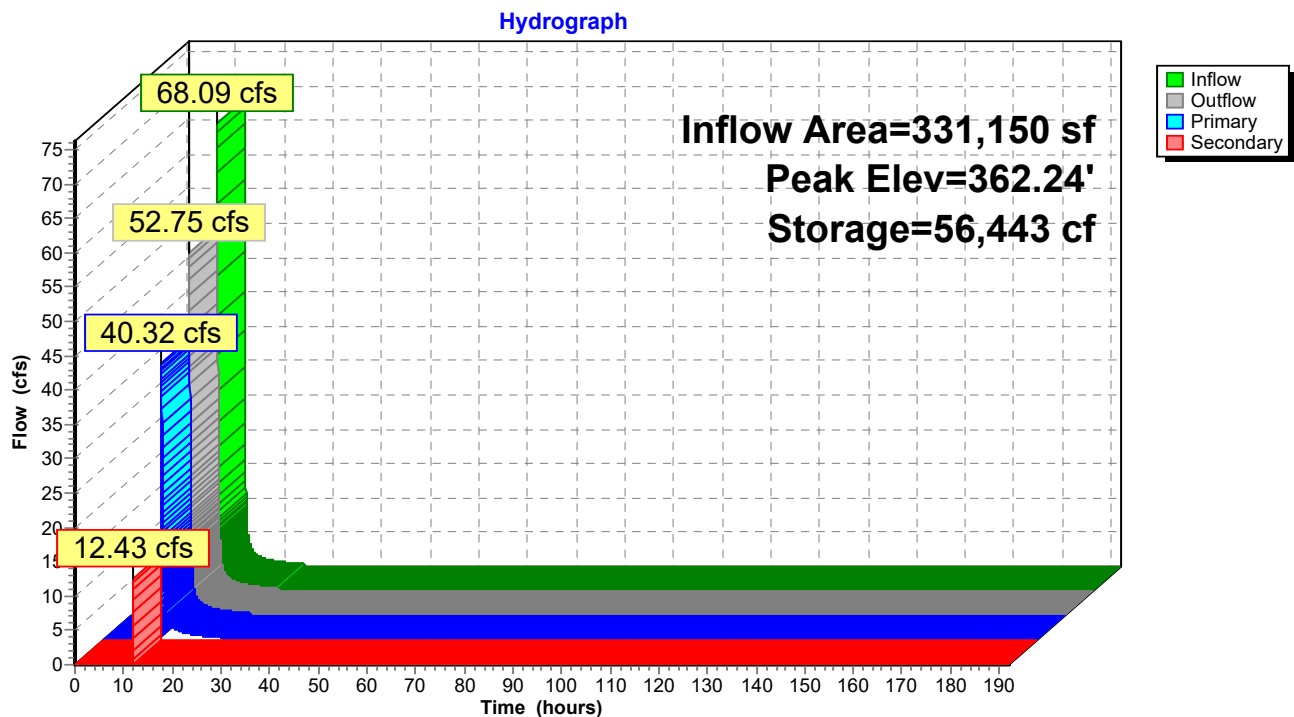
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.43 fps)

3=Type M Overflow (Orifice Controls 40.23 cfs @ 5.36 fps)

Secondary OutFlow Max=12.37 cfs @ 12.01 hrs HW=362.24' TW=357.55' (Dynamic Tailwater)

4=Emergency Spillway (Weir Controls 12.37 cfs @ 1.28 fps)

Pond SCM-2: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 50-yr Rainfall=6.56"*

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 5.40" for 50-yr event
 Inflow = 65.96 cfs @ 11.96 hrs, Volume= 151,139 cf
 Outflow = 43.20 cfs @ 12.02 hrs, Volume= 143,549 cf, Atten= 35%, Lag= 3.9 min
 Primary = 38.43 cfs @ 12.02 hrs, Volume= 142,360 cf
 Secondary = 4.77 cfs @ 12.02 hrs, Volume= 1,189 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 362.13' @ 12.02 hrs Surf.Area= 46,633 sf Storage= 66,138 cf

Plug-Flow detention time= 1,349.1 min calculated for 143,549 cf (95% of inflow)
 Center-of-Mass det. time= 1,318.6 min (2,074.0 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

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Type II 24-hr 50-yr Rainfall=6.56"

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Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=38.41 cfs @ 12.02 hrs HW=362.13' TW=357.74' (Dynamic Tailwater)

1=Outflow Pipe (Passes 38.41 cfs of 71.30 cfs potential flow)

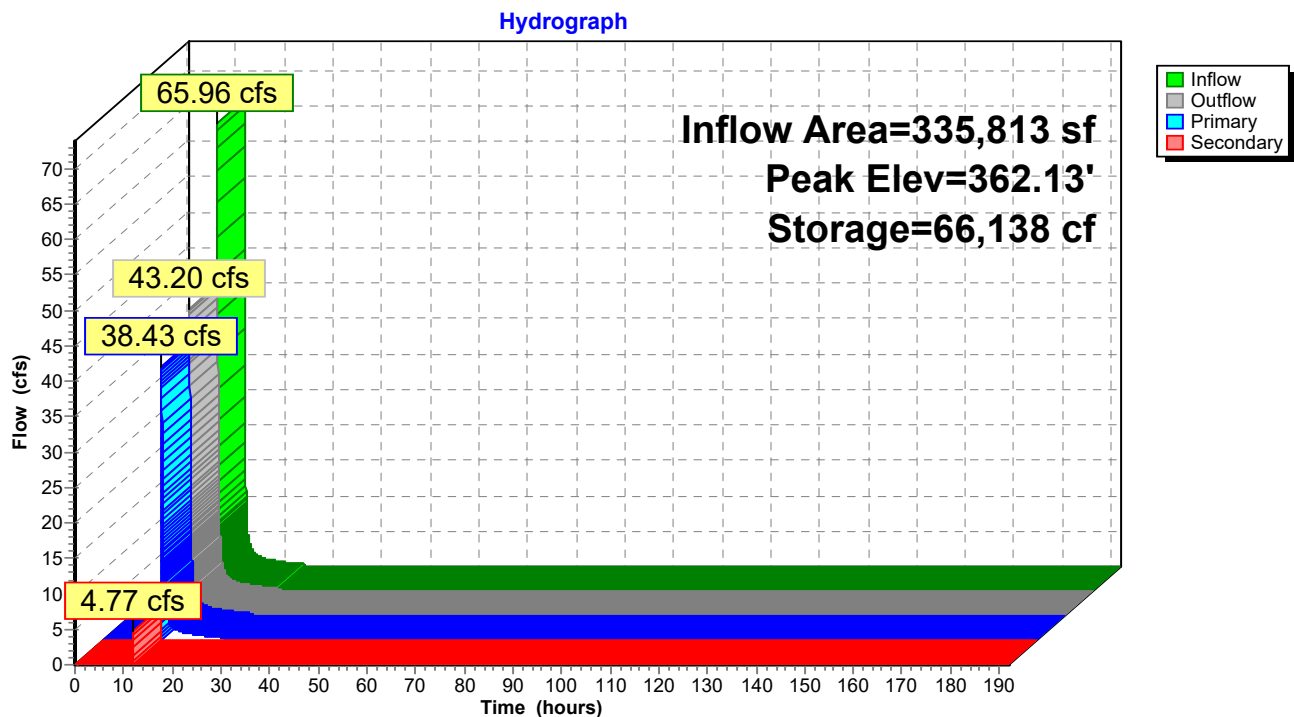
2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 10.09 fps)

3=Type M Overflow (Orifice Controls 38.34 cfs @ 5.11 fps)

Secondary OutFlow Max=4.73 cfs @ 12.02 hrs HW=362.13' TW=357.74' (Dynamic Tailwater)

4=Emergency Spillway (Weir Controls 4.73 cfs @ 0.93 fps)

Pond SCM-3: MRC RAIN GARDEN



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Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

2025-1201 SCS

Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 5.57" for 50-yr event
 Inflow = 99.51 cfs @ 11.96 hrs, Volume= 229,986 cf
 Outflow = 46.57 cfs @ 12.05 hrs, Volume= 216,018 cf, Atten= 53%, Lag= 5.3 min
 Primary = 46.57 cfs @ 12.05 hrs, Volume= 216,018 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.66' @ 12.05 hrs Surf.Area= 60,865 sf Storage= 98,461 cf

Plug-Flow detention time= 973.5 min calculated for 216,006 cf (94% of inflow)
 Center-of-Mass det. time= 938.2 min (1,689.7 - 751.5)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

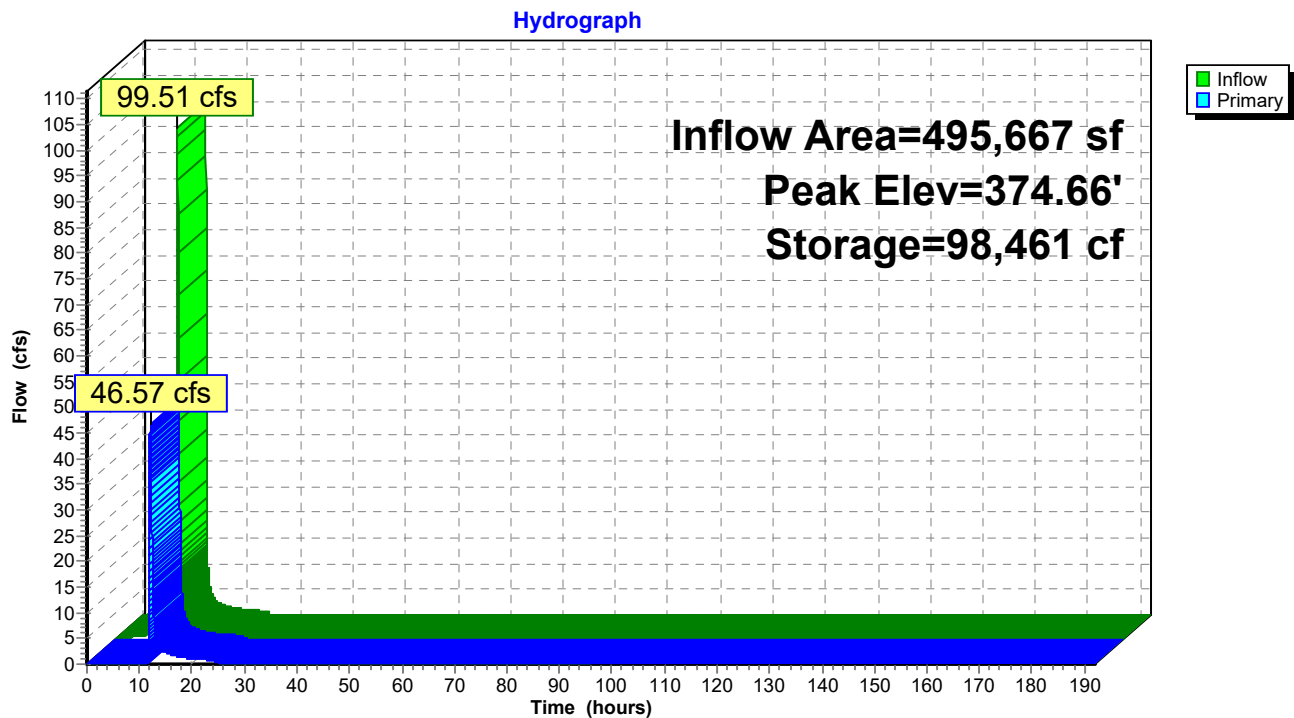
Primary OutFlow Max=46.56 cfs @ 12.05 hrs HW=374.66' TW=357.98' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 46.56 cfs of 71.85 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.08 cfs @ 11.41 fps)

3=Type M Overflow (Orifice Controls 46.48 cfs @ 6.20 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 50-yr Rainfall=6.56"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

2025-1201 SCS

Type II 24-hr 50-yr Rainfall=6.56"

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Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 4.53" for 50-yr event
 Inflow = 97.63 cfs @ 11.96 hrs, Volume= 216,383 cf
 Outflow = 44.36 cfs @ 12.05 hrs, Volume= 202,409 cf, Atten= 55%, Lag= 5.4 min
 Primary = 44.36 cfs @ 12.05 hrs, Volume= 202,409 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.50' @ 12.05 hrs Surf.Area= 60,264 sf Storage= 93,247 cf

Plug-Flow detention time= 1,025.2 min calculated for 202,398 cf (94% of inflow)
 Center-of-Mass det. time= 988.3 min (1,761.0 - 772.8)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

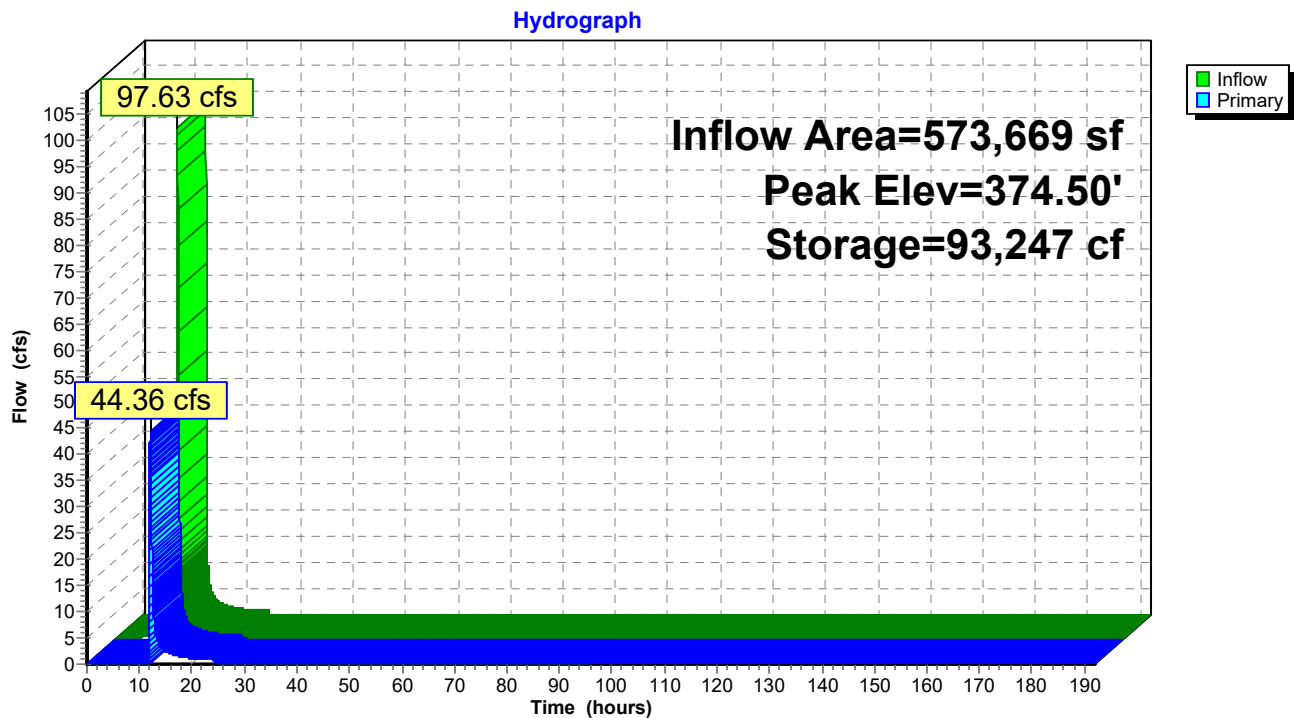
Primary OutFlow Max=44.35 cfs @ 12.05 hrs HW=374.50' TW=358.02' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 44.35 cfs of 70.60 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.07 cfs @ 11.25 fps)

3=Type M Overflow (Orifice Controls 44.27 cfs @ 5.90 fps)

Pond SCM-5: MRC RAIN GARDEN



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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 3.19" for 50-yr event
 Inflow = 98.67 cfs @ 11.96 hrs, Volume= 205,194 cf
 Outflow = 93.23 cfs @ 11.99 hrs, Volume= 204,247 cf, Atten= 6%, Lag= 1.4 min
 Primary = 14.57 cfs @ 11.99 hrs, Volume= 154,728 cf
 Secondary = 78.66 cfs @ 11.99 hrs, Volume= 49,519 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 369.70' @ 11.99 hrs Surf.Area= 27,823 sf Storage= 43,540 cf

Plug-Flow detention time= 460.9 min calculated for 204,236 cf (100% of inflow)
 Center-of-Mass det. time= 458.5 min (1,269.1 - 810.6)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 1' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=14.56 cfs @ 11.99 hrs HW=369.70' TW=357.27' (Dynamic Tailwater)

1=Outflow Pipe (Inlet Controls 14.56 cfs @ 11.87 fps)

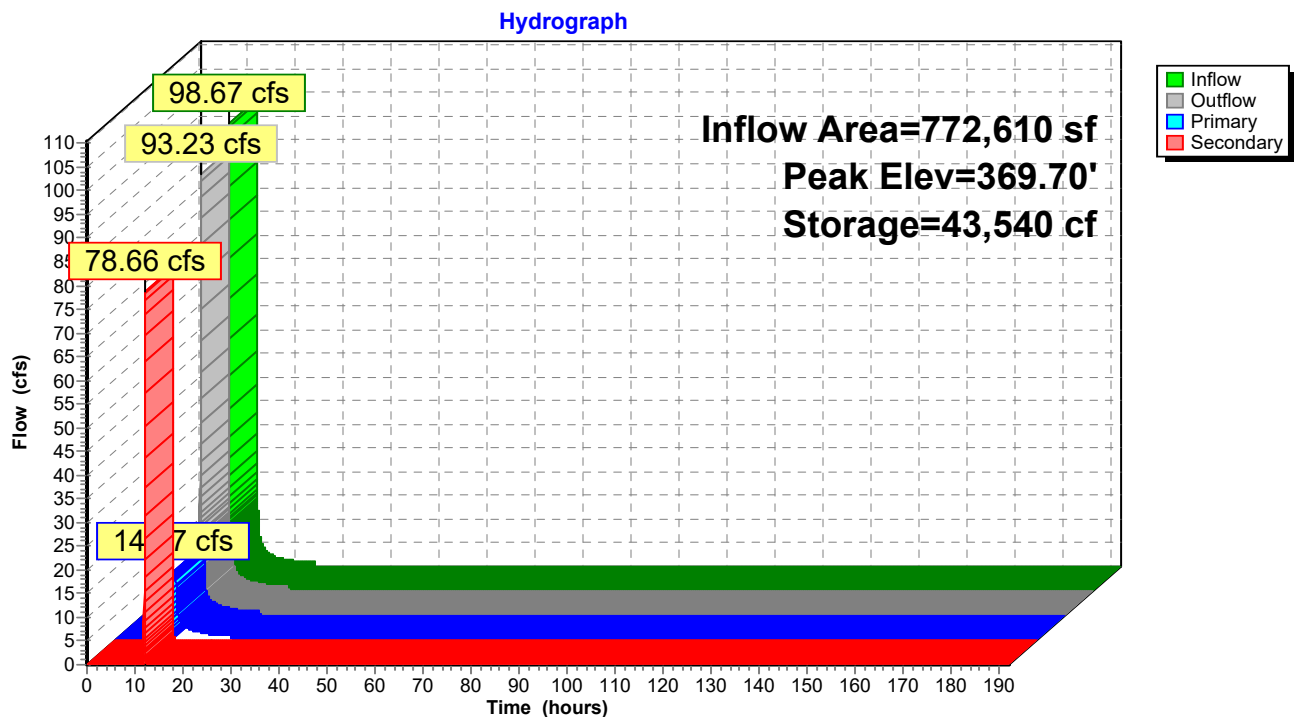
2=MRC Low Flow Orifice (Passes < 0.06 cfs potential flow)

3=Type M Overflow (Passes < 47.08 cfs potential flow)

Secondary OutFlow Max=78.46 cfs @ 11.99 hrs HW=369.70' TW=357.27' (Dynamic Tailwater)

4=Spillway (Weir Controls 78.46 cfs @ 2.24 fps)

Pond SCM-6: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

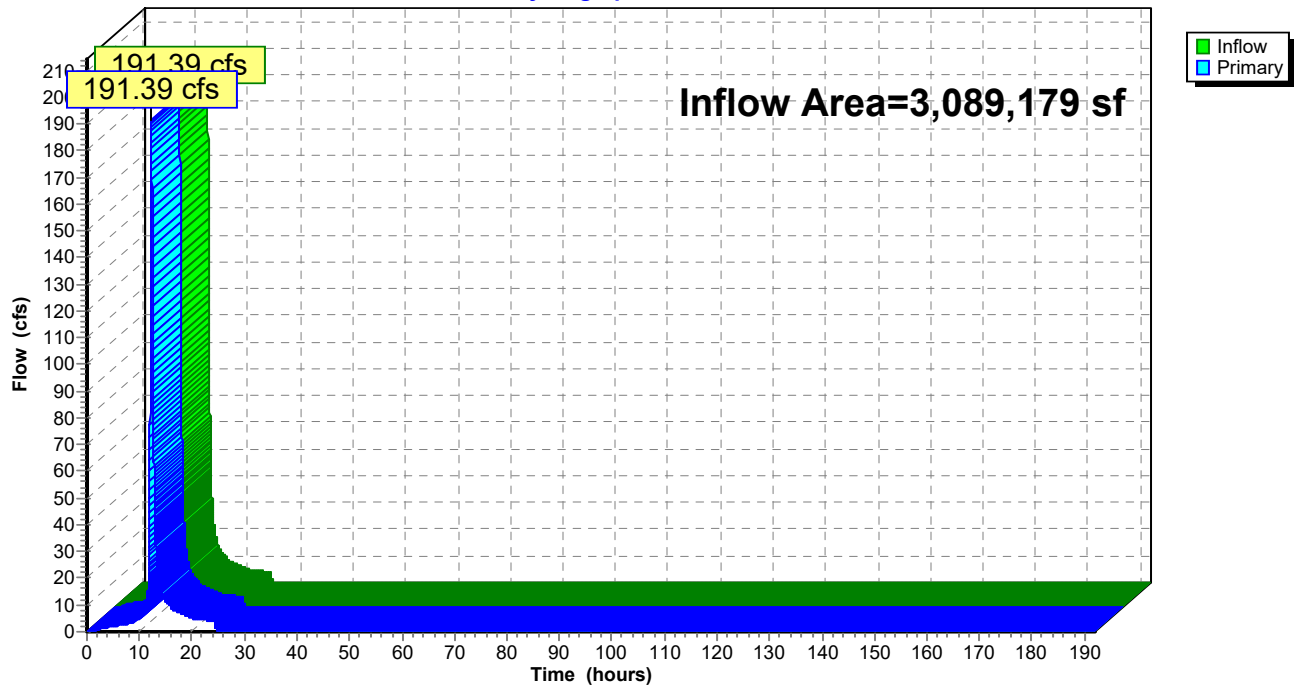
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 3.57" for 50-yr event
Inflow = 191.39 cfs @ 12.27 hrs, Volume= 918,193 cf
Primary = 191.39 cfs @ 12.27 hrs, Volume= 918,193 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

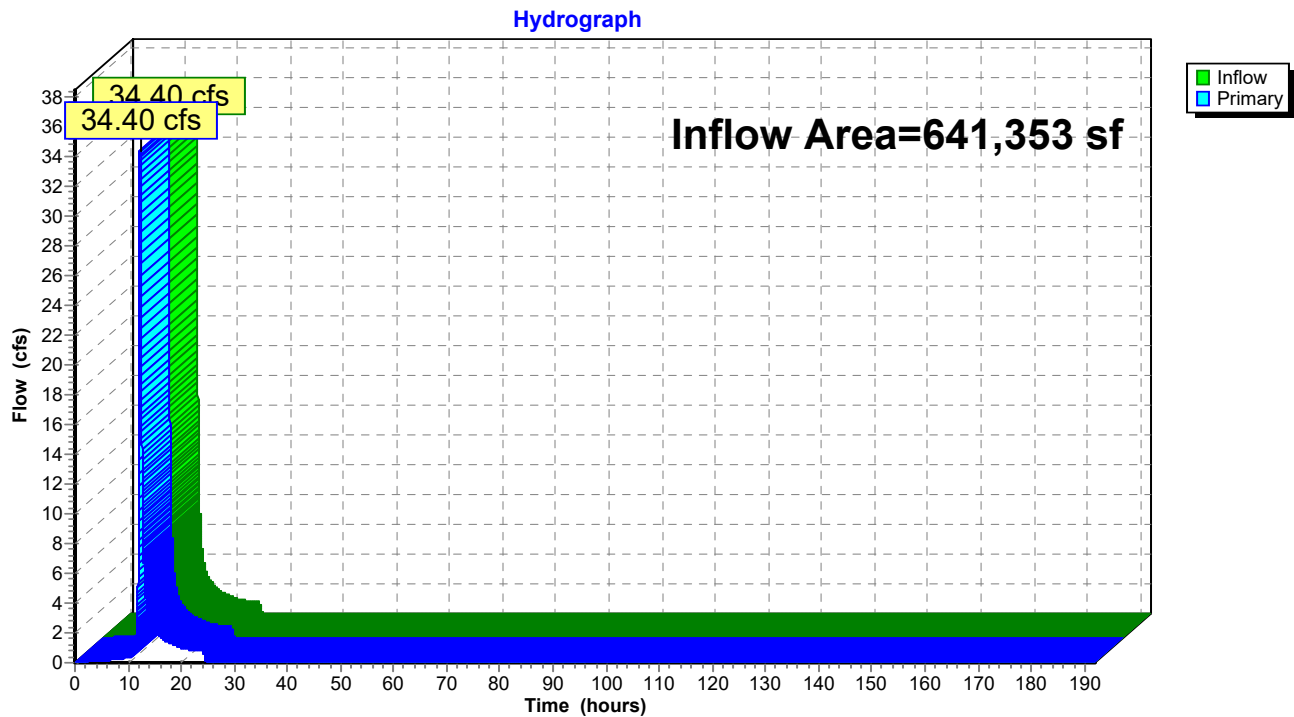
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 2.82" for 50-yr event
Inflow = 34.40 cfs @ 12.24 hrs, Volume= 150,698 cf
Primary = 34.40 cfs @ 12.24 hrs, Volume= 150,698 cf, Atten= 0%, Lag= 0.0 min

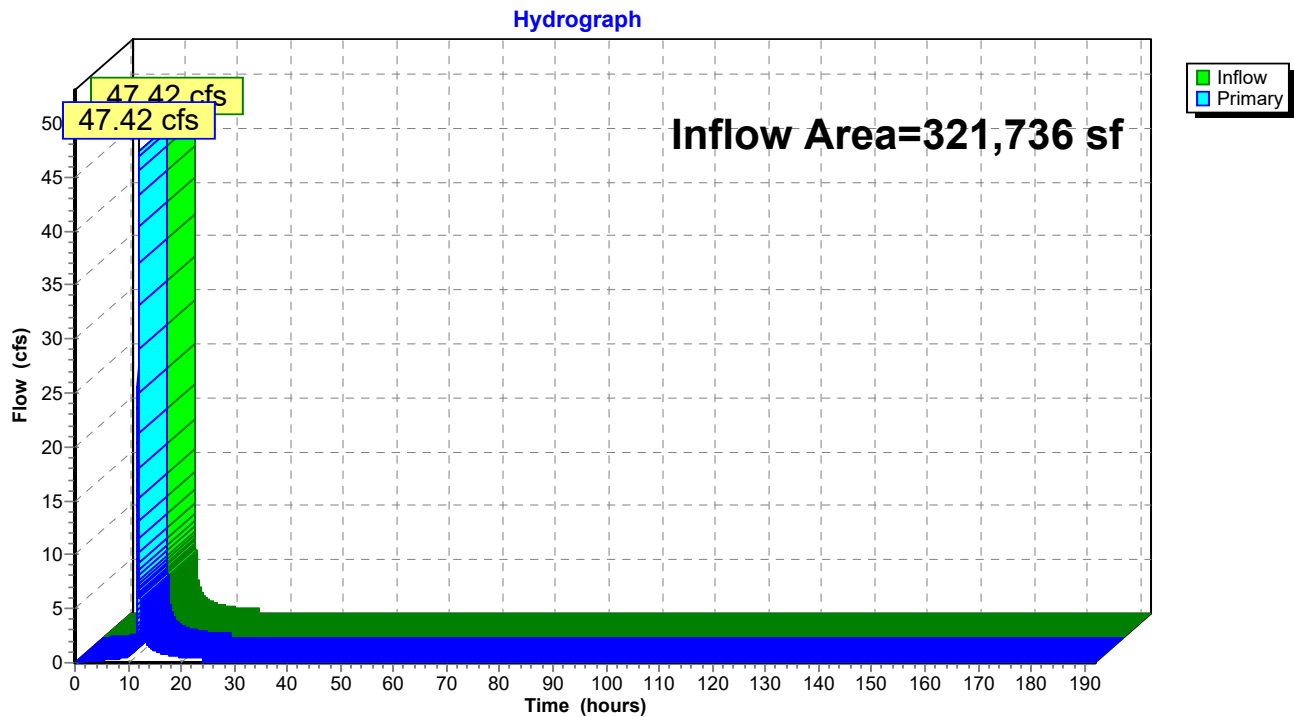
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 3.85" for 50-yr event
Inflow = 47.42 cfs @ 11.96 hrs, Volume= 103,243 cf
Primary = 47.42 cfs @ 11.96 hrs, Volume= 103,243 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

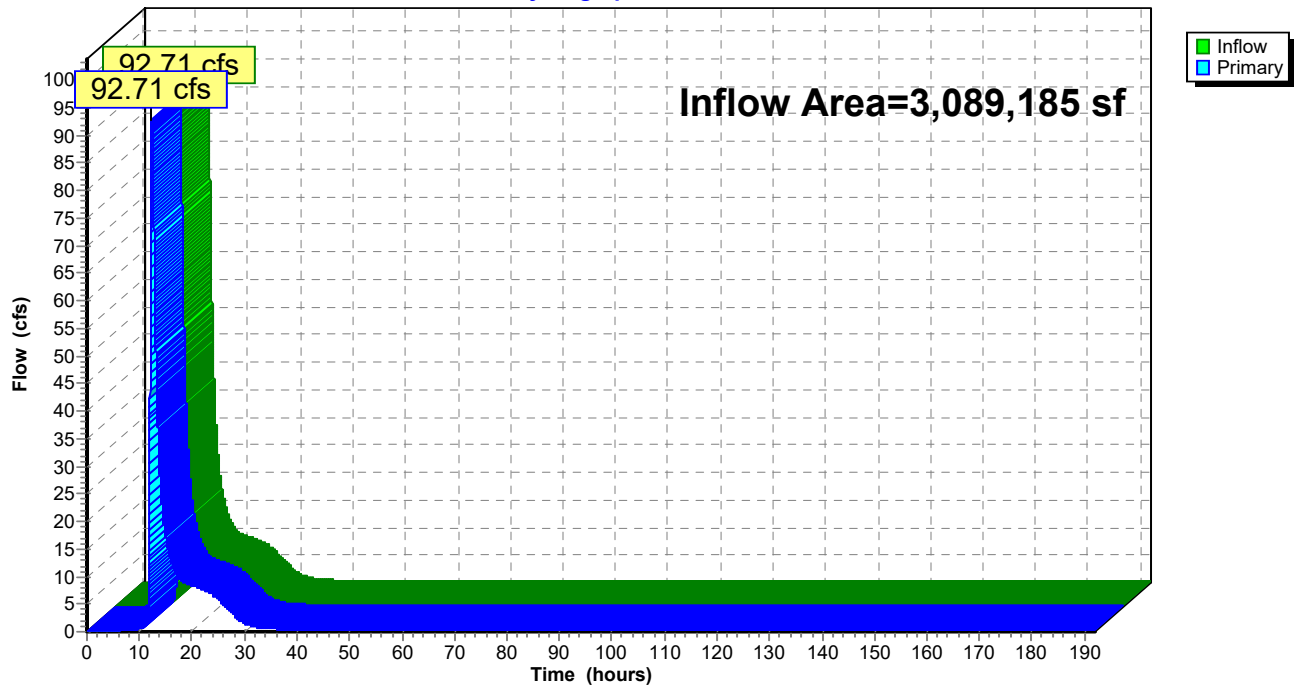
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 4.21" for 50-yr event
Inflow = 92.71 cfs @ 12.37 hrs, Volume= 1,084,047 cf
Primary = 92.71 cfs @ 12.37 hrs, Volume= 1,084,047 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 20.06 cfs @ 11.96 hrs, Volume= 39,598 cf, Depth= 3.16"

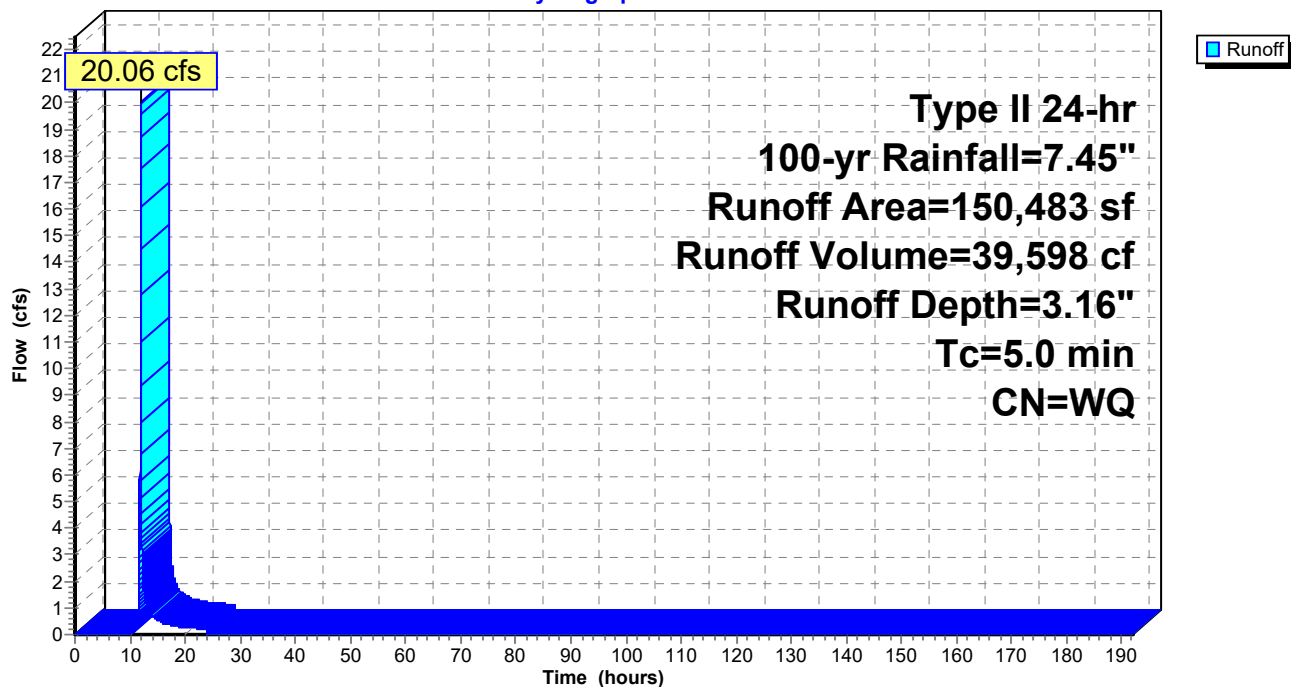
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 7.24 cfs @ 11.96 hrs, Volume= 17,224 cf, Depth= 7.07"

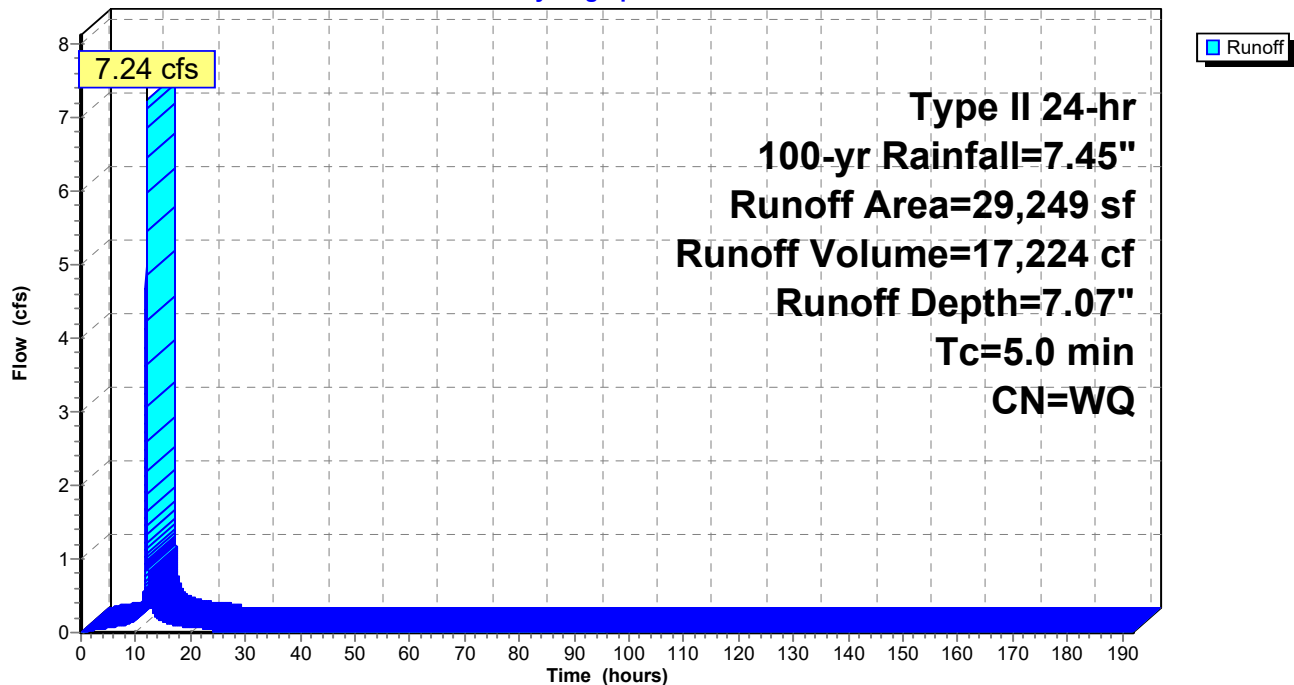
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 9.55 cfs @ 11.96 hrs, Volume= 18,697 cf, Depth= 3.07"

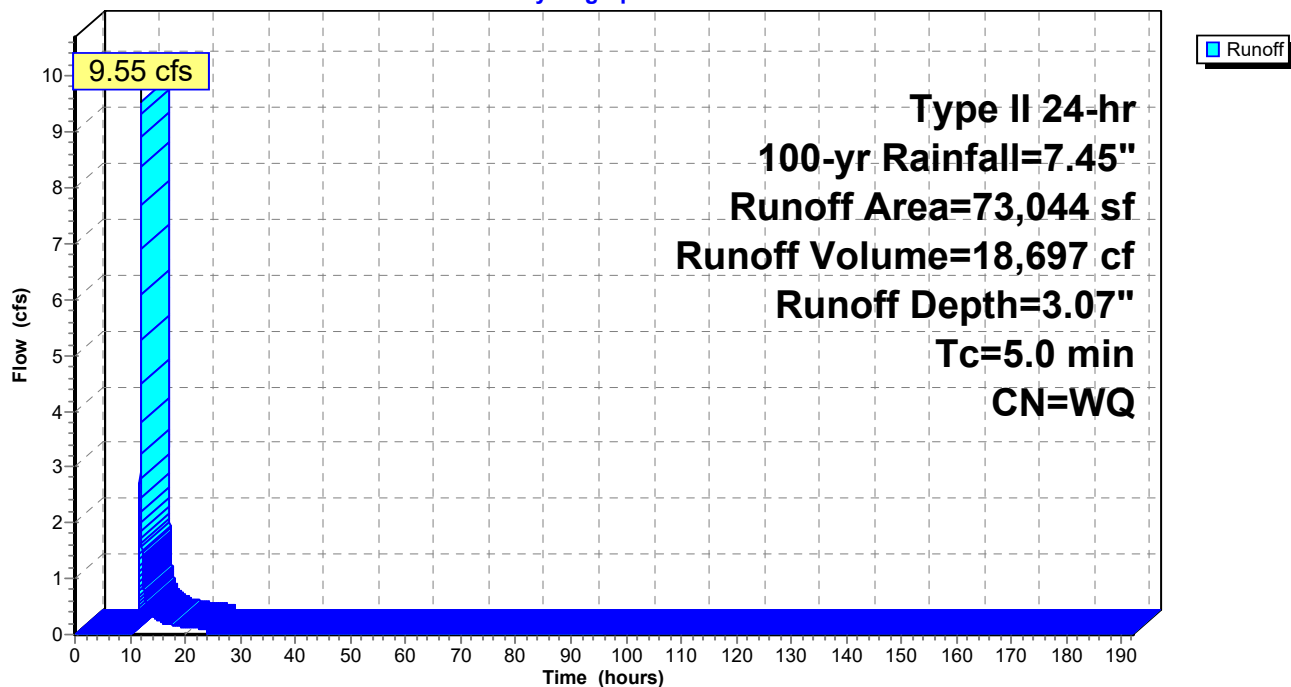
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	707	98	Impervious
	72,337	61	>75% Grass cover, Good, HSG B
	73,044		Weighted Average
	72,337	61	99.03% Pervious Area
	707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Hydrograph



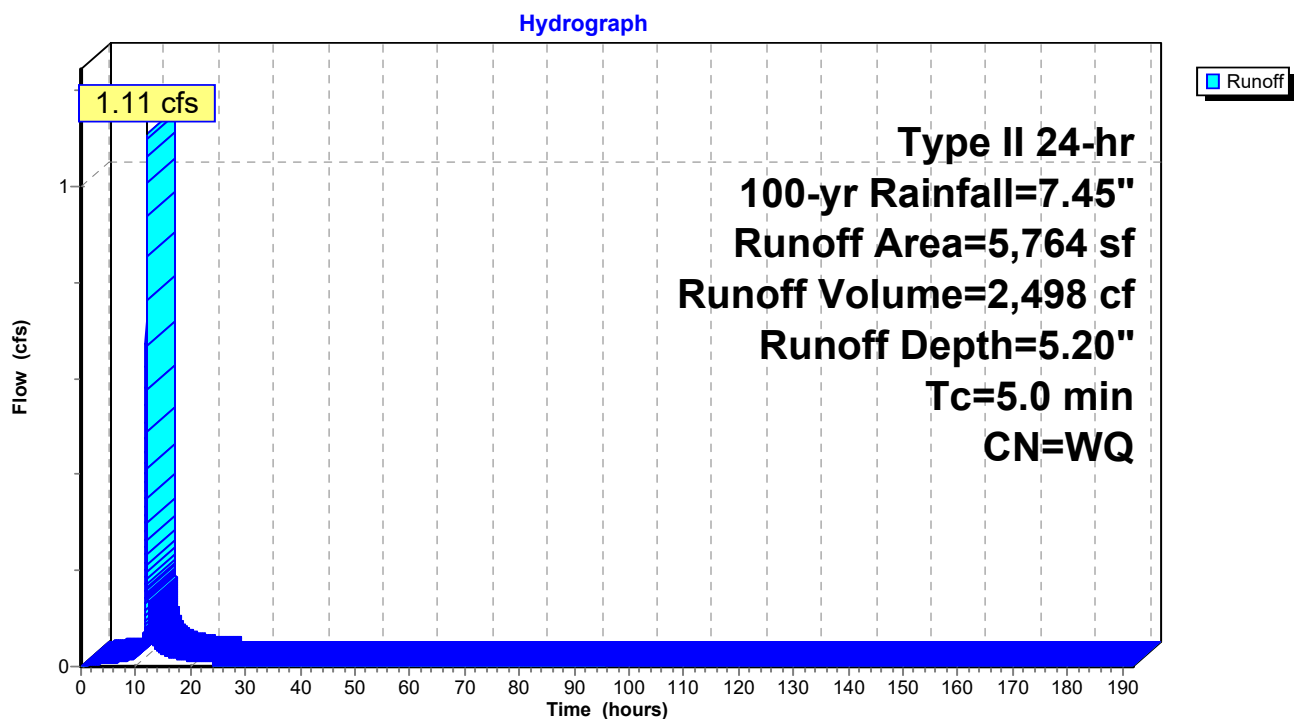
Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 1.11 cfs @ 11.96 hrs, Volume= 2,498 cf, Depth= 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 189.18 cfs @ 12.27 hrs, Volume= 913,583 cf, Depth= 4.48"

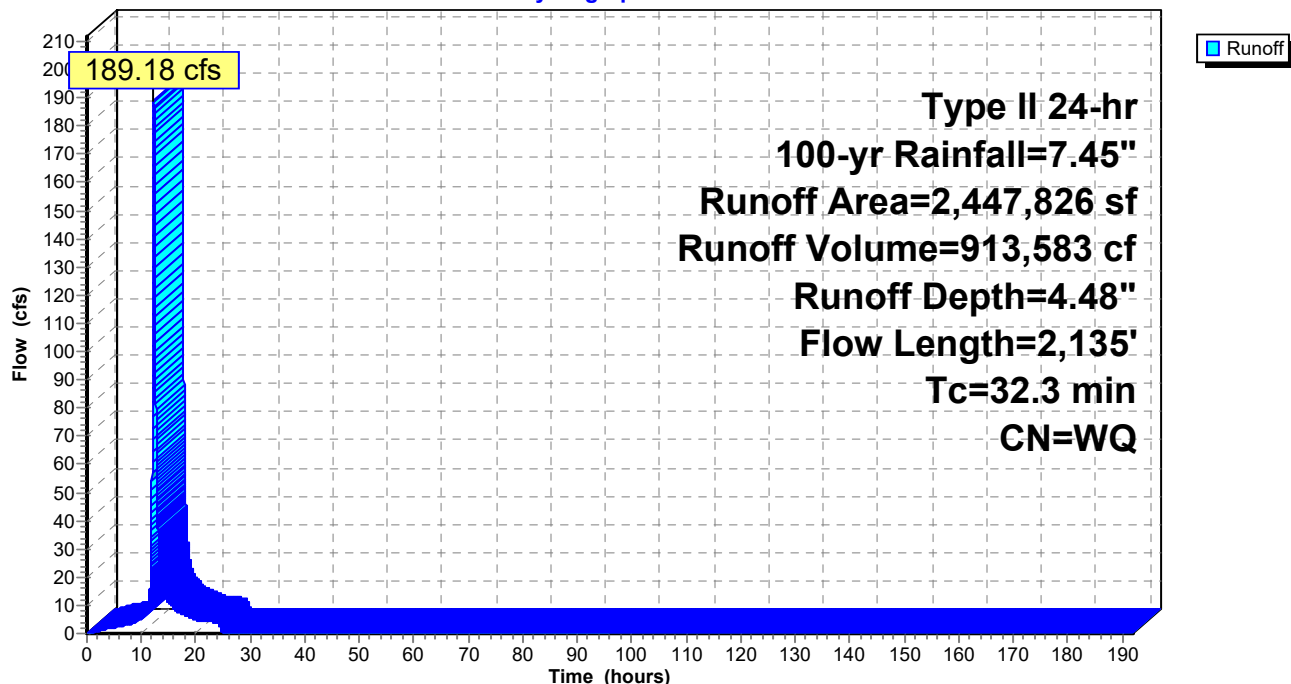
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment E2: PRE (OLOD)

Runoff = 6.85 cfs @ 12.28 hrs, Volume= 30,037 cf, Depth= 3.03"

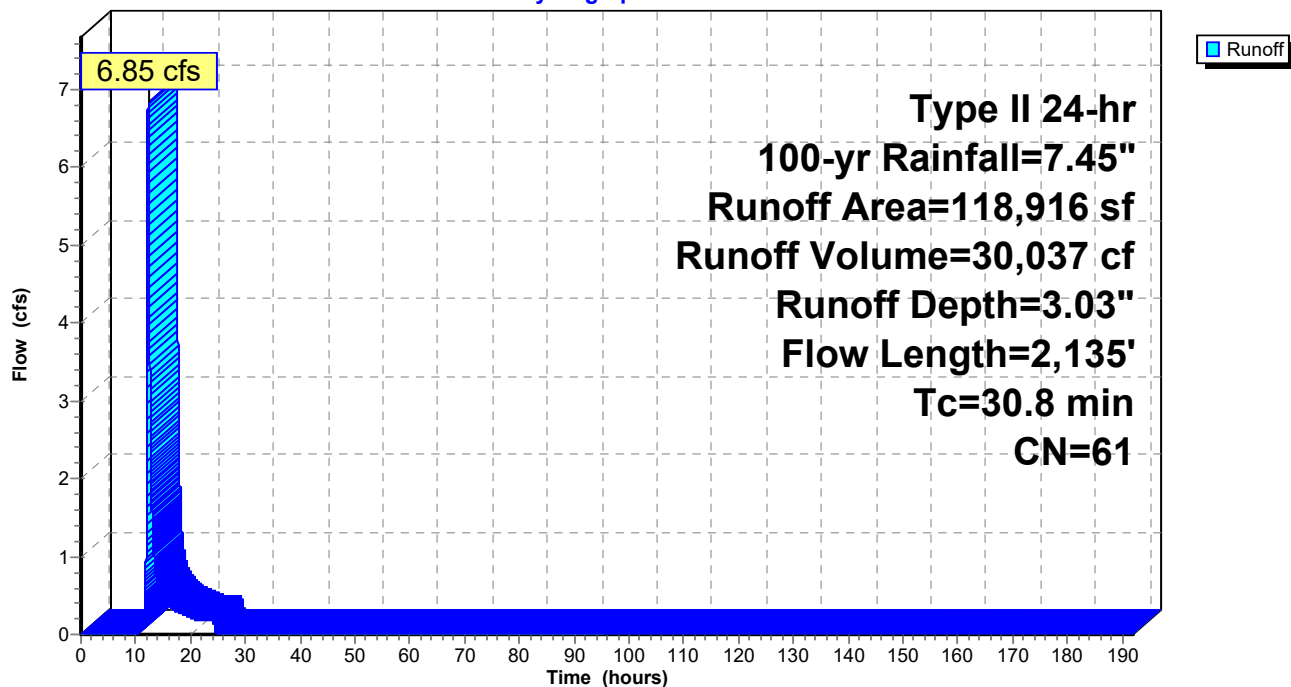
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 36.48 cfs @ 12.22 hrs, Volume= 156,420 cf, Depth= 3.59"

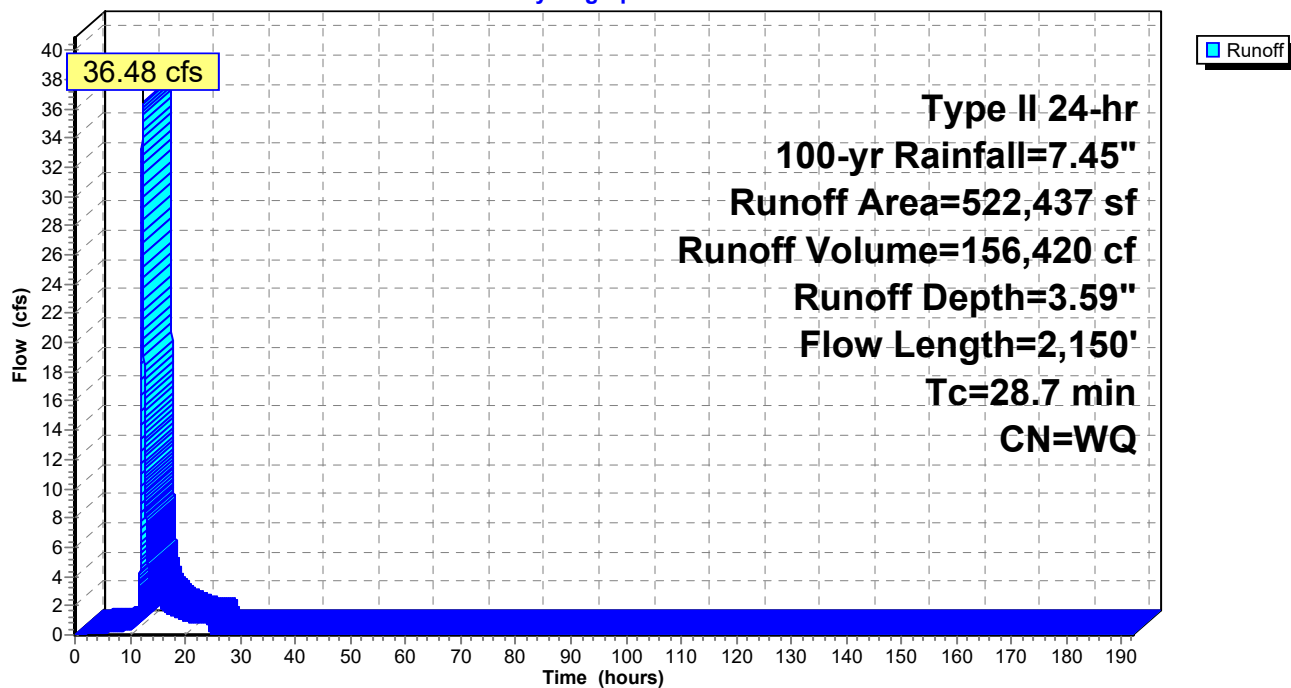
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



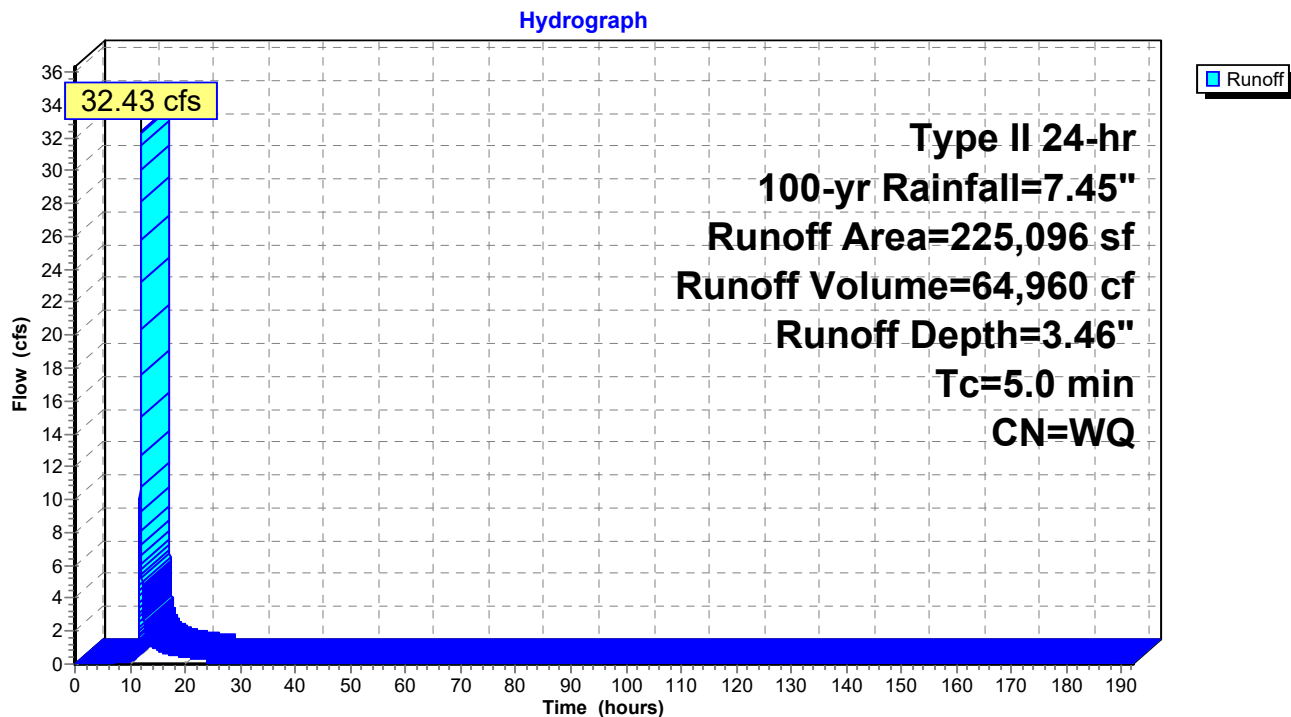
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 32.43 cfs @ 11.96 hrs, Volume= 64,960 cf, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 24.35 cfs @ 11.96 hrs, Volume= 58,069 cf, Depth= 7.21"

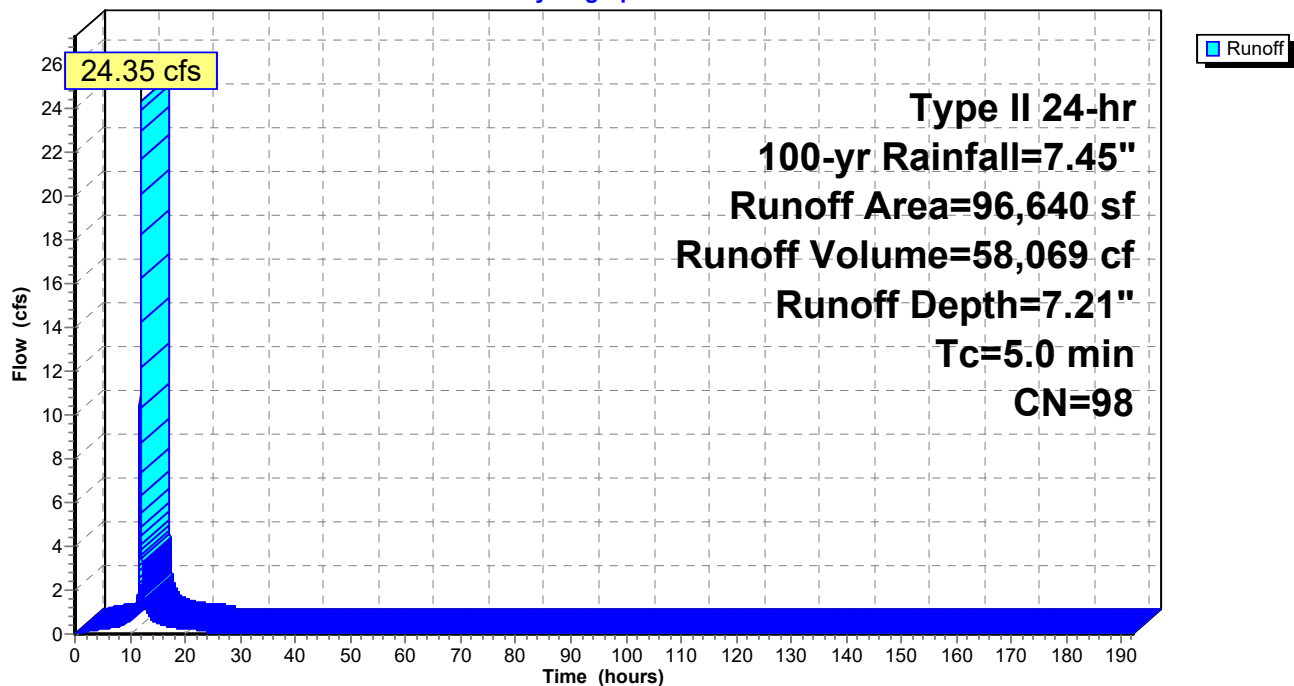
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 76.20 cfs @ 11.96 hrs, Volume= 156,420 cf, Depth= 3.59"

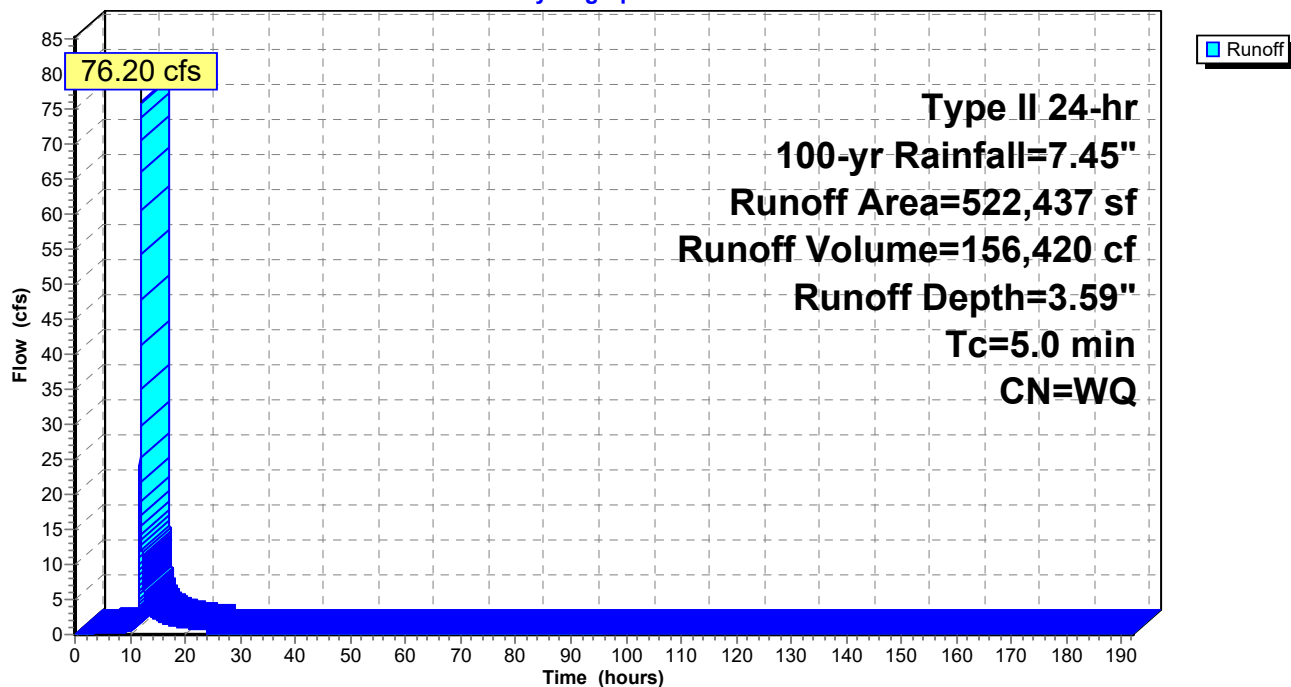
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

Runoff = 15.42 cfs @ 11.96 hrs, Volume= 30,037 cf, Depth= 3.03"

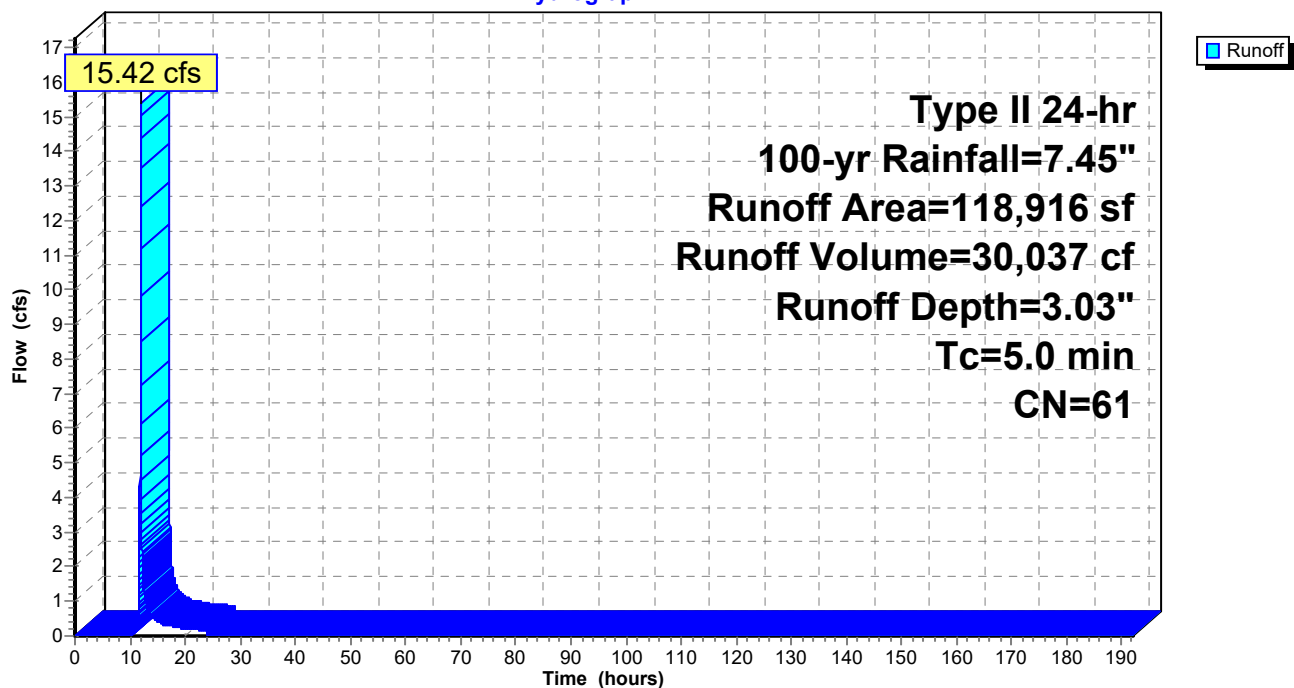
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 78.00 cfs @ 11.96 hrs, Volume= 183,632 cf, Depth= 6.65"

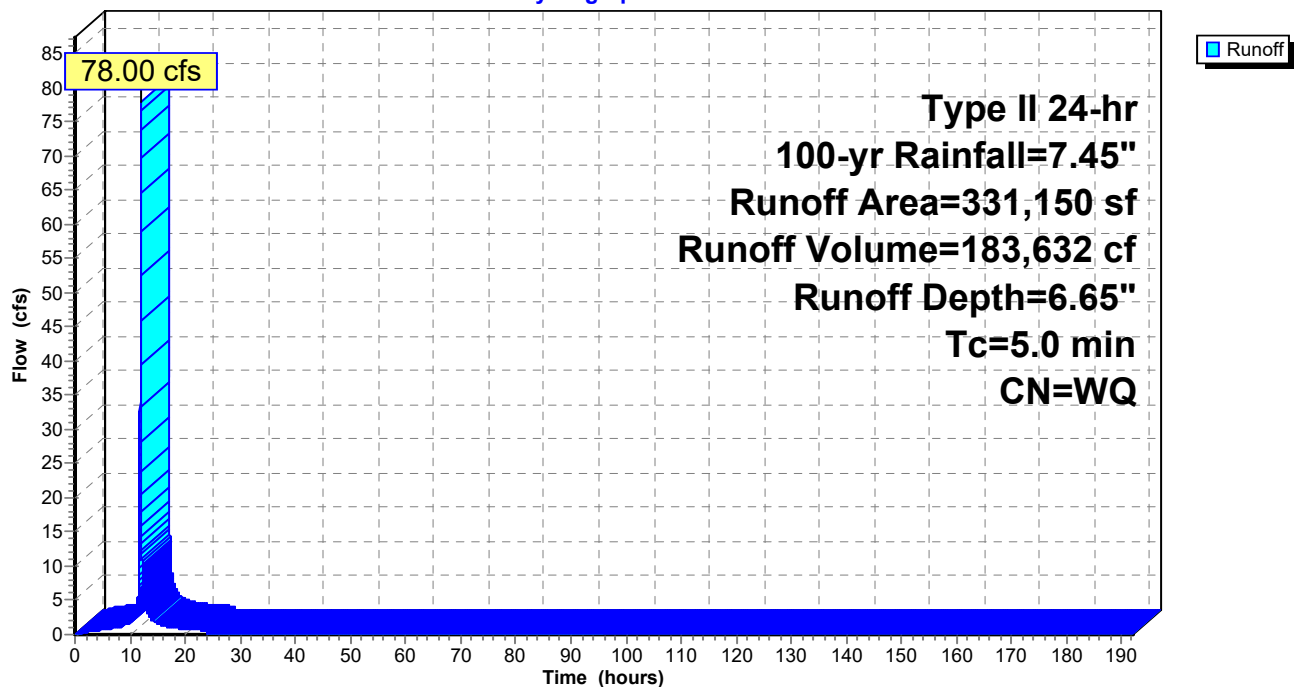
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 76.06 cfs @ 11.96 hrs, Volume= 174,662 cf, Depth= 6.24"

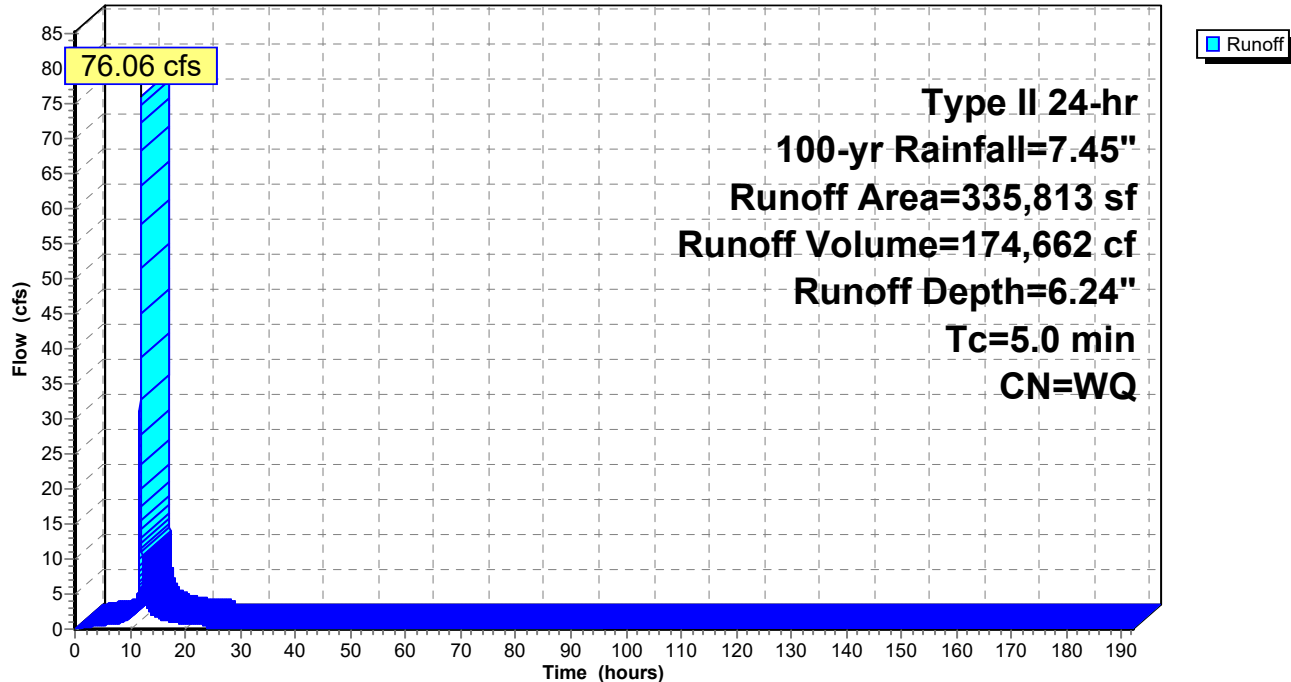
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
	57,394	61	>75% Grass cover, Good, HSG B
*	188,667	98	Building
*	19,774	98	Impervious
*	13,923	98	Generators
*	56,055	85	Gravel
	335,813		Weighted Average
	113,449	73	33.78% Pervious Area
	222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 114.41 cfs @ 11.96 hrs, Volume= 265,041 cf, Depth= 6.42"

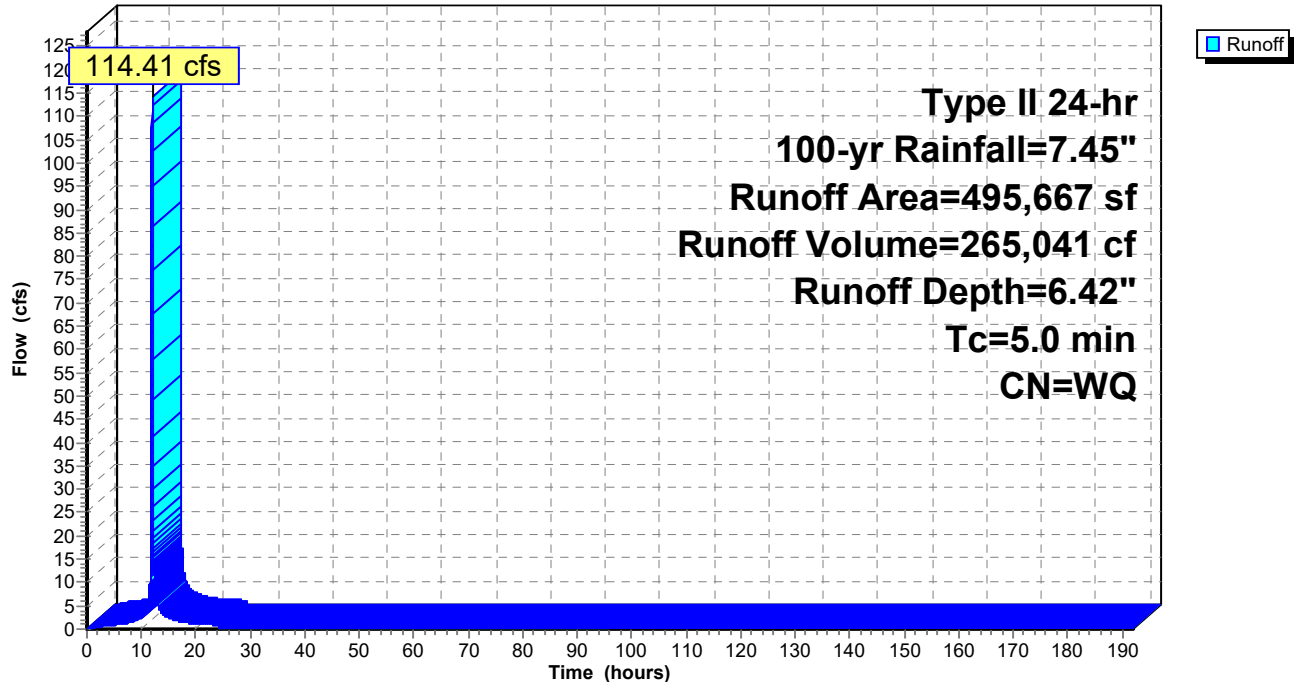
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

Hydrograph



2025-1201 SCS

Type II 24-hr 100-yr Rainfall=7.45"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 99.27 cfs @ 11.96 hrs, Volume= 223,981 cf, Depth= 5.91"

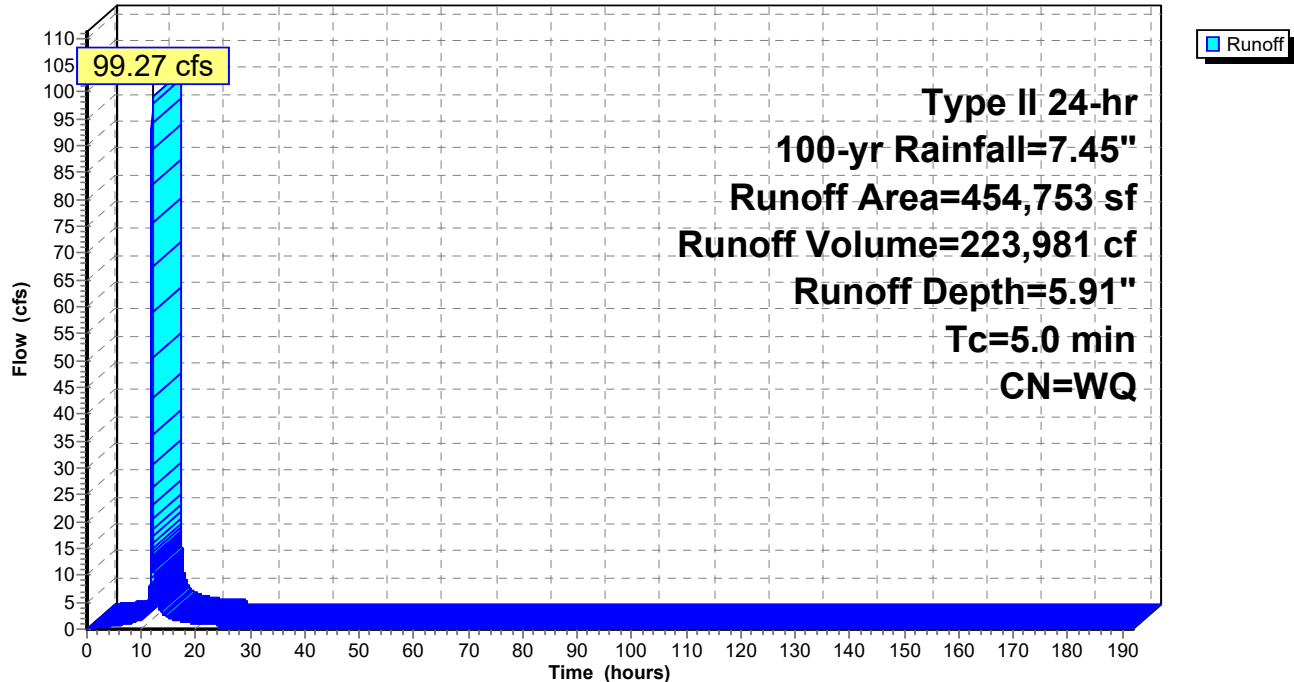
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 44.50 cfs @ 11.96 hrs, Volume= 93,693 cf, Depth= 4.49"

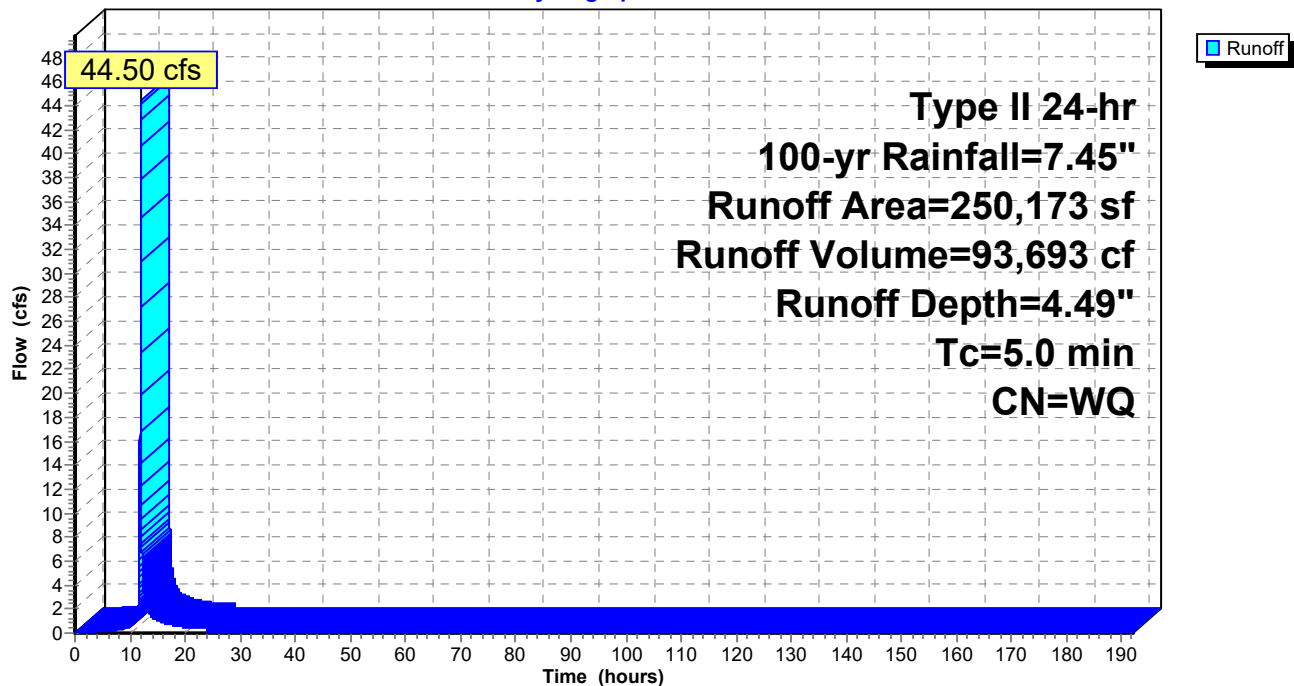
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.45"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Hydrograph



Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 5.14" for 100-yr event
 Inflow = 377.89 cfs @ 11.99 hrs, Volume= 1,212,055 cf
 Outflow = 121.26 cfs @ 12.35 hrs, Volume= 1,205,129 cf, Atten= 68%, Lag= 21.8 min
 Primary = 121.26 cfs @ 12.35 hrs, Volume= 1,205,129 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 359.64' @ 12.35 hrs Surf.Area= 92,896 sf Storage= 376,615 cf

Plug-Flow detention time= 200.5 min calculated for 1,205,129 cf (99% of inflow)
 Center-of-Mass det. time= 144.9 min (1,616.6 - 1,471.7)

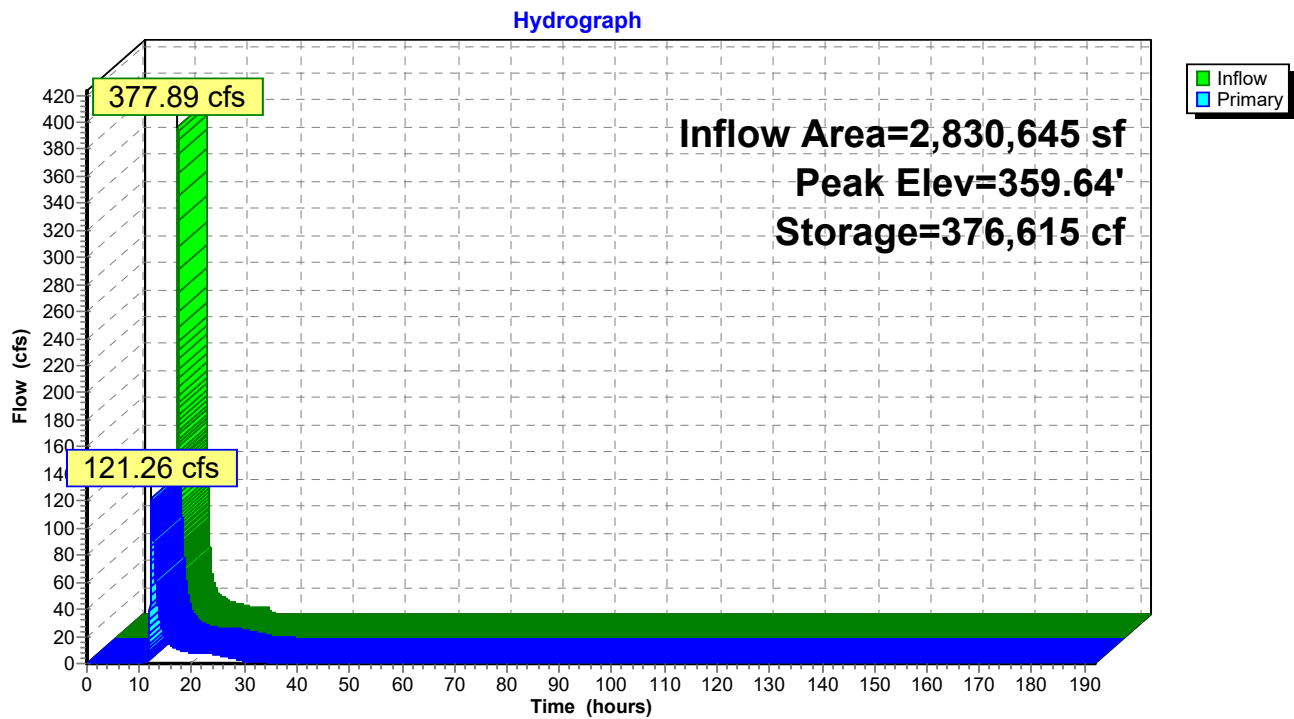
Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=121.25 cfs @ 12.35 hrs HW=359.64' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 121.25 cfs of 301.71 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 13.42 cfs @ 10.04 fps)
 3=19"Wx30"H Weir (Orifice Controls 107.83 cfs @ 5.45 fps)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

2025-1201 SCS*Type II 24-hr 100-yr Rainfall=7.45"*

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 6.65" for 100-yr event
 Inflow = 78.00 cfs @ 11.96 hrs, Volume= 183,632 cf
 Outflow = 63.51 cfs @ 12.00 hrs, Volume= 181,704 cf, Atten= 19%, Lag= 2.7 min
 Primary = 41.98 cfs @ 12.00 hrs, Volume= 173,000 cf
 Secondary = 21.53 cfs @ 12.00 hrs, Volume= 8,704 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 362.35' @ 12.00 hrs Surf.Area= 39,450 sf Storage= 58,791 cf

Plug-Flow detention time= 885.2 min calculated for 181,704 cf (99% of inflow)
 Center-of-Mass det. time= 878.1 min (1,621.5 - 743.5)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=41.97 cfs @ 12.00 hrs HW=362.35' TW=358.23' (Dynamic Tailwater)

1=Outflow Pipe (Passes 41.97 cfs of 69.08 cfs potential flow)

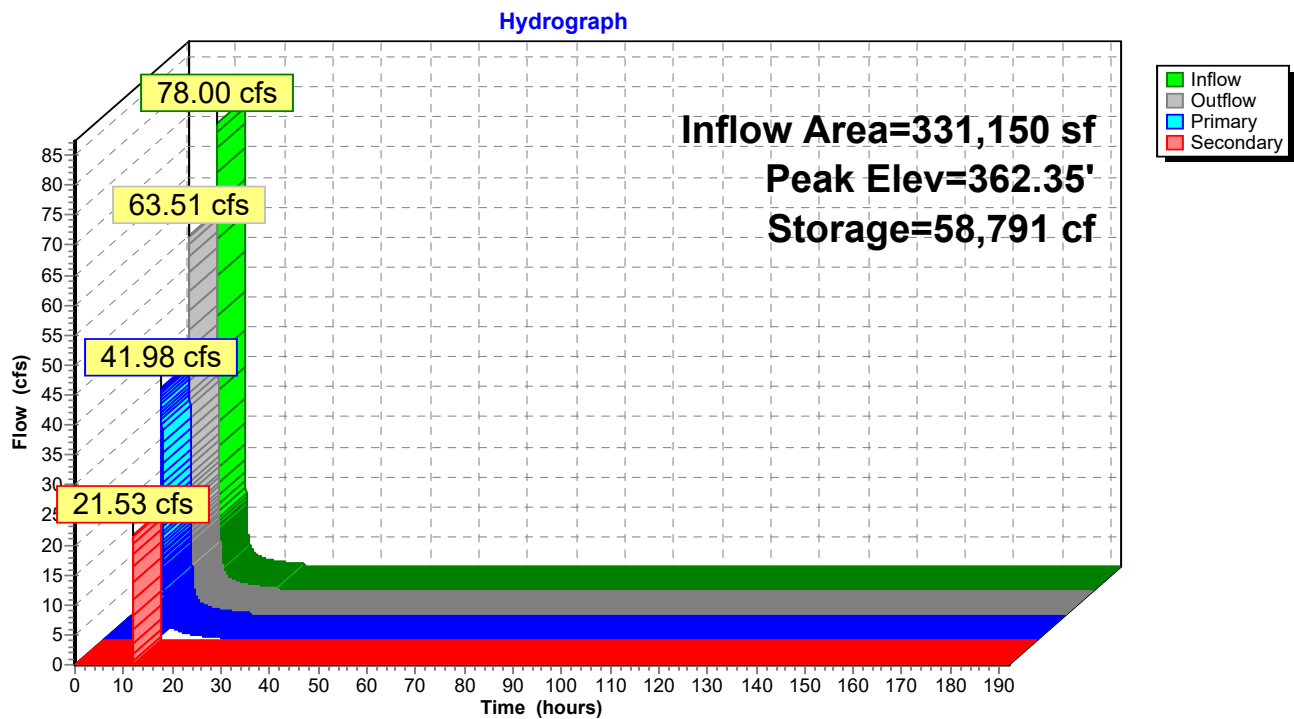
2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.77 fps)

3=Type M Overflow (Orifice Controls 41.91 cfs @ 5.59 fps)

Secondary OutFlow Max=21.45 cfs @ 12.00 hrs HW=362.35' TW=358.23' (Dynamic Tailwater)

4=Emergency Spillway (Weir Controls 21.45 cfs @ 1.55 fps)

Pond SCM-2: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 6.24" for 100-yr event
 Inflow = 76.06 cfs @ 11.96 hrs, Volume= 174,662 cf
 Outflow = 56.15 cfs @ 12.01 hrs, Volume= 167,063 cf, Atten= 26%, Lag= 3.3 min
 Primary = 40.88 cfs @ 12.01 hrs, Volume= 161,491 cf
 Secondary = 15.27 cfs @ 12.01 hrs, Volume= 5,572 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 362.28' @ 12.01 hrs Surf.Area= 47,021 sf Storage= 69,882 cf

Plug-Flow detention time= 1,168.2 min calculated for 167,063 cf (96% of inflow)
 Center-of-Mass det. time= 1,141.3 min (1,895.0 - 753.7)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' S= 0.0077 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=40.86 cfs @ 12.01 hrs HW=362.28' TW=358.37' (Dynamic Tailwater)

1=Outflow Pipe (Passes 40.86 cfs of 67.29 cfs potential flow)

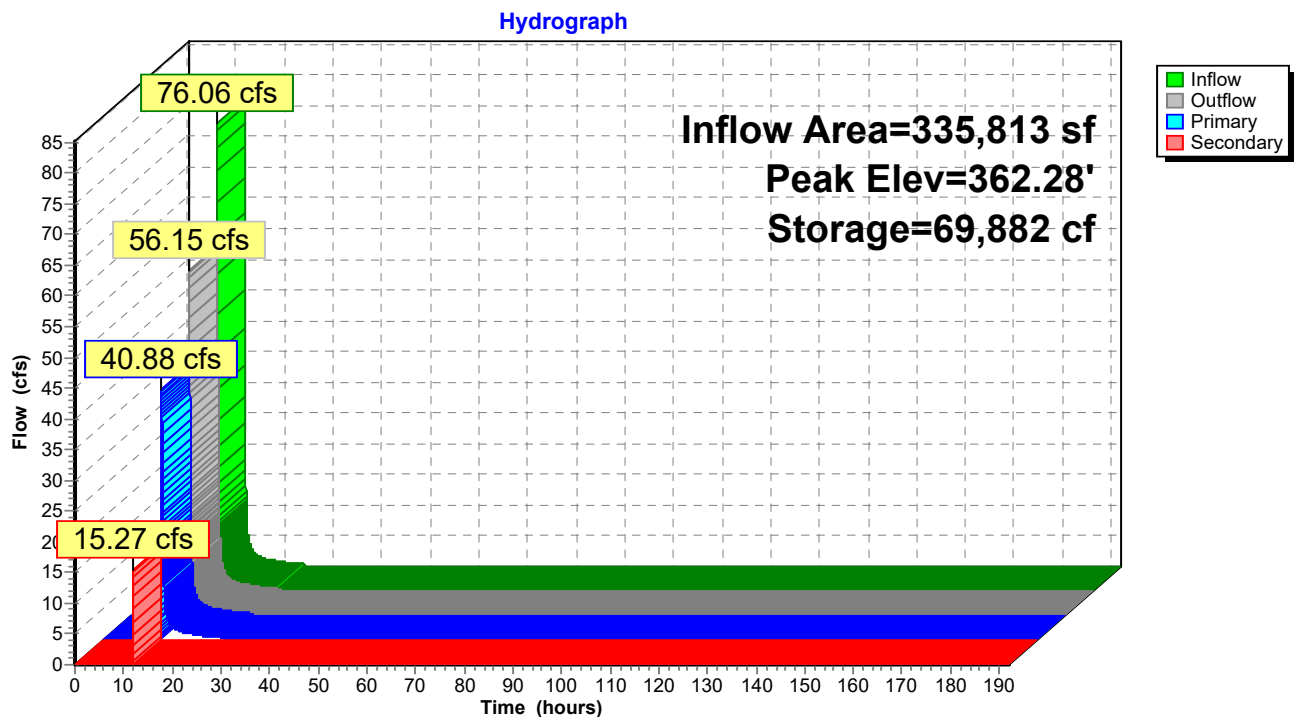
2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.52 fps)

3=Type M Overflow (Orifice Controls 40.80 cfs @ 5.44 fps)

Secondary OutFlow Max=15.20 cfs @ 12.01 hrs HW=362.28' TW=358.37' (Dynamic Tailwater)

4=Emergency Spillway (Weir Controls 15.20 cfs @ 1.37 fps)

Pond SCM-3: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 100-yr Rainfall=7.45"*

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Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 6.42" for 100-yr event
 Inflow = 114.41 cfs @ 11.96 hrs, Volume= 265,041 cf
 Outflow = 50.37 cfs @ 12.05 hrs, Volume= 251,061 cf, Atten= 56%, Lag= 5.5 min
 Primary = 50.37 cfs @ 12.05 hrs, Volume= 251,061 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.94' @ 12.05 hrs Surf.Area= 61,965 sf Storage= 108,252 cf

Plug-Flow detention time= 848.0 min calculated for 251,061 cf (95% of inflow)
 Center-of-Mass det. time= 816.1 min (1,566.0 - 749.9)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

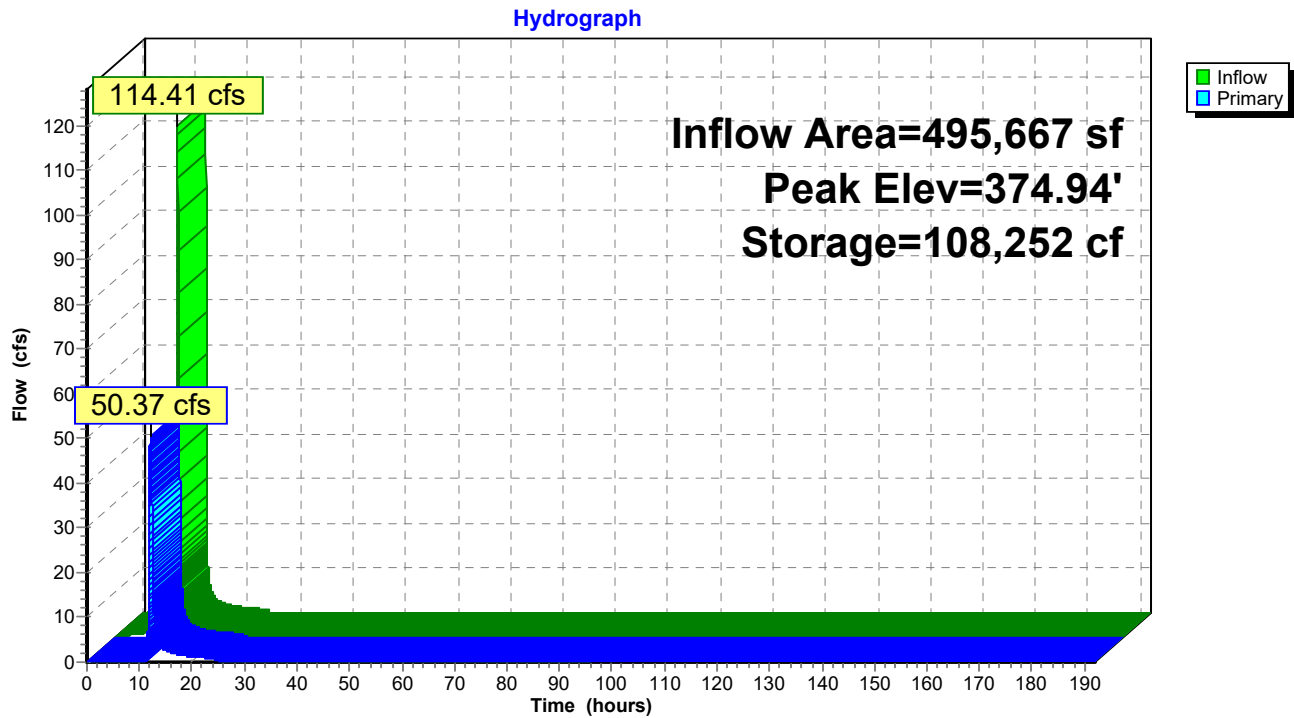
Primary OutFlow Max=50.37 cfs @ 12.05 hrs HW=374.94' TW=358.78' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 50.37 cfs of 74.09 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.08 cfs @ 11.69 fps)

3=Type M Overflow (Orifice Controls 50.29 cfs @ 6.71 fps)

Pond SCM-4: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 100-yr Rainfall=7.45"*

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Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 5.31" for 100-yr event
 Inflow = 114.61 cfs @ 11.96 hrs, Volume= 254,018 cf
 Outflow = 49.30 cfs @ 12.05 hrs, Volume= 240,032 cf, Atten= 57%, Lag= 5.6 min
 Primary = 49.30 cfs @ 12.05 hrs, Volume= 240,032 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 374.86' @ 12.05 hrs Surf.Area= 61,647 sf Storage= 105,396 cf

Plug-Flow detention time= 874.0 min calculated for 240,020 cf (94% of inflow)
 Center-of-Mass det. time= 841.9 min (1,613.0 - 771.1)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

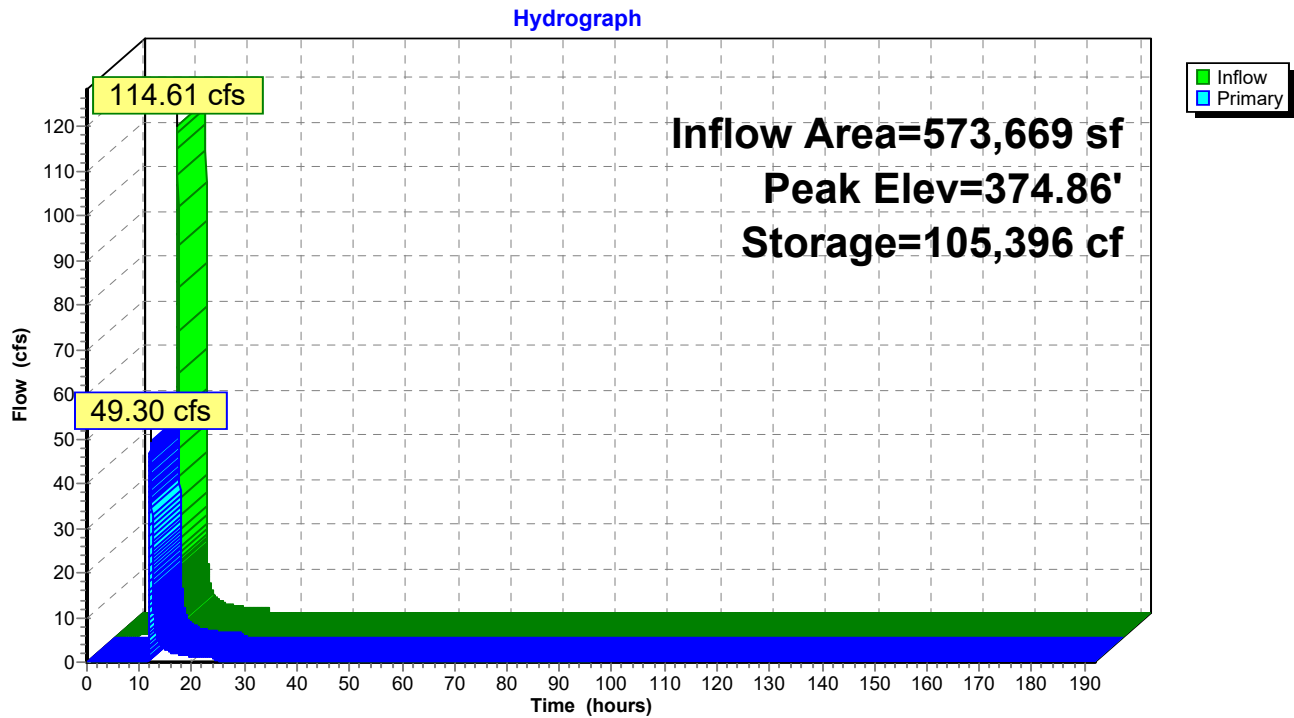
Primary OutFlow Max=49.30 cfs @ 12.05 hrs HW=374.86' TW=358.81' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 49.30 cfs of 73.45 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.08 cfs @ 11.61 fps)

3=Type M Overflow (Orifice Controls 49.22 cfs @ 6.56 fps)

Pond SCM-5: MRC RAIN GARDEN



2025-1201 SCS*Type II 24-hr 100-yr Rainfall=7.45"*

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Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 3.88" for 100-yr event
 Inflow = 120.68 cfs @ 11.96 hrs, Volume= 250,113 cf
 Outflow = 114.94 cfs @ 11.98 hrs, Volume= 249,166 cf, Atten= 5%, Lag= 1.3 min
 Primary = 14.72 cfs @ 11.98 hrs, Volume= 178,448 cf
 Secondary = 100.22 cfs @ 11.98 hrs, Volume= 70,717 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 369.83' @ 11.98 hrs Surf.Area= 28,154 sf Storage= 45,549 cf

Plug-Flow detention time= 382.1 min calculated for 249,166 cf (100% of inflow)
 Center-of-Mass det. time= 379.7 min (1,187.3 - 807.6)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 1' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

2025-1201 SCS

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Type II 24-hr 100-yr Rainfall=7.45"

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Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=14.72 cfs @ 11.98 hrs HW=369.83' TW=357.96' (Dynamic Tailwater)

1=Outflow Pipe (Inlet Controls 14.72 cfs @ 11.99 fps)

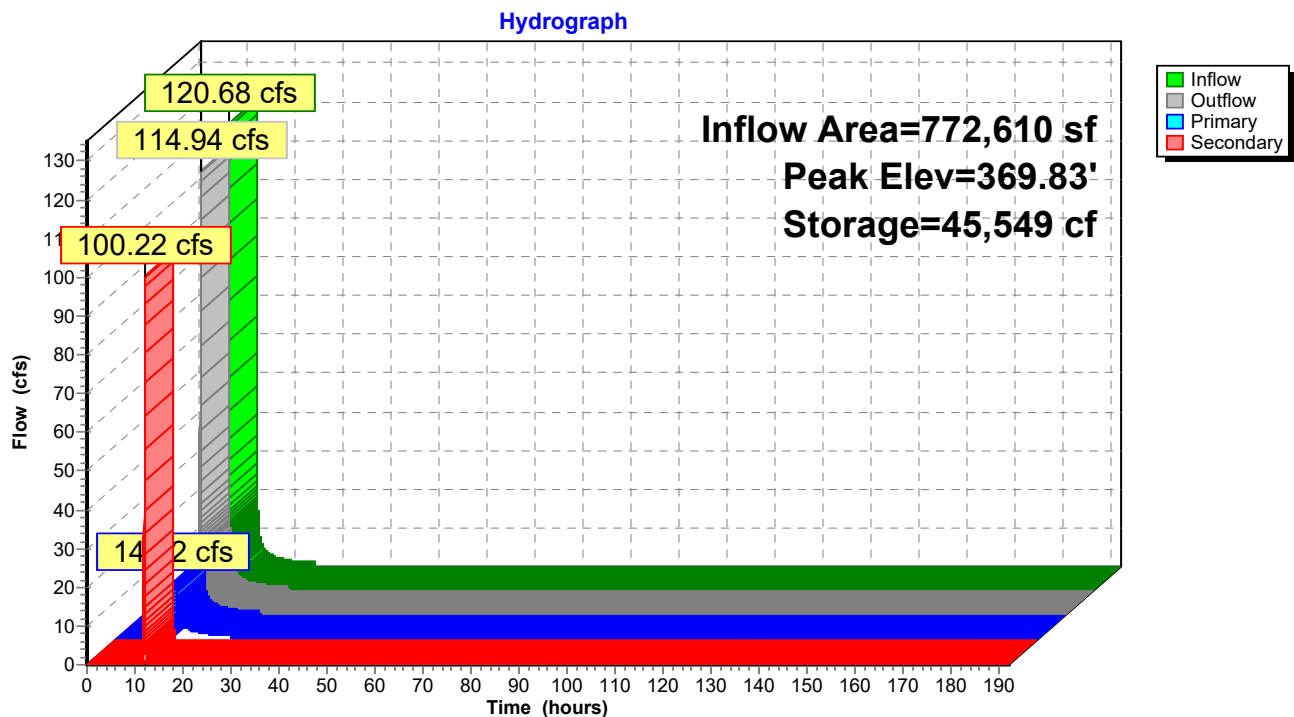
2=MRC Low Flow Orifice (Passes < 0.06 cfs potential flow)

3=Type M Overflow (Passes < 48.81 cfs potential flow)

Secondary OutFlow Max=99.99 cfs @ 11.98 hrs HW=369.83' TW=357.96' (Dynamic Tailwater)

4=Spillway (Weir Controls 99.99 cfs @ 2.42 fps)

Pond SCM-6: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

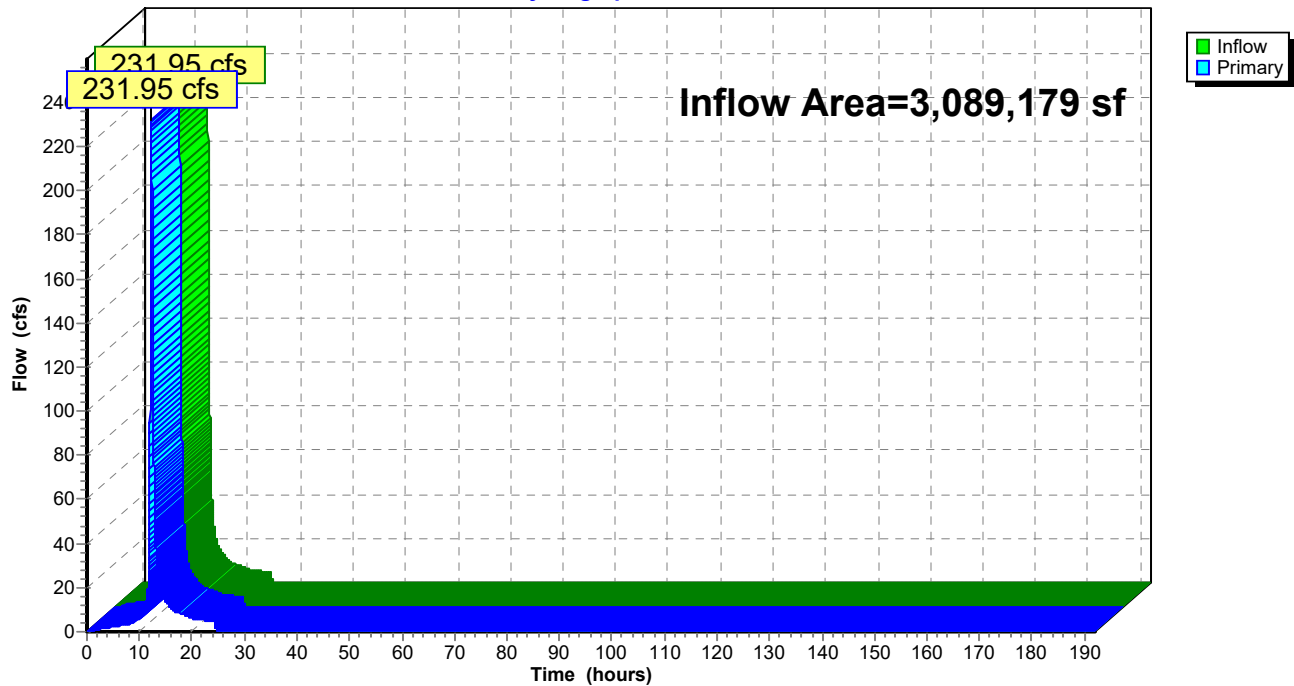
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 4.27" for 100-yr event
Inflow = 231.95 cfs @ 12.25 hrs, Volume= 1,100,040 cf
Primary = 231.95 cfs @ 12.25 hrs, Volume= 1,100,040 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

Hydrograph



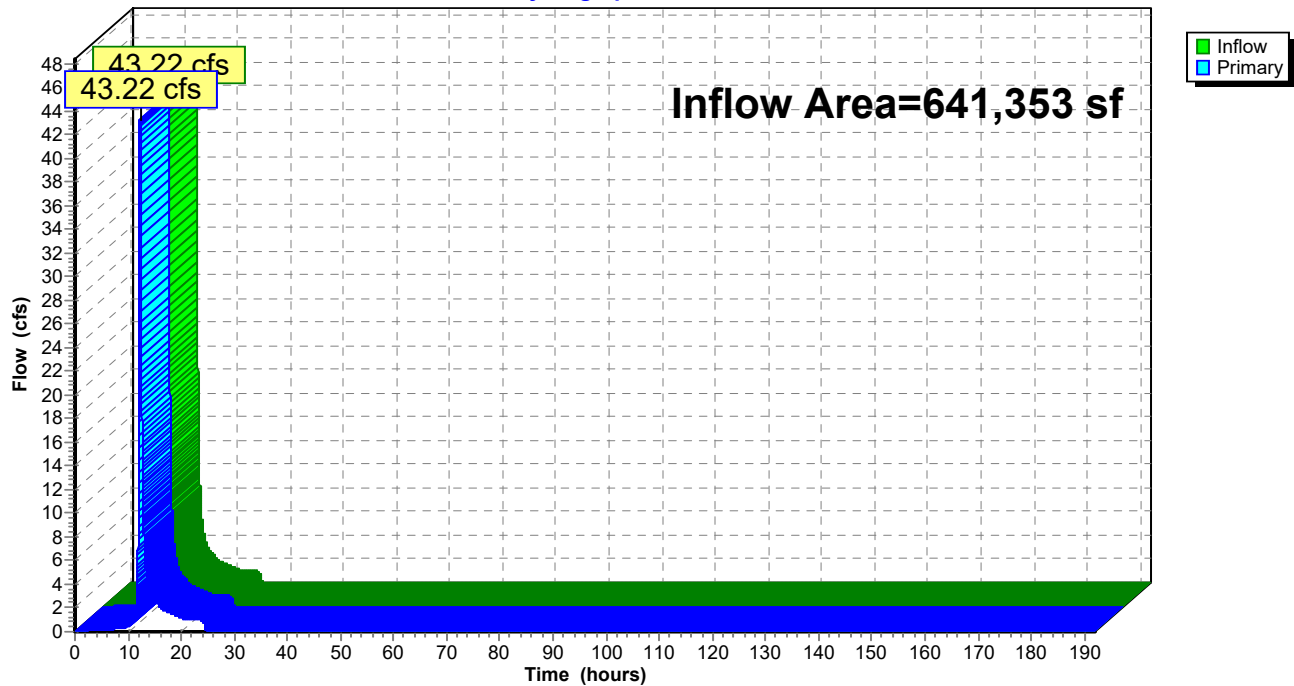
Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 3.49" for 100-yr event
Inflow = 43.22 cfs @ 12.24 hrs, Volume= 186,457 cf
Primary = 43.22 cfs @ 12.24 hrs, Volume= 186,457 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

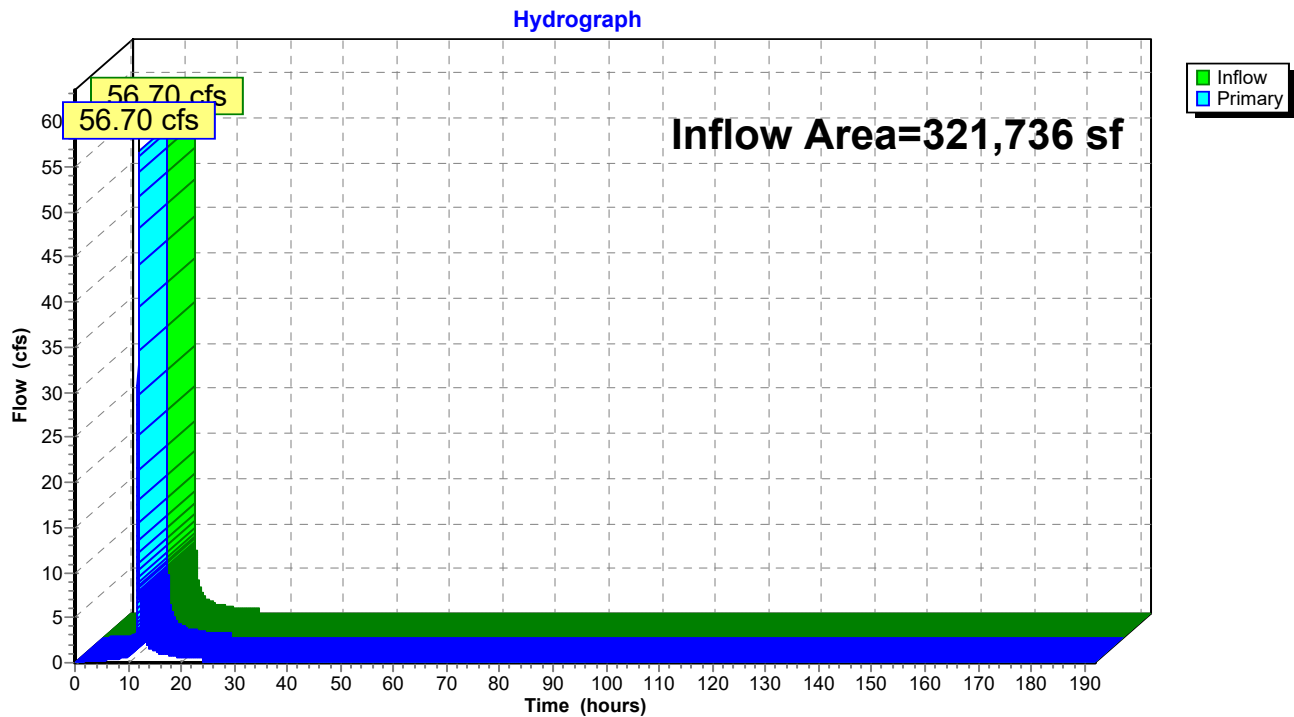
Hydrograph



Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 4.59" for 100-yr event
Inflow = 56.70 cfs @ 11.96 hrs, Volume= 123,029 cf
Primary = 56.70 cfs @ 11.96 hrs, Volume= 123,029 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

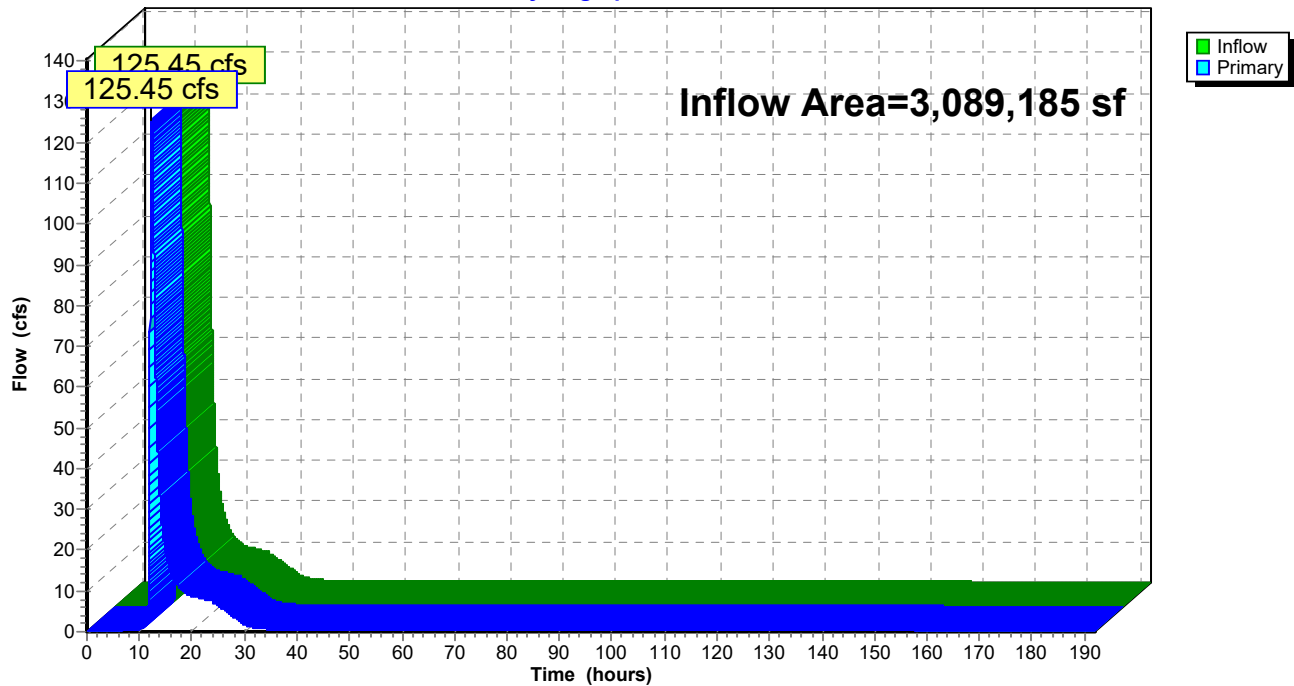
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 4.98" for 100-yr event
Inflow = 125.45 cfs @ 12.34 hrs, Volume= 1,283,146 cf
Primary = 125.45 cfs @ 12.34 hrs, Volume= 1,283,146 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



2025-1201 SCS

NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment B1: BYPASS (LOD)

Runoff = 0.31 cfs @ 1.10 hrs, Volume= 393 cf, Depth= 0.03"

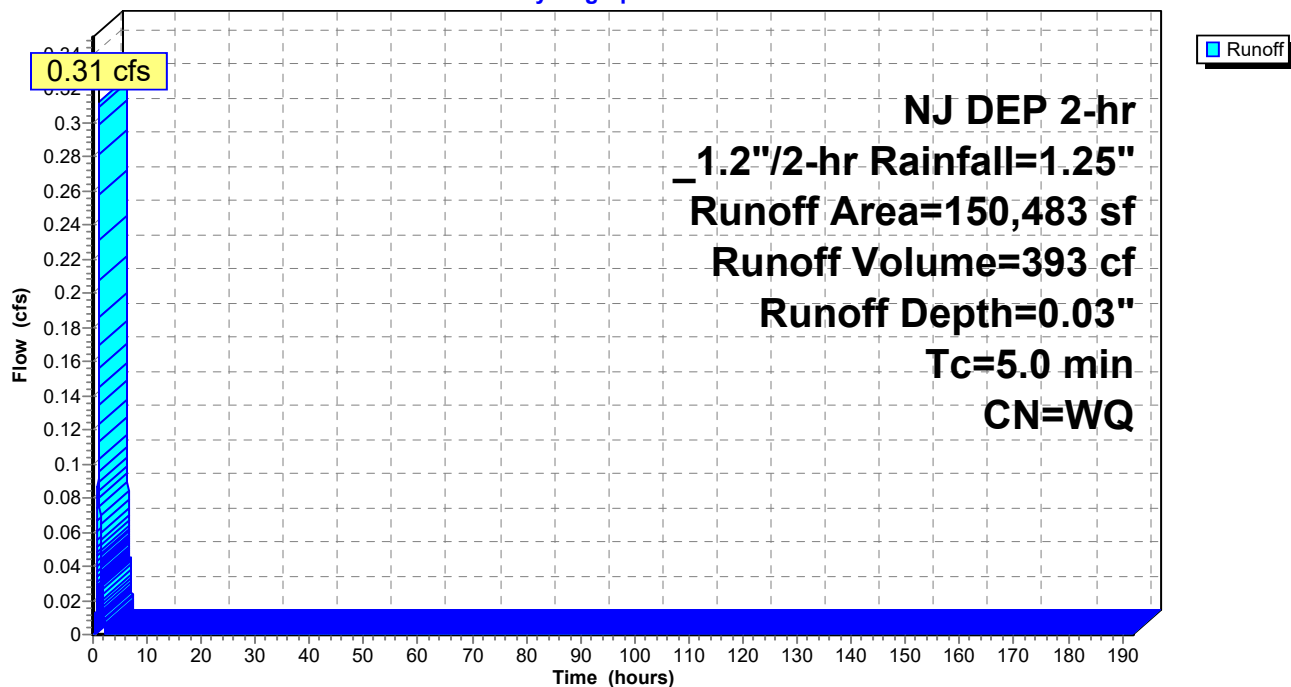
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	4,557	98	Impervious
	145,926	61	>75% Grass cover, Good, HSG B
	150,483		Weighted Average
	145,926	61	96.97% Pervious Area
	4,557	98	3.03% Impervious Area

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

Subcatchment B1: BYPASS (LOD)

Hydrograph



2025-1201 SCS

NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment B2: BYPASS (LOD)

Runoff = 1.94 cfs @ 1.10 hrs, Volume= 2,435 cf, Depth= 1.00"

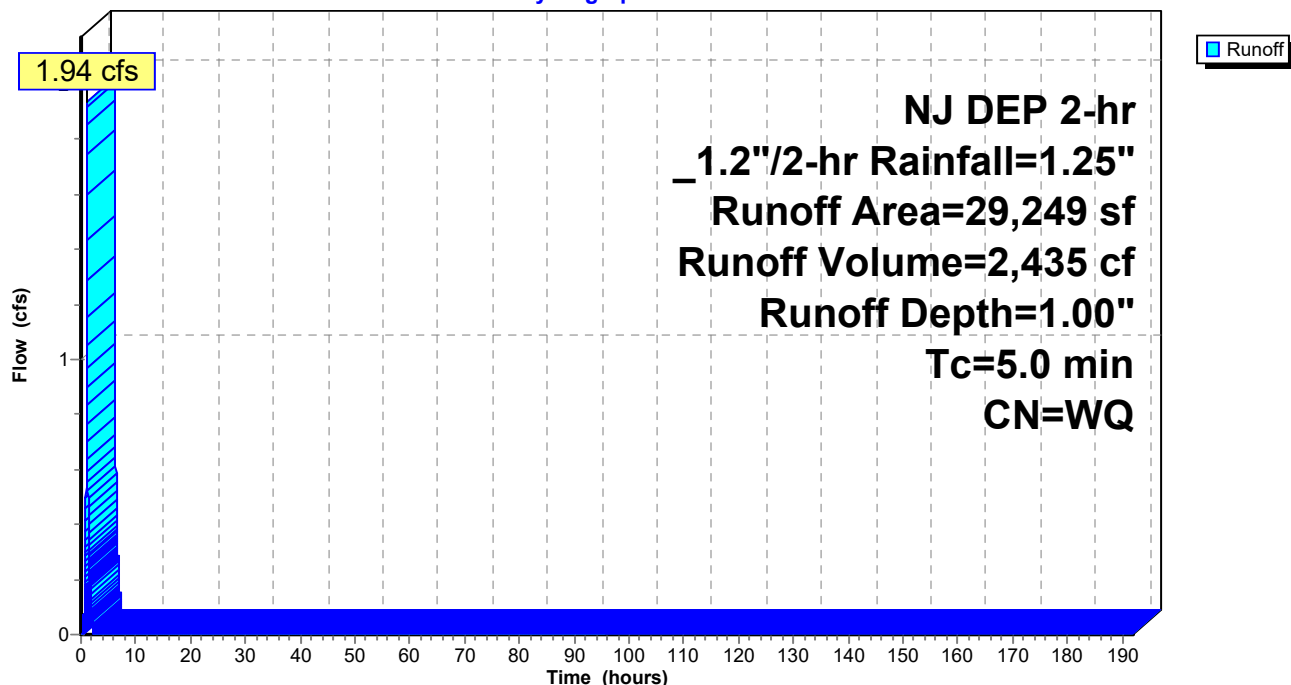
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	28,241	98	Impervious
	1,008	61	>75% Grass cover, Good, HSG B
	29,249		Weighted Average
	1,008	61	3.45% Pervious Area
	28,241	98	96.55% Impervious Area

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

Subcatchment B2: BYPASS (LOD)

Hydrograph



Summary for Subcatchment B3: BYPASS (LOD)

Runoff = 0.05 cfs @ 1.10 hrs, Volume= 61 cf, Depth= 0.01"

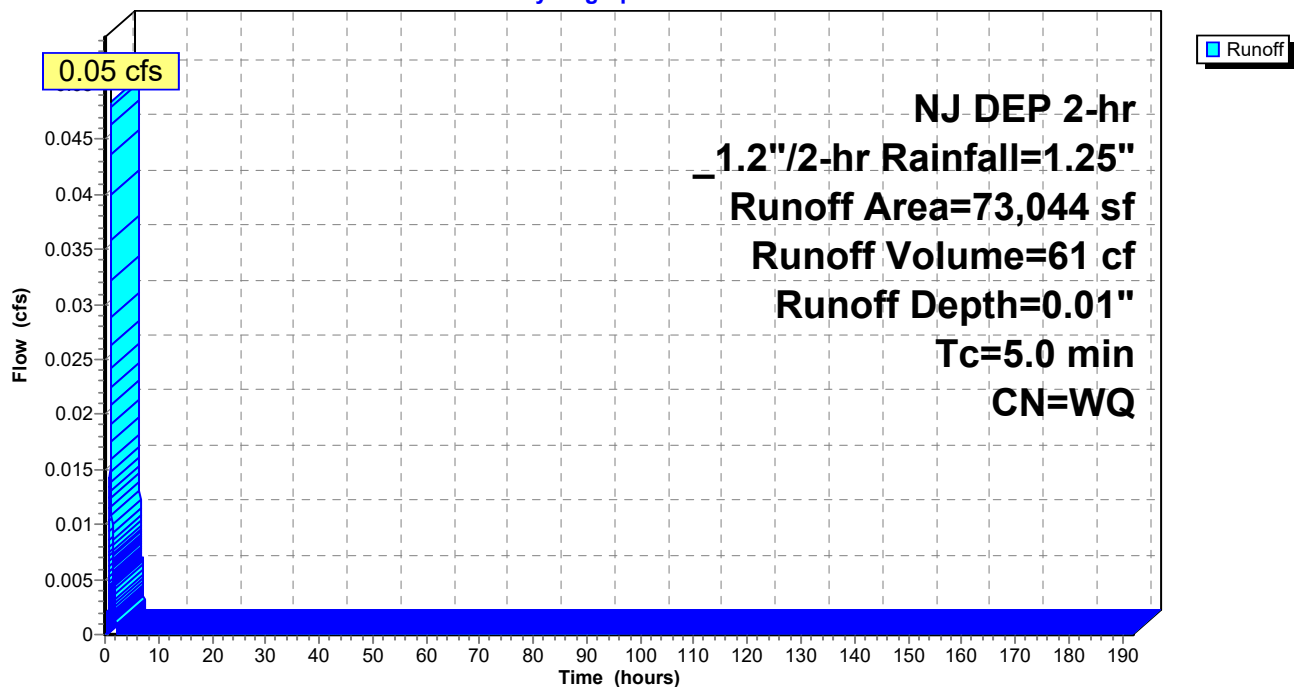
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
* 707	98	Impervious
72,337	61	>75% Grass cover, Good, HSG B
73,044		Weighted Average
72,337	61	99.03% Pervious Area
707	98	0.97% Impervious Area

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

Subcatchment B3: BYPASS (LOD)

Hydrograph



2025-1201 SCS

NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment B4: BYPASS (LOD)

Runoff = 0.21 cfs @ 1.10 hrs, Volume= 258 cf, Depth= 0.54"

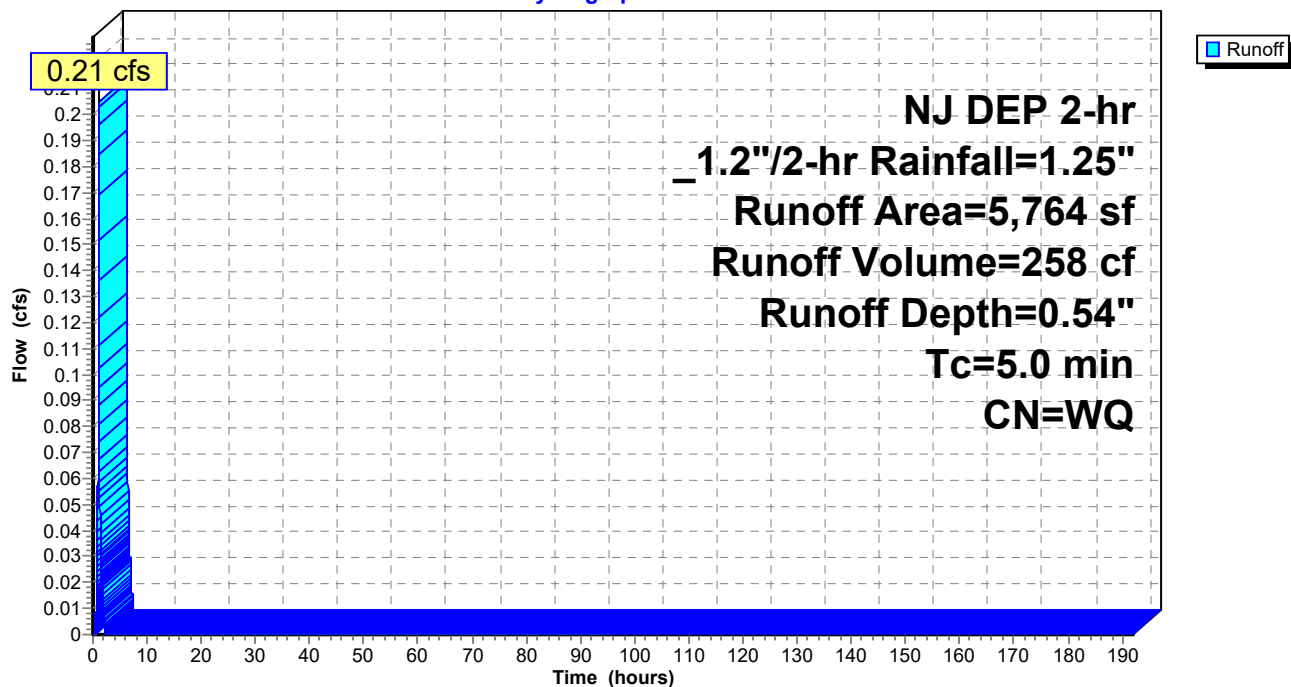
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	2,993	98	Impervious
	2,771	61	>75% Grass cover, Good, HSG B
	5,764		Weighted Average
	2,771	61	48.07% Pervious Area
	2,993	98	51.93% Impervious Area

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

Subcatchment B4: BYPASS (LOD)

Hydrograph



2025-1201 SCS

NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment E1: PRE (LOD)

Runoff = 31.62 cfs @ 1.41 hrs, Volume= 82,651 cf, Depth= 0.41"

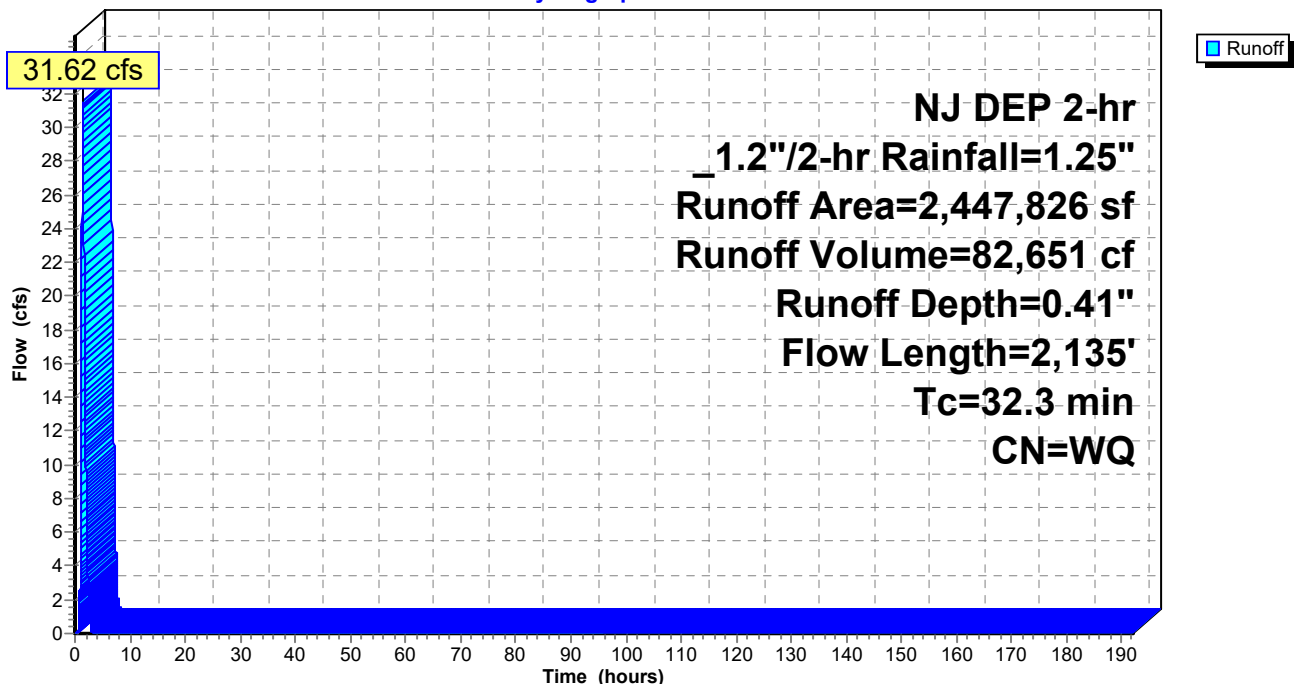
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
1,249,491	58	Meadow, non-grazed, HSG B
* 239,667	58	Meadow (20% of Ex. Impervious)
* 958,668	98	Existing Impervious
2,447,826		Weighted Average
1,489,158	58	60.84% Pervious Area
958,668	98	39.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
4.4	425	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
2.7	410	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
32.3	2,135	Total			

Subcatchment E1: PRE (LOD)

Hydrograph



Summary for Subcatchment E2: PRE (OLOD)

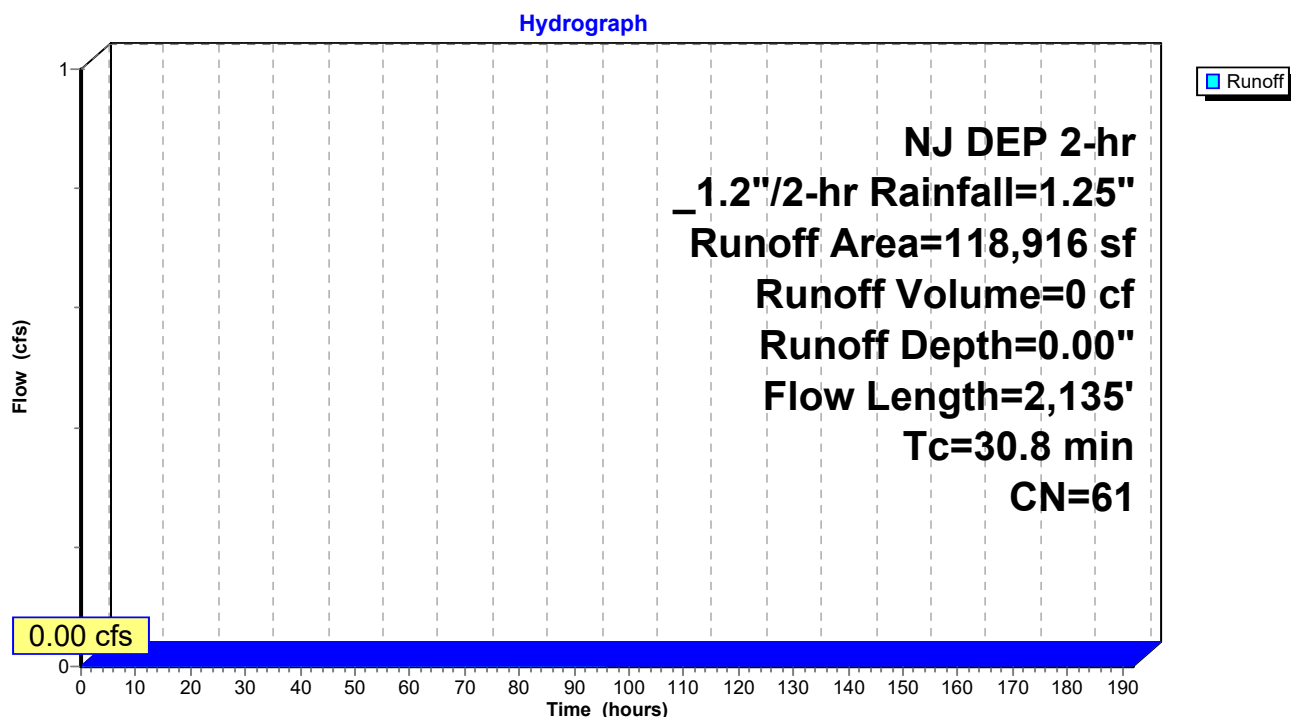
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
3.5	425	0.0100	2.03		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
2.1	410	0.0250	3.21		Shallow Concentrated Flow, SCF Paved Kv= 20.3 fps
12.4	1,200	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
30.8	2,135	Total			

Subcatchment E2: PRE (OLOD)

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NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment E3: PRE (OLOD)

Runoff = 2.51 cfs @ 1.37 hrs, Volume= 6,054 cf, Depth= 0.14"

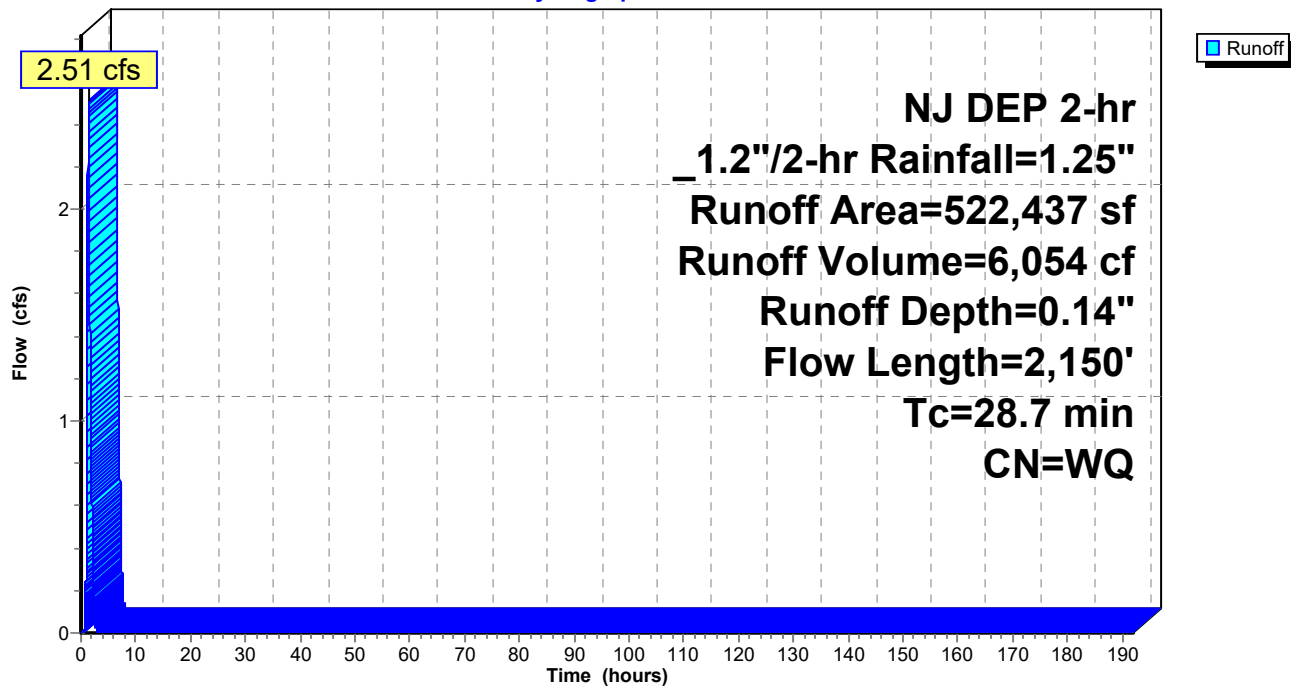
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
* 70,219	98	Existing Impervious
452,218	61	>75% Grass cover, Good, HSG B
522,437		Weighted Average
452,218	61	86.56% Pervious Area
70,219	98	13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		Sheet Flow, SF Grass: Short n= 0.150 P2= 3.24"
9.2	1,400	0.0250	2.55		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
6.7	650	0.0100	1.61		Shallow Concentrated Flow, SCF Unpaved Kv= 16.1 fps
28.7	2,150	Total			

Subcatchment E3: PRE (OLOD)

Hydrograph



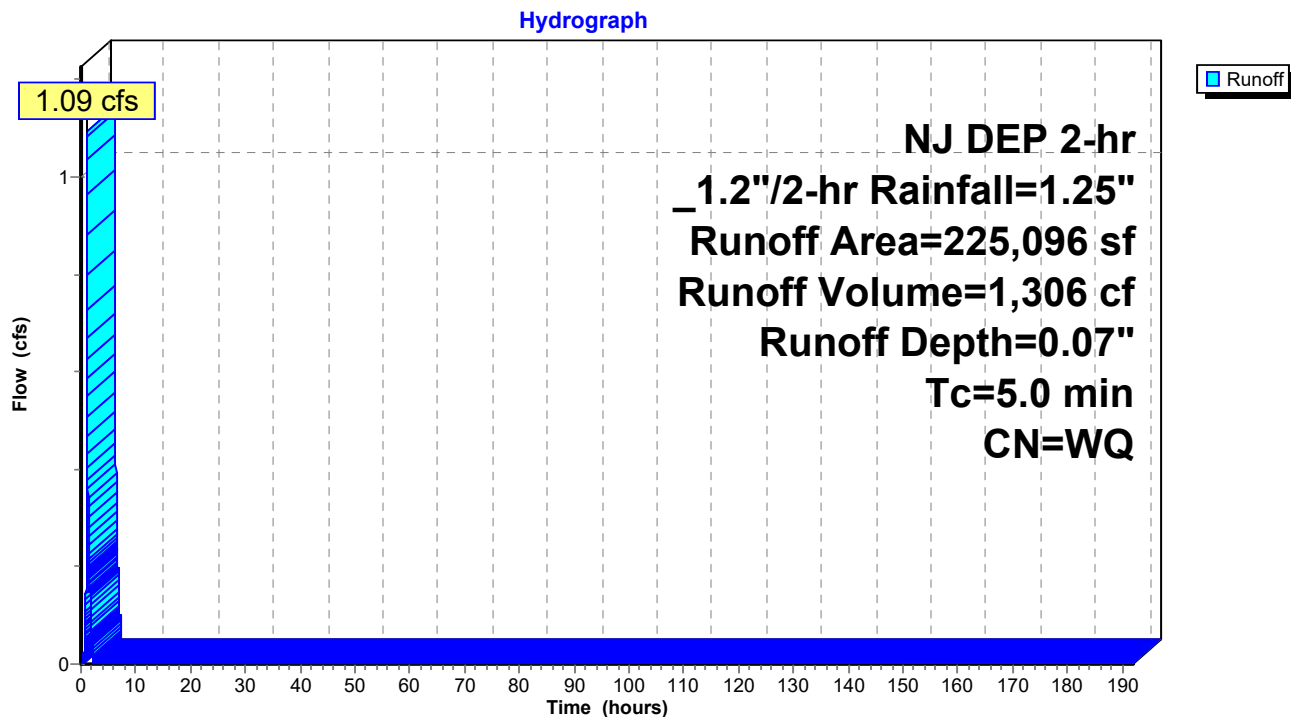
Summary for Subcatchment P1A: POST TO SCM-1 (LOD)

Runoff = 1.09 cfs @ 1.11 hrs, Volume= 1,306 cf, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	23,699	85	Gravel
*	8,222	98	Impervious
	193,175	61	>75% Grass cover, Good, HSG B
	225,096		Weighted Average
	216,874	64	96.35% Pervious Area
	8,222	98	3.65% Impervious Area

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

Subcatchment P1A: POST TO SCM-1 (LOD)

Summary for Subcatchment P1B: POST TO SCM-1 (LOD)

Runoff = 6.63 cfs @ 1.10 hrs, Volume= 8,332 cf, Depth= 1.03"

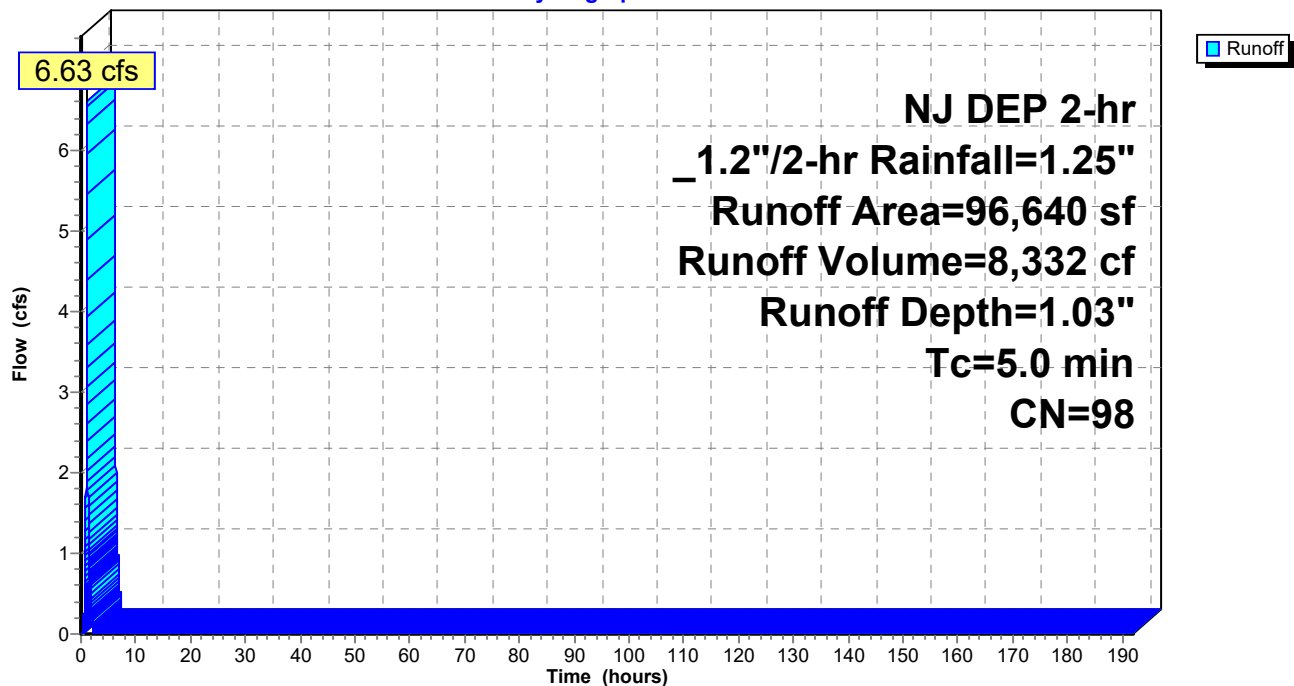
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	96,640	98	Buildings
	96,640	98	100.00% Impervious Area

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

Subcatchment P1B: POST TO SCM-1 (LOD)

Hydrograph



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NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment P1C: POST TO SCM-1 (oLOD)

Runoff = 4.82 cfs @ 1.10 hrs, Volume= 6,054 cf, Depth= 0.14"

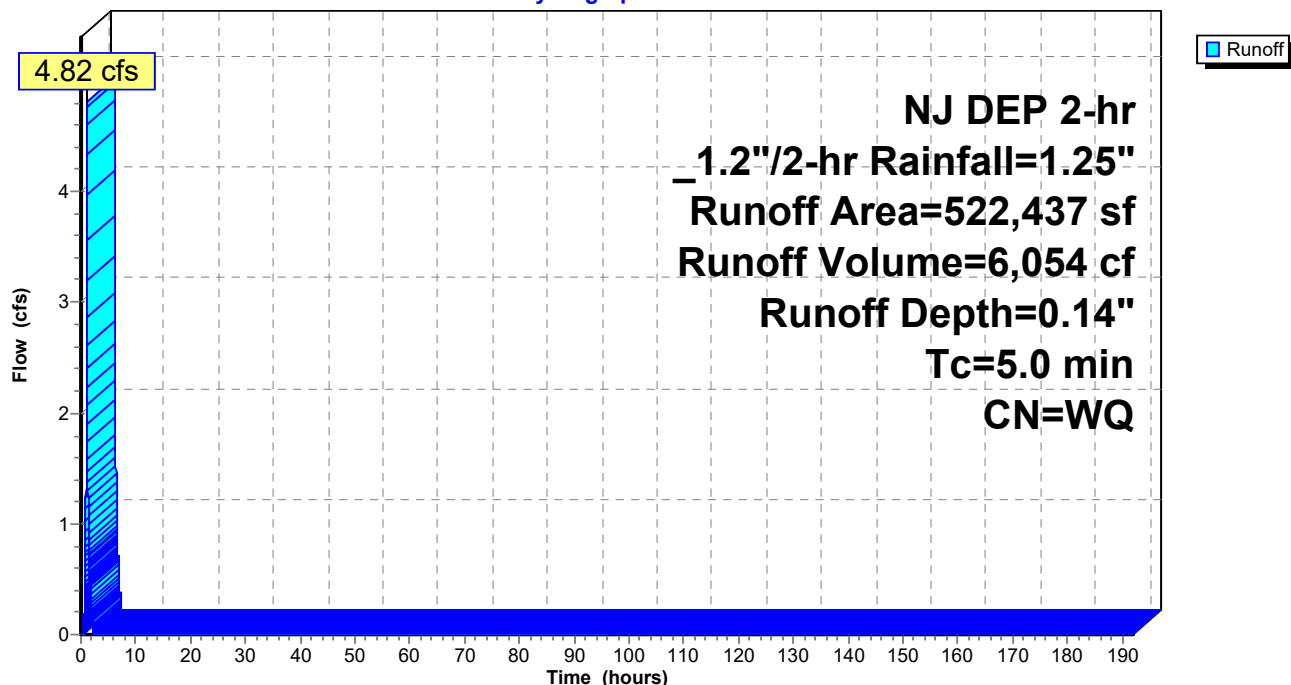
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	70,219	98	Impervious
	452,218	61	>75% Grass cover, Good, HSG B
	522,437		Weighted Average
	452,218	61	86.56% Pervious Area
	70,219	98	13.44% Impervious Area

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

Subcatchment P1C: POST TO SCM-1 (oLOD)

Hydrograph



Summary for Subcatchment P1D: POST TO SCM-5 (oLOD)

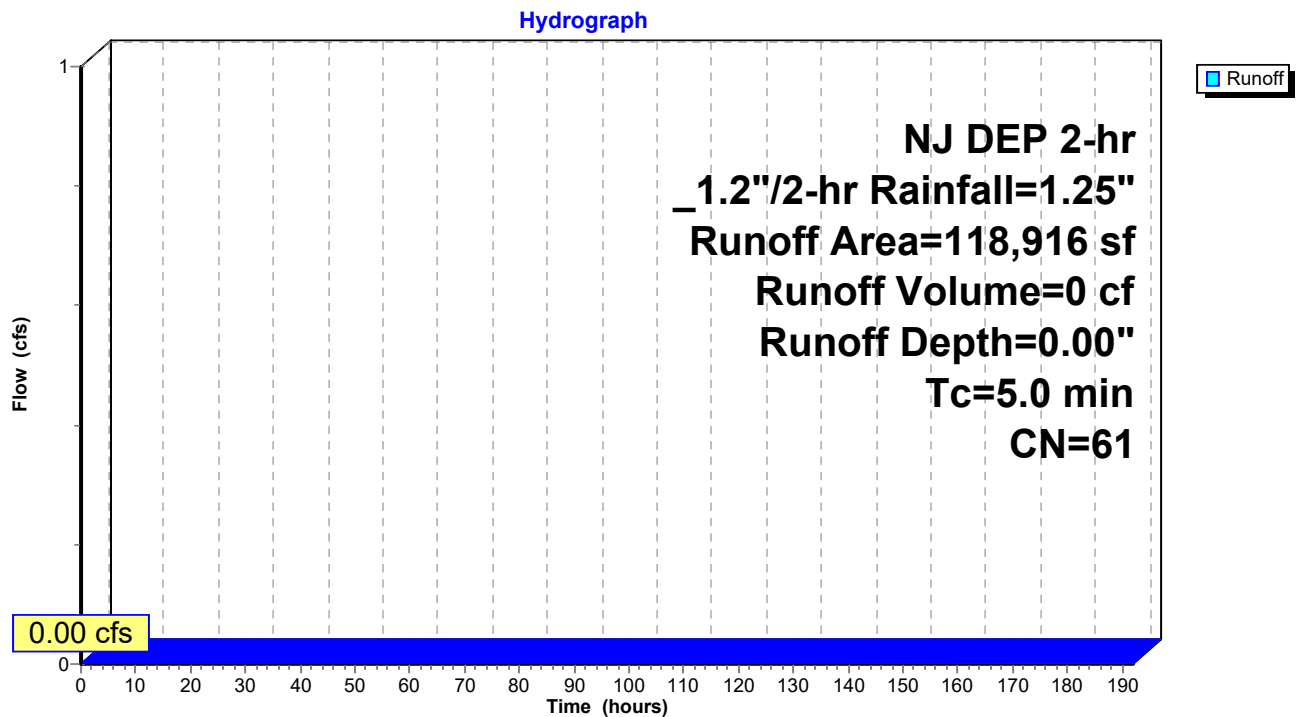
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
118,916	61	>75% Grass cover, Good, HSG B
118,916	61	100.00% Pervious Area

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

Subcatchment P1D: POST TO SCM-5 (oLOD)

Summary for Subcatchment P2: POST TO SCM-2 (LOD)

Runoff = 19.68 cfs @ 1.10 hrs, Volume= 24,743 cf, Depth= 0.90"

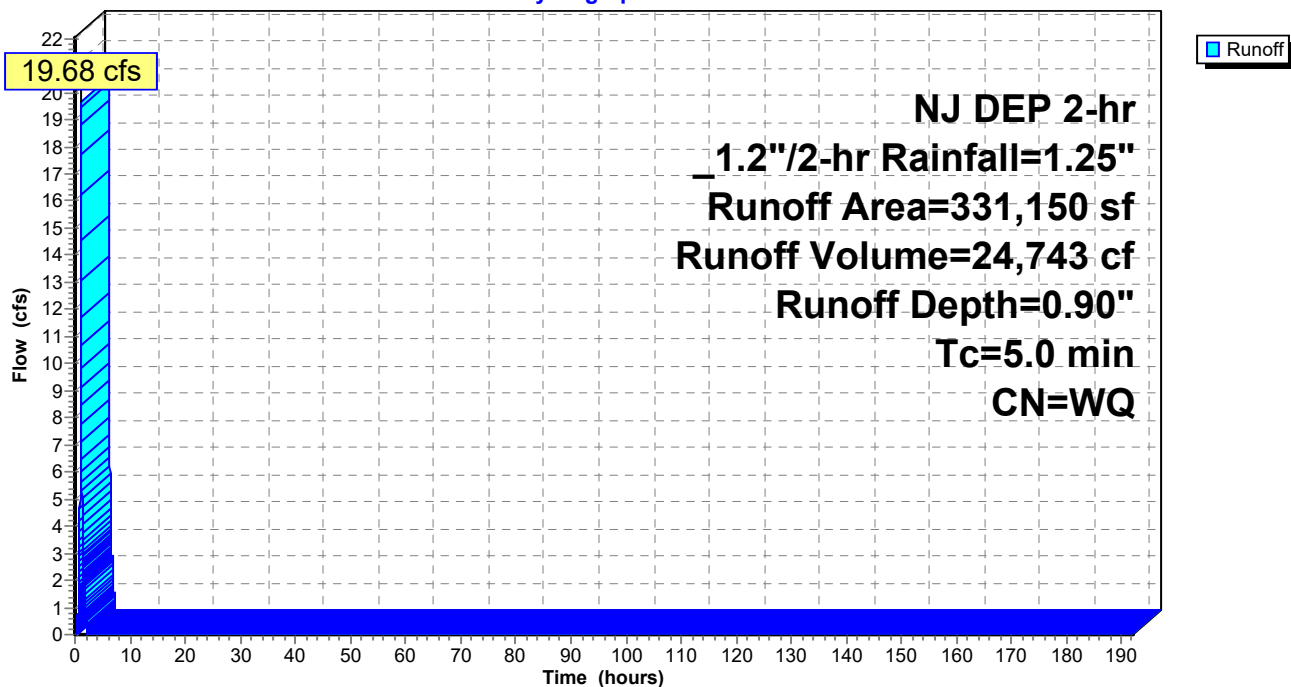
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
43,983	61	>75% Grass cover, Good, HSG B
* 222,293	98	Building
* 64,630	98	Impervious
* 244	85	Gravel
331,150		Weighted Average
44,227	61	13.36% Pervious Area
286,923	98	86.64% Impervious Area

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

Subcatchment P2: POST TO SCM-2 (LOD)

Hydrograph



2025-1201 SCS

NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment P3: POST TO SCM-3 (LOD)

Runoff = 16.46 cfs @ 1.10 hrs, Volume= 20,583 cf, Depth= 0.74"

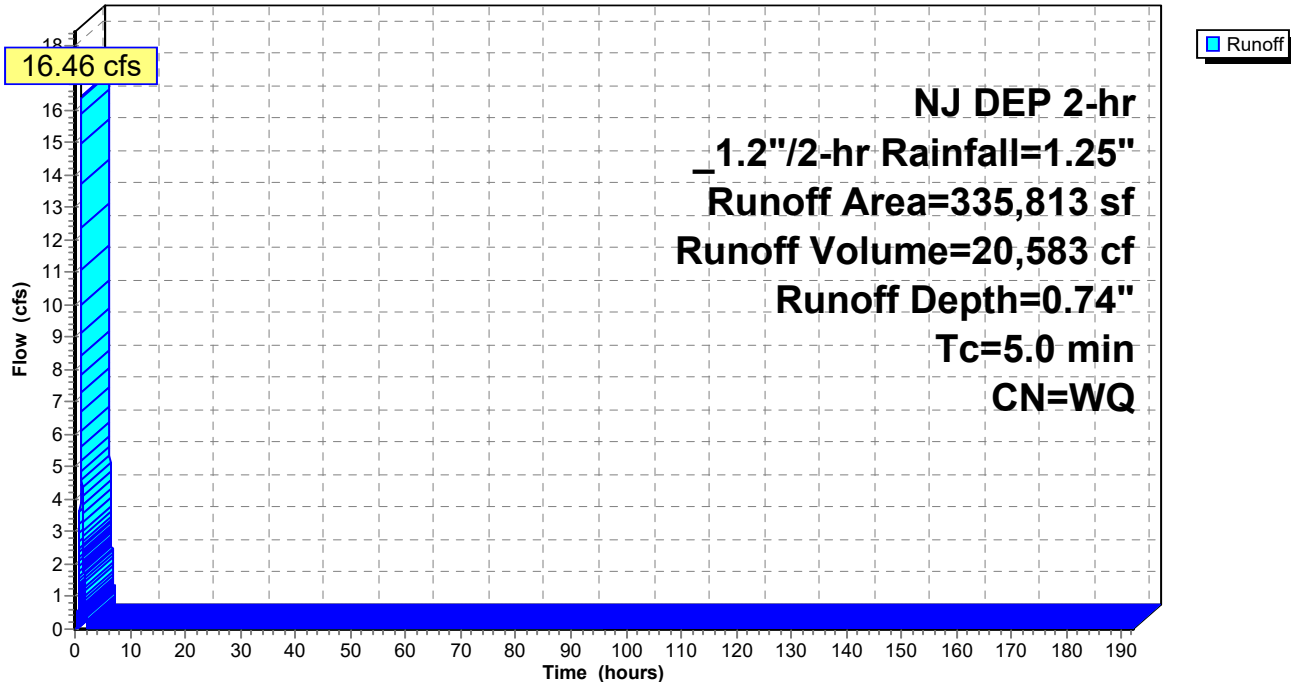
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

Area (sf)	CN	Description
57,394	61	>75% Grass cover, Good, HSG B
* 188,667	98	Building
* 19,774	98	Impervious
* 13,923	98	Generators
* 56,055	85	Gravel
335,813		Weighted Average
113,449	73	33.78% Pervious Area
222,364	98	66.22% Impervious Area

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

Subcatchment P3: POST TO SCM-3 (LOD)

Hydrograph



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NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment P4: Post to SCM-04 (LOD)

Runoff = 26.19 cfs @ 1.10 hrs, Volume= 32,818 cf, Depth= 0.79"

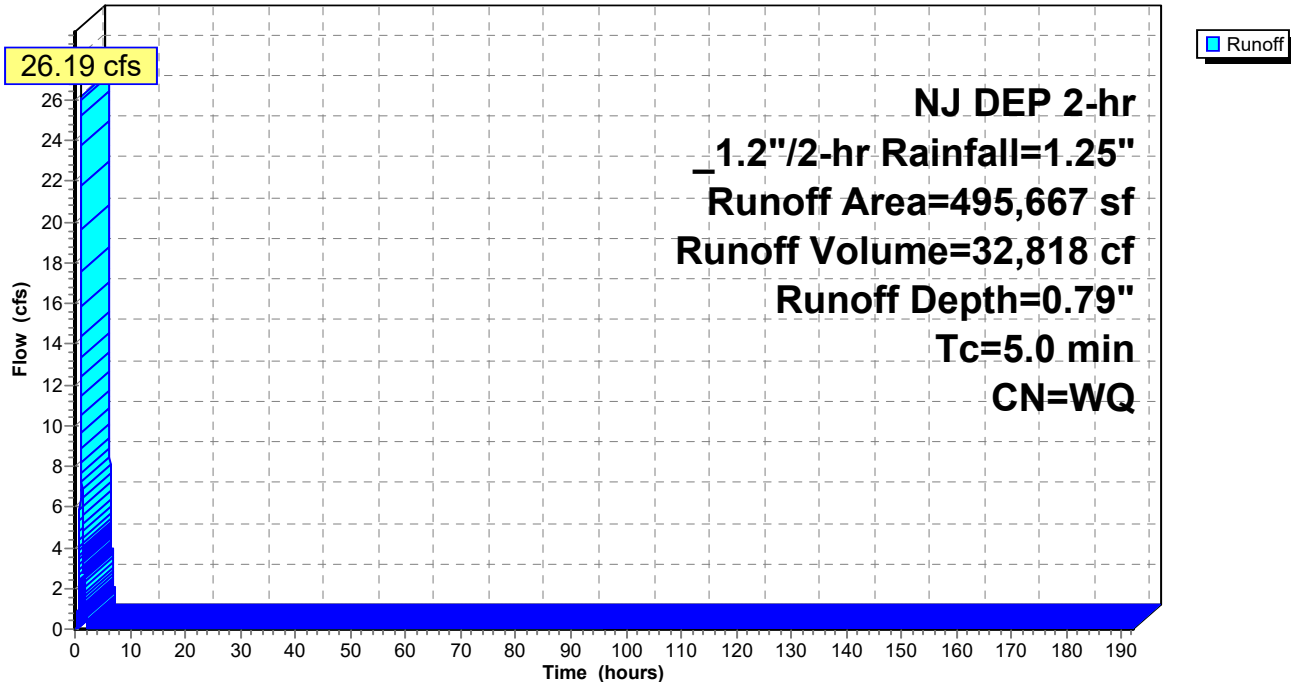
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	222,093	98	Buildings
*	126,859	98	Impervious
	71,929	61	>75% Grass cover, Good, HSG B
*	13,923	98	Generators
*	60,863	85	Gravel
	495,667		Weighted Average
	132,792	72	26.79% Pervious Area
	362,875	98	73.21% Impervious Area

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

Subcatchment P4: Post to SCM-04 (LOD)

Hydrograph



2025-1201 SCS

NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

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Summary for Subcatchment P5: Post to SCM-05 (LOD)

Runoff = 19.01 cfs @ 1.10 hrs, Volume= 23,670 cf, Depth= 0.62"

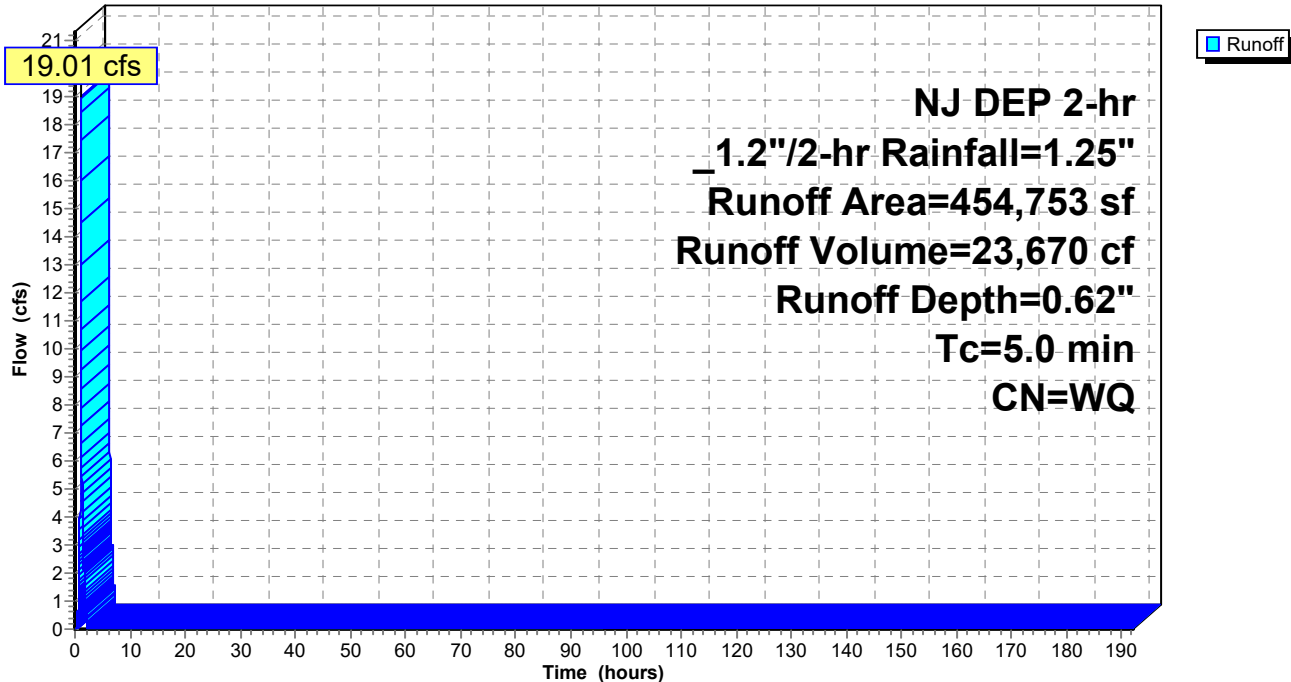
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	97,027	98	Buildings
*	116,620	98	Impervious
	100,145	61	>75% Grass cover, Good, HSG B
*	27,846	98	Generators
*	113,115	85	Gravel
	454,753		Weighted Average
	213,260	74	46.90% Pervious Area
	241,493	98	53.10% Impervious Area

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

Subcatchment P5: Post to SCM-05 (LOD)

Hydrograph



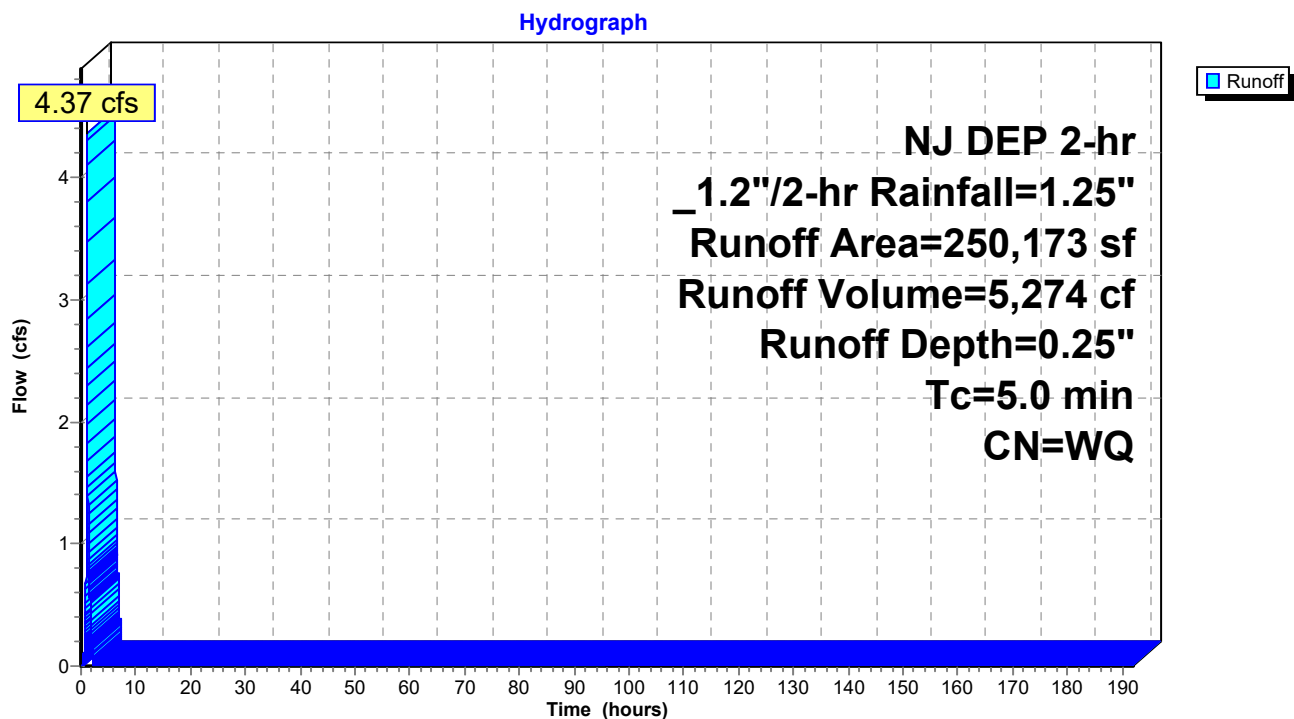
Summary for Subcatchment P6: Post to SCM-05 (LOD)

Runoff = 4.37 cfs @ 1.11 hrs, Volume= 5,274 cf, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"

	Area (sf)	CN	Description
*	38,635	98	Impervious
*	77,110	85	Gravel
	134,428	61	>75% Grass cover, Good, HSG B
	250,173		Weighted Average
	211,538	70	84.56% Pervious Area
	38,635	98	15.44% Impervious Area

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

Subcatchment P6: Post to SCM-05 (LOD)

Summary for Pond SCM-1: WET POND

Inflow Area = 2,830,645 sf, 46.89% Impervious, Inflow Depth > 0.48" for $\frac{1.2}{2}$ -hr event
 Inflow = 7.93 cfs @ 1.10 hrs, Volume= 113,904 cf
 Outflow = 0.31 cfs @ 2.11 hrs, Volume= 111,322 cf, Atten= 96%, Lag= 60.6 min
 Primary = 0.31 cfs @ 2.11 hrs, Volume= 111,322 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 355.14' @ 2.11 hrs Surf.Area= 70,370 sf Storage= 9,781 cf

Plug-Flow detention time= 659.7 min calculated for 111,322 cf (98% of inflow)
 Center-of-Mass det. time= 499.7 min (4,070.3 - 3,570.6)

Volume	Invert	Avail.Storage	Storage Description
#1	355.00'	610,365 cf	Storage Above Perm. Pool (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
355.00	69,700	0	0
356.00	74,500	72,100	72,100
357.00	79,400	76,950	149,050
358.00	84,400	81,900	230,950
359.00	89,550	86,975	317,925
360.00	94,750	92,150	410,075
361.00	100,140	97,445	507,520
362.00	105,550	102,845	610,365

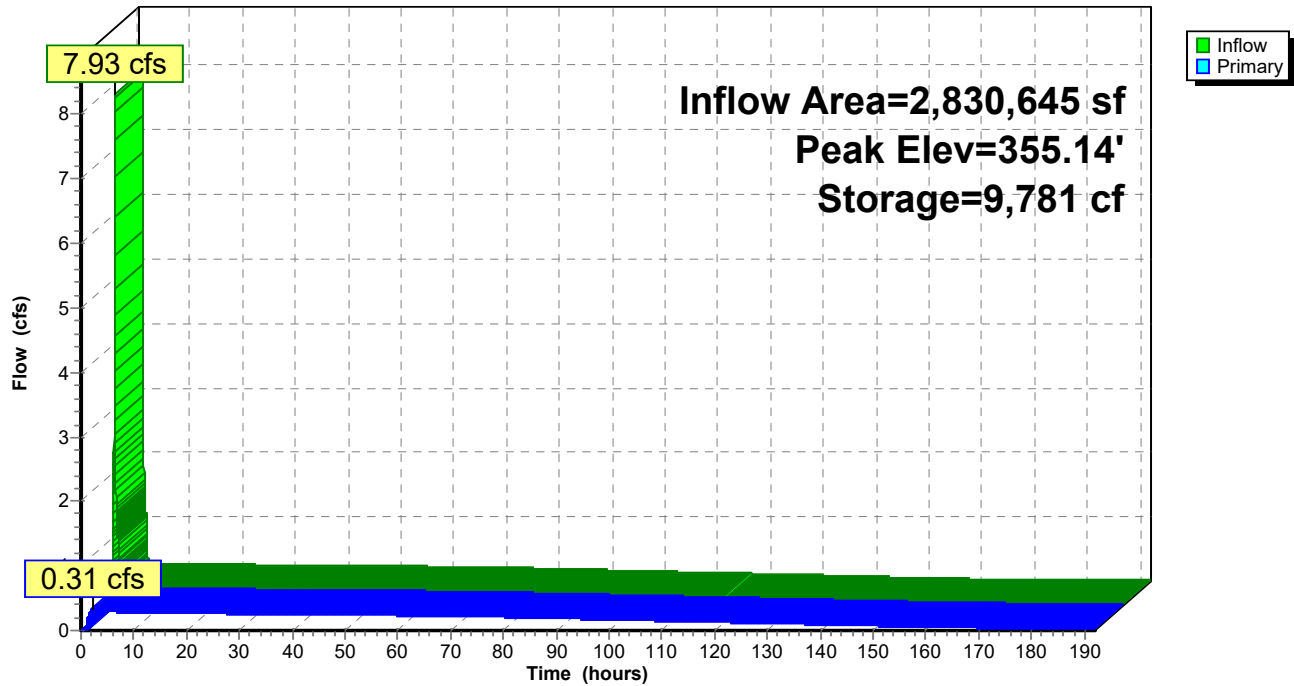
Device	Routing	Invert	Outlet Devices
#1	Primary	355.00'	36.0" Round 36" Outfall X 5.00 L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 355.00' / 354.50' S= 0.0156 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	355.00'	7.0" Vert. 7" Siphon Orifice X 5.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	357.00'	19.0" W x 30.0" H Vert. 19"Wx30"H Weir X 5.00 C= 0.600 Limited to weir flow at low heads
#4	Device 1	360.10'	24.0" x 45.0" Horiz. Type M Inlet X 5.00 C= 0.600 Limited to weir flow at low heads
#5	Primary	360.60'	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.31 cfs @ 2.11 hrs HW=355.14' TW=0.00' (Dynamic Tailwater)

1=36" Outfall (Passes 0.31 cfs of 0.76 cfs potential flow)
 2=7" Siphon Orifice (Orifice Controls 0.31 cfs @ 1.27 fps)
 3=19"Wx30"H Weir (Controls 0.00 cfs)
 4=Type M Inlet (Controls 0.00 cfs)
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond SCM-1: WET POND

Hydrograph



2025-1201 SCS*NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"*

Prepared by S. Deisher, P.E. of JMR Engineering, LLC

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Stage-Area-Storage for Pond SCM-1: WET POND

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
355.00	69,700	0	360.30	96,367	438,743
355.10	70,180	6,994	360.40	96,906	448,406
355.20	70,660	14,036	360.50	97,445	458,124
355.30	71,140	21,126	360.60	97,984	467,895
355.40	71,620	28,264	360.70	98,523	477,721
355.50	72,100	35,450	360.80	99,062	487,600
355.60	72,580	42,684	360.90	99,601	497,533
355.70	73,060	49,966	361.00	100,140	507,520
355.80	73,540	57,296	361.10	100,681	517,561
355.90	74,020	64,674	361.20	101,222	527,656
356.00	74,500	72,100	361.30	101,763	537,805
356.10	74,990	79,575	361.40	102,304	548,009
356.20	75,480	87,098	361.50	102,845	558,266
356.30	75,970	94,671	361.60	103,386	568,578
356.40	76,460	102,292	361.70	103,927	578,943
356.50	76,950	109,963	361.80	104,468	589,363
356.60	77,440	117,682	361.90	105,009	599,837
356.70	77,930	125,450	362.00	105,550	610,365
356.80	78,420	133,268			
356.90	78,910	141,134			
357.00	79,400	149,050			
357.10	79,900	157,015			
357.20	80,400	165,030			
357.30	80,900	173,095			
357.40	81,400	181,210			
357.50	81,900	189,375			
357.60	82,400	197,590			
357.70	82,900	205,855			
357.80	83,400	214,170			
357.90	83,900	222,535			
358.00	84,400	230,950			
358.10	84,915	239,416			
358.20	85,430	247,933			
358.30	85,945	256,502			
358.40	86,460	265,122			
358.50	86,975	273,794			
358.60	87,490	282,517			
358.70	88,005	291,292			
358.80	88,520	300,118			
358.90	89,035	308,996			
359.00	89,550	317,925			
359.10	90,070	326,906			
359.20	90,590	335,939			
359.30	91,110	345,024			
359.40	91,630	354,161			
359.50	92,150	363,350			
359.60	92,670	372,591			
359.70	93,190	381,884			
359.80	93,710	391,229			
359.90	94,230	400,626			
360.00	94,750	410,075			
360.10	95,289	419,577			
360.20	95,828	429,133			

Summary for Pond SCM-2: MRC RAIN GARDEN

Inflow Area = 331,150 sf, 86.64% Impervious, Inflow Depth = 0.90" for $\frac{1.2}{2}$ -hr event
 Inflow = 19.68 cfs @ 1.10 hrs, Volume= 24,743 cf
 Outflow = 0.06 cfs @ 2.13 hrs, Volume= 23,438 cf, Atten= 100%, Lag= 61.9 min
 Primary = 0.06 cfs @ 2.13 hrs, Volume= 23,438 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Peak Elev= 360.62' @ 2.13 hrs Surf.Area= 32,744 sf Storage= 24,487 cf

Plug-Flow detention time= 3,665.1 min calculated for 23,438 cf (95% of inflow)

Center-of-Mass det. time= 3,662.7 min (3,732.1 - 69.4)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,275 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 8,500 cf Overall x 15.0% Voids
#2	357.00'	5,100 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 17,000 cf Overall x 30.0% Voids
#3	359.00'	67,575 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		73,950 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	8,500	0	0
357.00	8,500	8,500	8,500

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	8,500	0	0	8,500
358.00	8,500	8,500	8,500	8,869
359.00	8,500	8,500	17,000	9,238

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	8,500	0	0
360.00	11,100	9,800	9,800
361.00	18,600	14,850	24,650
362.00	21,625	20,113	44,763
363.00	24,000	22,813	67,575

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.06 cfs @ 2.13 hrs HW=360.62' TW=355.14' (Dynamic Tailwater)

1=Outflow Pipe (Passes 0.06 cfs of 58.88 cfs potential flow)

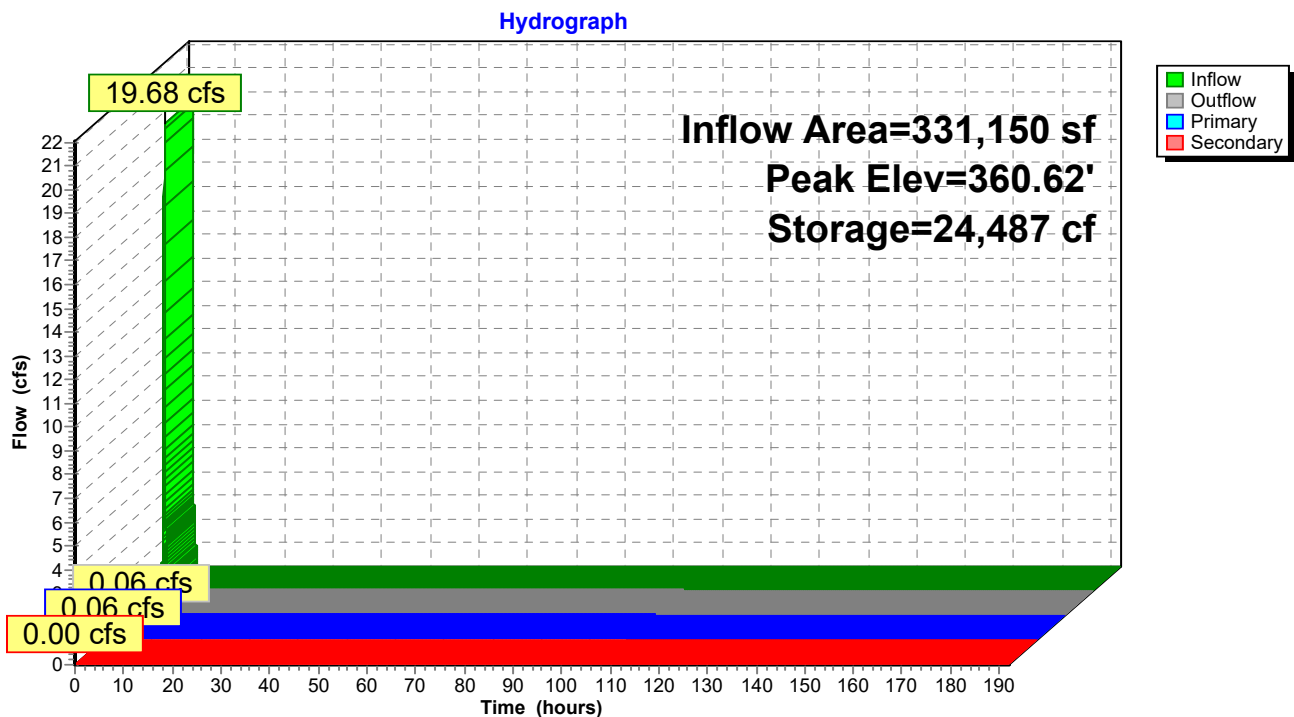
2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 9.10 fps)

3=Type M Overflow (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-2: MRC RAIN GARDEN



2025-1201 SCS*NJ DEP 2-hr _1.2"/2-hr Rainfall=1.25"*

Prepared by S. Deisher, P.E. of JMR Engineering, LLC

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Stage-Area-Storage for Pond SCM-2: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	36,741
356.10	128	361.40	38,707
356.20	255	361.50	40,703
356.30	383	361.60	42,730
356.40	510	361.70	44,786
356.50	638	361.80	46,873
356.60	765	361.90	48,990
356.70	892	362.00	51,138
356.80	1,020	362.10	53,312
356.90	1,147	362.20	55,510
357.00	1,275	362.30	57,732
357.10	1,530	362.40	59,977
357.20	1,785	362.50	62,247
357.30	2,040	362.60	64,540
357.40	2,295	362.70	66,857
357.50	2,550	362.80	69,198
357.60	2,805	362.90	71,562
357.70	3,060	363.00	73,950
357.80	3,315		
357.90	3,570		
358.00	3,825		
358.10	4,080		
358.20	4,335		
358.30	4,590		
358.40	4,845		
358.50	5,100		
358.60	5,355		
358.70	5,610		
358.80	5,865		
358.90	6,120		
359.00	6,375		
359.10	7,238		
359.20	8,127		
359.30	9,042		
359.40	9,983		
359.50	10,950		
359.60	11,943		
359.70	12,962		
359.80	14,007		
359.90	15,078		
360.00	16,175		
360.10	17,323		
360.20	18,545		
360.30	19,843		
360.40	21,215		
360.50	22,663		
360.60	24,185		
360.70	25,782		
360.80	27,455		
360.90	29,202		
361.00	31,025		
361.10	32,900		
361.20	34,805		

Summary for Pond SCM-3: MRC RAIN GARDEN

Inflow Area = 335,813 sf, 66.22% Impervious, Inflow Depth = 0.74" for $_1.2"/2\text{-hr event}$
 Inflow = 16.46 cfs @ 1.10 hrs, Volume= 20,583 cf
 Outflow = 0.05 cfs @ 2.13 hrs, Volume= 18,917 cf, Atten= 100%, Lag= 61.6 min
 Primary = 0.05 cfs @ 2.13 hrs, Volume= 18,917 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Peak Elev= 359.92' @ 2.13 hrs Surf.Area= 37,465 sf Storage= 20,363 cf

Plug-Flow detention time= 3,328.9 min calculated for 18,917 cf (92% of inflow)

Center-of-Mass det. time= 3,325.5 min (3,395.5 - 70.0)

Volume	Invert	Avail.Storage	Storage Description
#1	356.00'	1,628 cf	Filter Media Below Invert (Prismatic) Listed below (Recalc) 10,850 cf Overall x 15.0% Voids
#2	357.00'	6,510 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 21,700 cf Overall x 30.0% Voids
#3	359.00'	80,725 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		88,863 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
356.00	10,850	0	0
357.00	10,850	10,850	10,850

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
357.00	10,850	0	0	10,850
358.00	10,850	10,850	10,850	11,267
359.00	10,850	10,850	21,700	11,683

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
359.00	10,850	0	0
360.00	16,200	13,525	13,525
361.00	20,900	18,550	32,075
362.00	24,600	22,750	54,825
363.00	27,200	25,900	80,725

Device	Routing	Invert	Outlet Devices
#1	Primary	356.00'	36.0" Round Outflow Pipe L= 26.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 356.00' / 355.80' S= 0.0077 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	357.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	361.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	362.00'	40.0' long x 13.0' breadth Emergency Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.05 cfs @ 2.13 hrs HW=359.92' TW=355.14' (Dynamic Tailwater)

1=Outflow Pipe (Passes 0.05 cfs of 47.48 cfs potential flow)

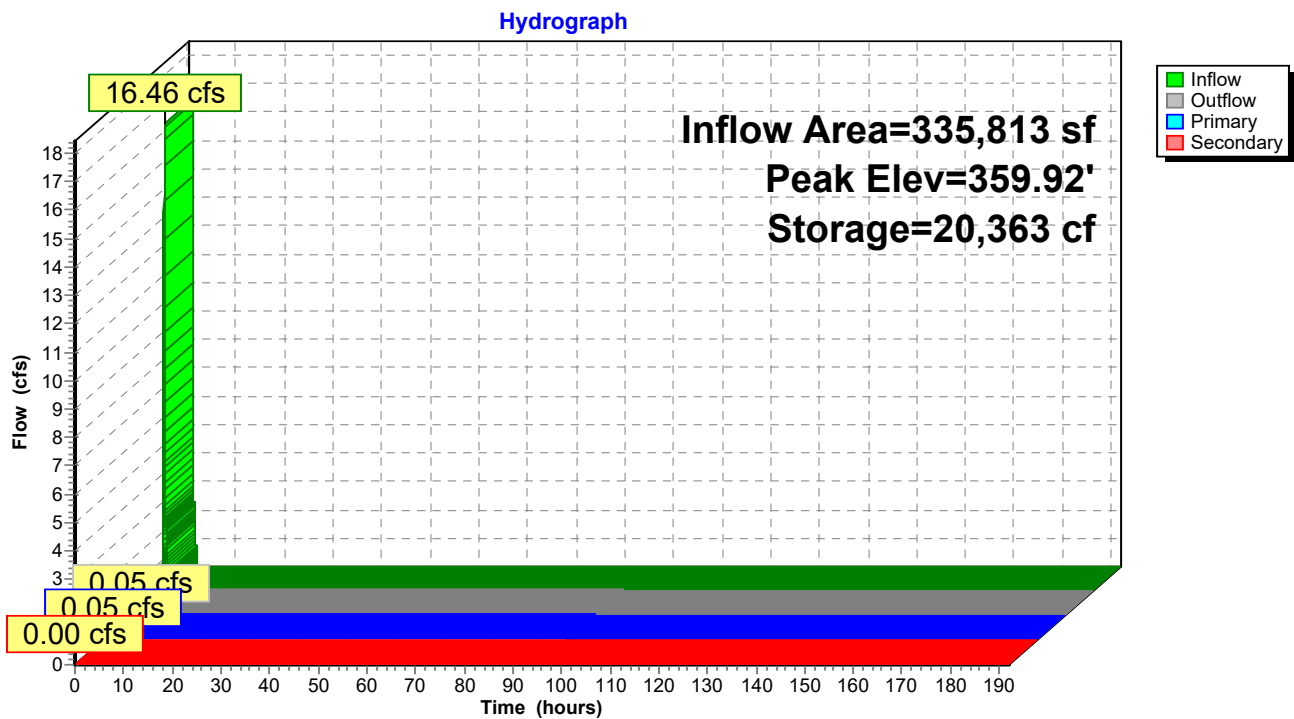
2=MRC Low Flow Orifice (Orifice Controls 0.05 cfs @ 8.16 fps)

3=Type M Overflow (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=356.00' TW=355.00' (Dynamic Tailwater)

4=Emergency Spillway (Controls 0.00 cfs)

Pond SCM-3: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-3: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
356.00	0	361.30	46,649
356.10	163	361.40	48,868
356.20	325	361.50	51,125
356.30	488	361.60	53,419
356.40	651	361.70	55,749
356.50	814	361.80	58,117
356.60	977	361.90	60,521
356.70	1,139	362.00	62,963
356.80	1,302	362.10	65,436
356.90	1,465	362.20	67,934
357.00	1,628	362.30	70,460
357.10	1,953	362.40	73,010
357.20	2,278	362.50	75,588
357.30	2,604	362.60	78,191
357.40	2,929	362.70	80,819
357.50	3,255	362.80	83,475
357.60	3,581	362.90	86,155
357.70	3,906	363.00	88,863
357.80	4,232		
357.90	4,557		
358.00	4,883		
358.10	5,208		
358.20	5,533		
358.30	5,859		
358.40	6,184		
358.50	6,510		
358.60	6,836		
358.70	7,161		
358.80	7,487		
358.90	7,812		
359.00	8,138		
359.10	9,249		
359.20	10,414		
359.30	11,633		
359.40	12,905		
359.50	14,231		
359.60	15,611		
359.70	17,043		
359.80	18,530		
359.90	20,069		
360.00	21,663		
360.10	23,306		
360.20	24,996		
360.30	26,734		
360.40	28,518		
360.50	30,350		
360.60	32,229		
360.70	34,154		
360.80	36,127		
360.90	38,146		
361.00	40,213		
361.10	42,321		
361.20	44,466		

Summary for Pond SCM-4: MRC RAIN GARDEN

Inflow Area = 495,667 sf, 73.21% Impervious, Inflow Depth = 0.79" for _1.2"/2-hr event
 Inflow = 26.19 cfs @ 1.10 hrs, Volume= 32,818 cf
 Outflow = 0.06 cfs @ 2.14 hrs, Volume= 29,933 cf, Atten= 100%, Lag= 62.5 min
 Primary = 0.06 cfs @ 2.14 hrs, Volume= 29,933 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 372.38' @ 2.14 hrs Surf.Area= 47,702 sf Storage= 32,574 cf

Plug-Flow detention time= 4,816.5 min calculated for 29,931 cf (91% of inflow)
 Center-of-Mass det. time= 4,813.2 min (4,883.0 - 69.8)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

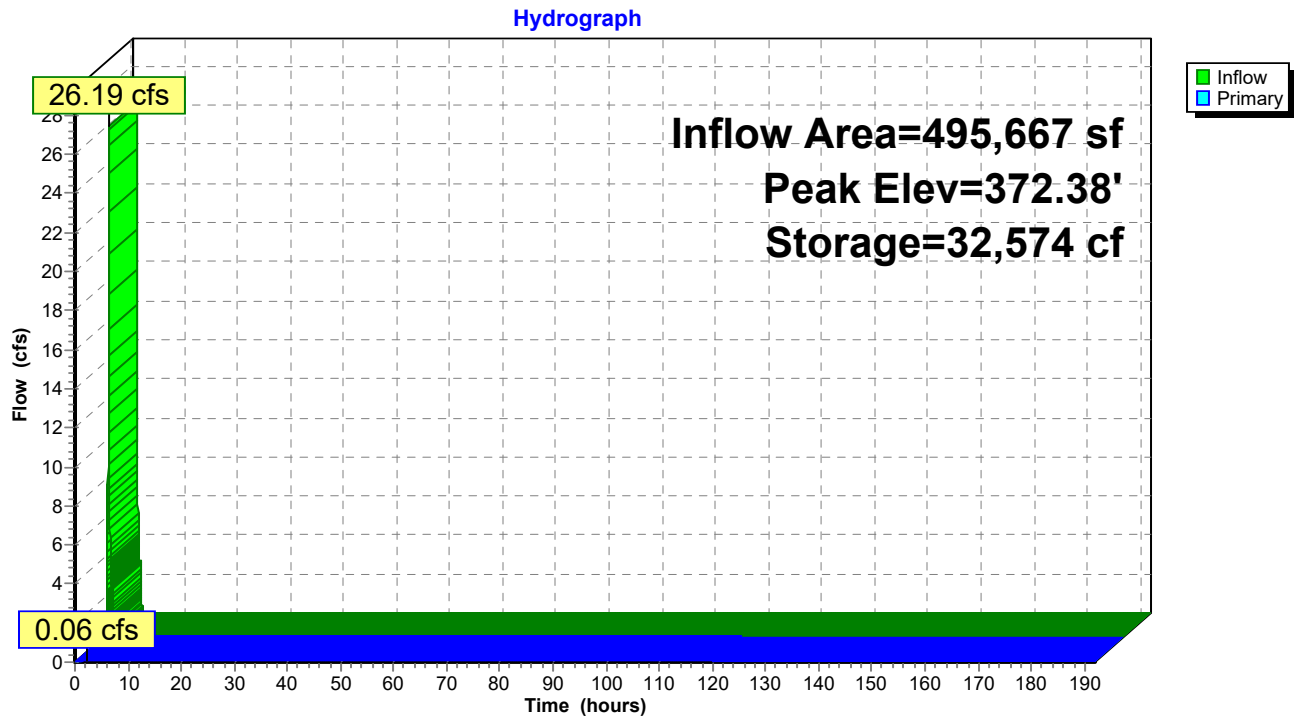
Primary OutFlow Max=0.06 cfs @ 2.14 hrs HW=372.38' TW=355.14' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 0.06 cfs of 50.27 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.06 cfs @ 8.80 fps)

3=Type M Overflow (Controls 0.00 cfs)

Pond SCM-4: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-4: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-5: MRC RAIN GARDEN

Inflow Area = 573,669 sf, 42.10% Impervious, Inflow Depth = 0.50" for _1.2"/2-hr event
 Inflow = 19.01 cfs @ 1.10 hrs, Volume= 23,670 cf
 Outflow = 0.05 cfs @ 2.13 hrs, Volume= 21,574 cf, Atten= 100%, Lag= 61.9 min
 Primary = 0.05 cfs @ 2.13 hrs, Volume= 21,574 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs
 Peak Elev= 371.89' @ 2.13 hrs Surf.Area= 43,444 sf Storage= 23,453 cf

Plug-Flow detention time= 3,843.7 min calculated for 21,574 cf (91% of inflow)
 Center-of-Mass det. time= 3,840.1 min (3,910.5 - 70.5)

Volume	Invert	Avail.Storage	Storage Description
#1	368.00'	2,003 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 13,350 cf Overall x 15.0% Voids
#2	369.00'	8,010 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 26,700 cf Overall x 30.0% Voids
#3	371.00'	100,375 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		110,388 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
368.00	13,350	0	0	13,350
369.00	13,350	13,350	13,350	13,812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
369.00	13,350	0	0	13,350
370.00	13,350	13,350	13,350	13,812
371.00	13,350	13,350	26,700	14,274

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	13,350	0	0
372.00	17,150	15,250	15,250
373.00	27,200	22,175	37,425
374.00	31,600	29,400	66,825
375.00	35,500	33,550	100,375

Device	Routing	Invert	Outlet Devices
#1	Primary	368.70'	36.0" Round 24" Outflow Pipe L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 368.00' / 368.70' S= -0.0194 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Device 1	369.00'	1.1" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	373.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads

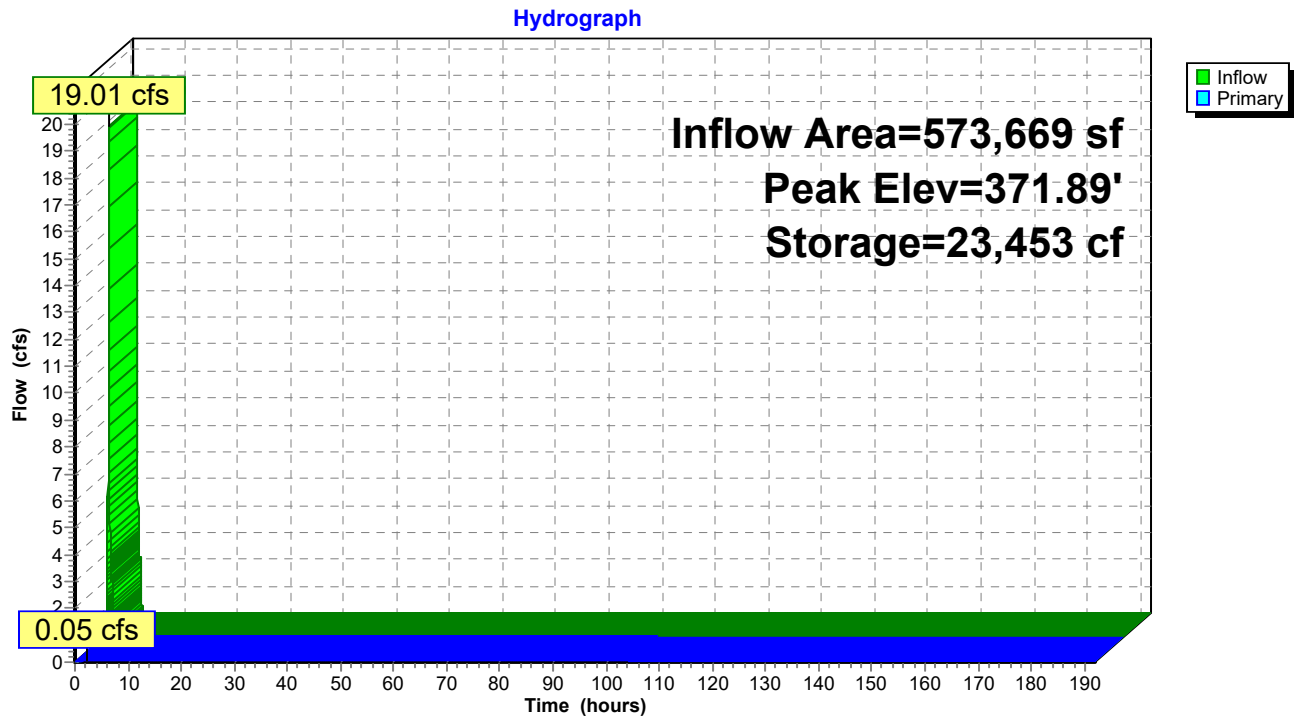
Primary OutFlow Max=0.05 cfs @ 2.13 hrs HW=371.89' TW=355.14' (Dynamic Tailwater)

1=24" Outflow Pipe (Passes 0.05 cfs of 42.26 cfs potential flow)

2=MRC Low Flow Orifice (Orifice Controls 0.05 cfs @ 8.12 fps)

3=Type M Overflow (Controls 0.00 cfs)

Pond SCM-5: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-5: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
368.00	0	373.30	55,796
368.10	200	373.40	58,669
368.20	400	373.50	61,588
368.30	601	373.60	64,550
368.40	801	373.70	67,555
368.50	1,001	373.80	70,606
368.60	1,202	373.90	73,699
368.70	1,402	374.00	76,838
368.80	1,602	374.10	80,017
368.90	1,802	374.20	83,235
369.00	2,003	374.30	86,493
369.10	2,403	374.40	89,789
369.20	2,803	374.50	93,125
369.30	3,204	374.60	96,500
369.40	3,604	374.70	99,913
369.50	4,005	374.80	103,366
369.60	4,406	374.90	106,857
369.70	4,806	375.00	110,388
369.80	5,207		
369.90	5,607		
370.00	6,008		
370.10	6,408		
370.20	6,808		
370.30	7,209		
370.40	7,609		
370.50	8,010		
370.60	8,411		
370.70	8,811		
370.80	9,212		
370.90	9,612		
371.00	10,013		
371.10	11,367		
371.20	12,758		
371.30	14,189		
371.40	15,656		
371.50	17,163		
371.60	18,707		
371.70	20,288		
371.80	21,909		
371.90	23,566		
372.00	25,263		
372.10	27,028		
372.20	28,893		
372.30	30,860		
372.40	32,926		
372.50	35,094		
372.60	37,362		
372.70	39,730		
372.80	42,199		
372.90	44,768		
373.00	47,438		
373.10	50,180		
373.20	52,965		

Summary for Pond SCM-6: MRC RAIN GARDEN

Inflow Area = 772,610 sf, 14.09% Impervious, Inflow Depth = 0.18" for $_1.2"/2\text{-hr event}$
 Inflow = 9.16 cfs @ 1.11 hrs, Volume= 11,327 cf
 Outflow = 0.04 cfs @ 2.12 hrs, Volume= 10,405 cf, Atten= 100%, Lag= 60.7 min
 Primary = 0.04 cfs @ 2.12 hrs, Volume= 10,405 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Peak Elev= 366.95' @ 2.12 hrs Surf.Area= 20,002 sf Storage= 11,149 cf

Plug-Flow detention time= 2,219.8 min calculated for 10,405 cf (92% of inflow)

Center-of-Mass det. time= 2,216.5 min (2,287.4 - 71.0)

Volume	Invert	Avail.Storage	Storage Description
#1	363.00'	915 cf	Filter Media Below Invert (Pyramidal) Listed below (Recalc) 6,100 cf Overall x 15.0% Voids
#2	364.00'	3,660 cf	Filter Media Above Invert (Pyramidal) Listed below (Recalc) 12,200 cf Overall x 30.0% Voids
#3	366.00'	43,750 cf	Above Ground Storage (Prismatic) Listed below (Recalc)
		48,325 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
363.00	6,100	0	0	6,100
364.00	6,100	6,100	6,100	6,412

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
364.00	6,100	0	0	6,100
365.00	6,100	6,100	6,100	6,412
366.00	6,100	6,100	12,200	6,725

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
366.00	6,100	0	0
367.00	7,900	7,000	7,000
368.00	10,800	9,350	16,350
369.00	13,800	12,300	28,650
370.00	16,400	15,100	43,750

Device	Routing	Invert	Outlet Devices
#1	Primary	363.00'	15.0" Round Outflow Pipe L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 363.00' / 362.70' S= 0.0100 ' / ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	364.00'	1.0" Vert. MRC Low Flow Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	368.00'	24.0" x 45.0" Horiz. Type M Overflow C= 0.600 Limited to weir flow at low heads
#4	Secondary	369.00'	50.0' long x 13.0' breadth Spillway

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
 Coef. (English) 2.60 2.64 2.70 2.66 2.65 2.66 2.65 2.63

Primary OutFlow Max=0.04 cfs @ 2.12 hrs HW=366.95' TW=355.14' (Dynamic Tailwater)

1=Outflow Pipe (Passes 0.04 cfs of 10.77 cfs potential flow)

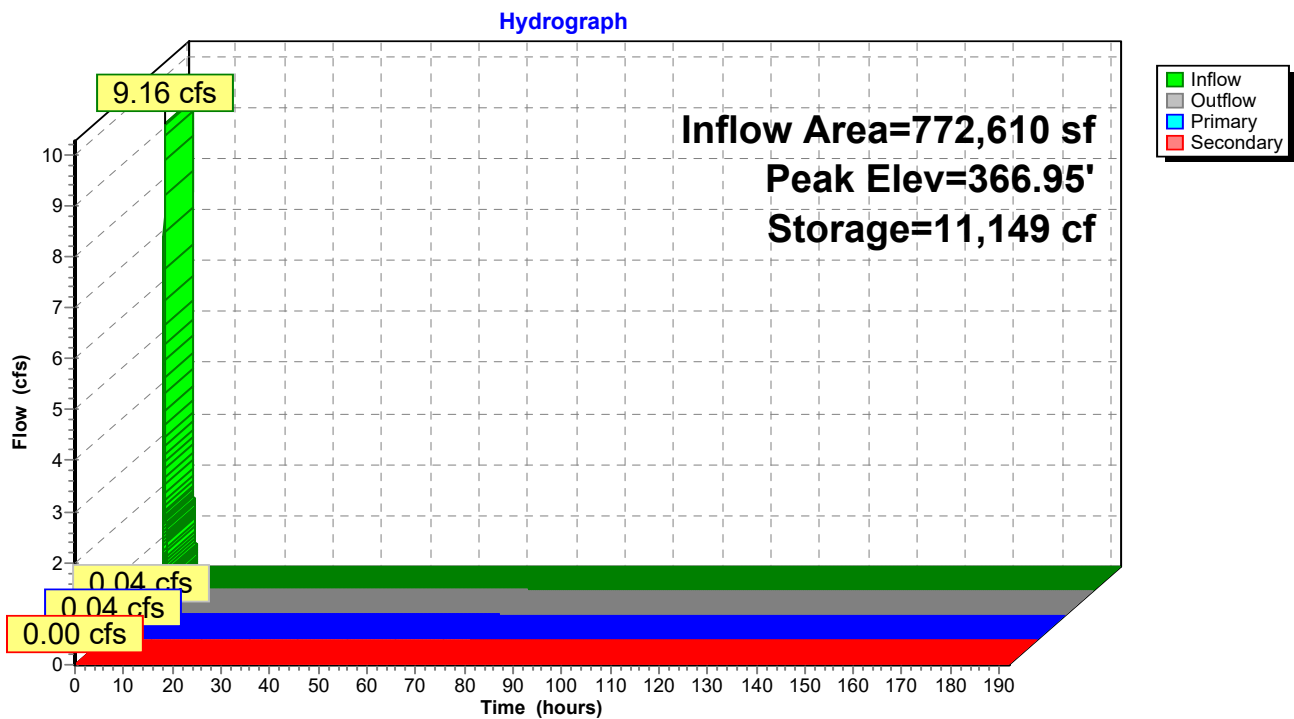
2=MRC Low Flow Orifice (Orifice Controls 0.04 cfs @ 8.21 fps)

3=Type M Overflow (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=363.00' TW=355.00' (Dynamic Tailwater)

4=Spillway (Controls 0.00 cfs)

Pond SCM-6: MRC RAIN GARDEN



Stage-Area-Storage for Pond SCM-6: MRC RAIN GARDEN

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
363.00	0	368.30	24,300
363.10	92	368.40	25,485
363.20	183	368.50	26,700
363.30	275	368.60	27,945
363.40	366	368.70	29,220
363.50	458	368.80	30,525
363.60	549	368.90	31,860
363.70	640	369.00	33,225
363.80	732	369.10	34,618
363.90	823	369.20	36,037
364.00	915	369.30	37,482
364.10	1,098	369.40	38,953
364.20	1,281	369.50	40,450
364.30	1,464	369.60	41,973
364.40	1,647	369.70	43,522
364.50	1,830	369.80	45,097
364.60	2,013	369.90	46,698
364.70	2,196	370.00	48,325
364.80	2,379		
364.90	2,562		
365.00	2,745		
365.10	2,928		
365.20	3,111		
365.30	3,294		
365.40	3,477		
365.50	3,660		
365.60	3,843		
365.70	4,026		
365.80	4,209		
365.90	4,392		
366.00	4,575		
366.10	5,194		
366.20	5,831		
366.30	6,486		
366.40	7,159		
366.50	7,850		
366.60	8,559		
366.70	9,286		
366.80	10,031		
366.90	10,794		
367.00	11,575		
367.10	12,380		
367.20	13,213		
367.30	14,076		
367.40	14,967		
367.50	15,888		
367.60	16,837		
367.70	17,815		
367.80	18,823		
367.90	19,859		
368.00	20,925		
368.10	22,020		
368.20	23,145		

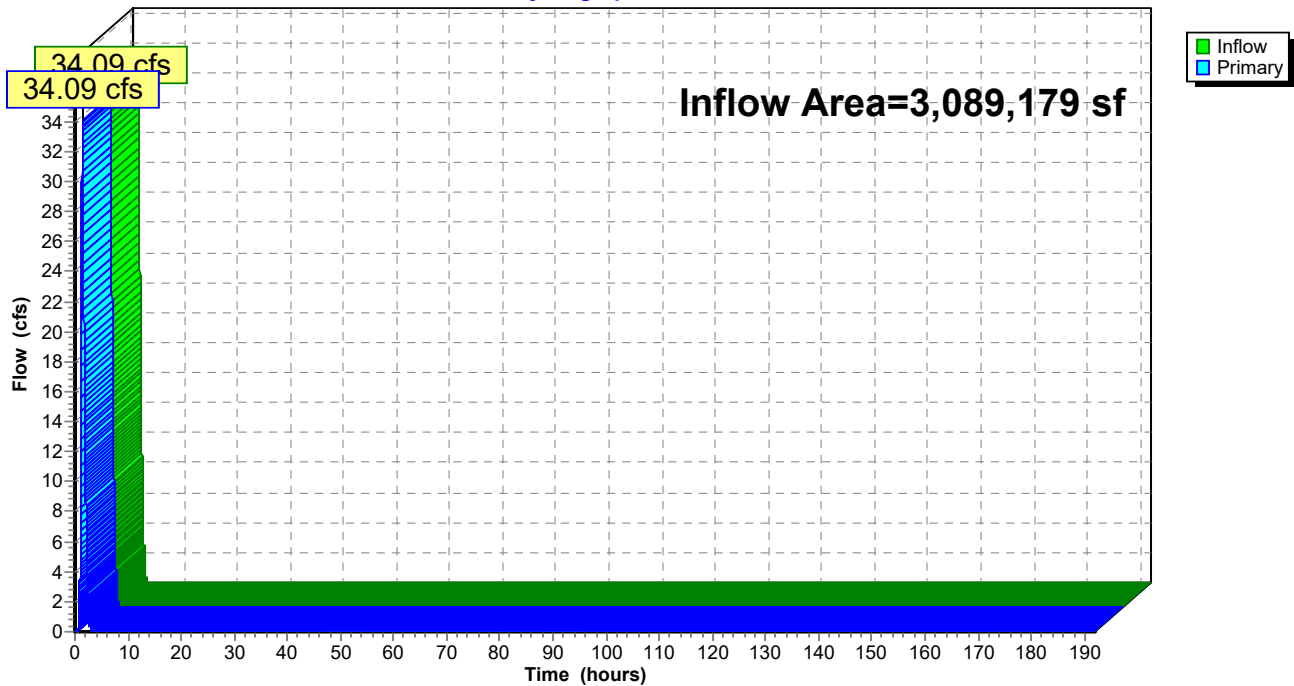
Summary for Link 001A: POA

Inflow Area = 3,089,179 sf, 33.31% Impervious, Inflow Depth = 0.34" for $\frac{1.2}{2}$ -hr event
Inflow = 34.09 cfs @ 1.41 hrs, Volume= 88,705 cf
Primary = 34.09 cfs @ 1.41 hrs, Volume= 88,705 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 001A: POA

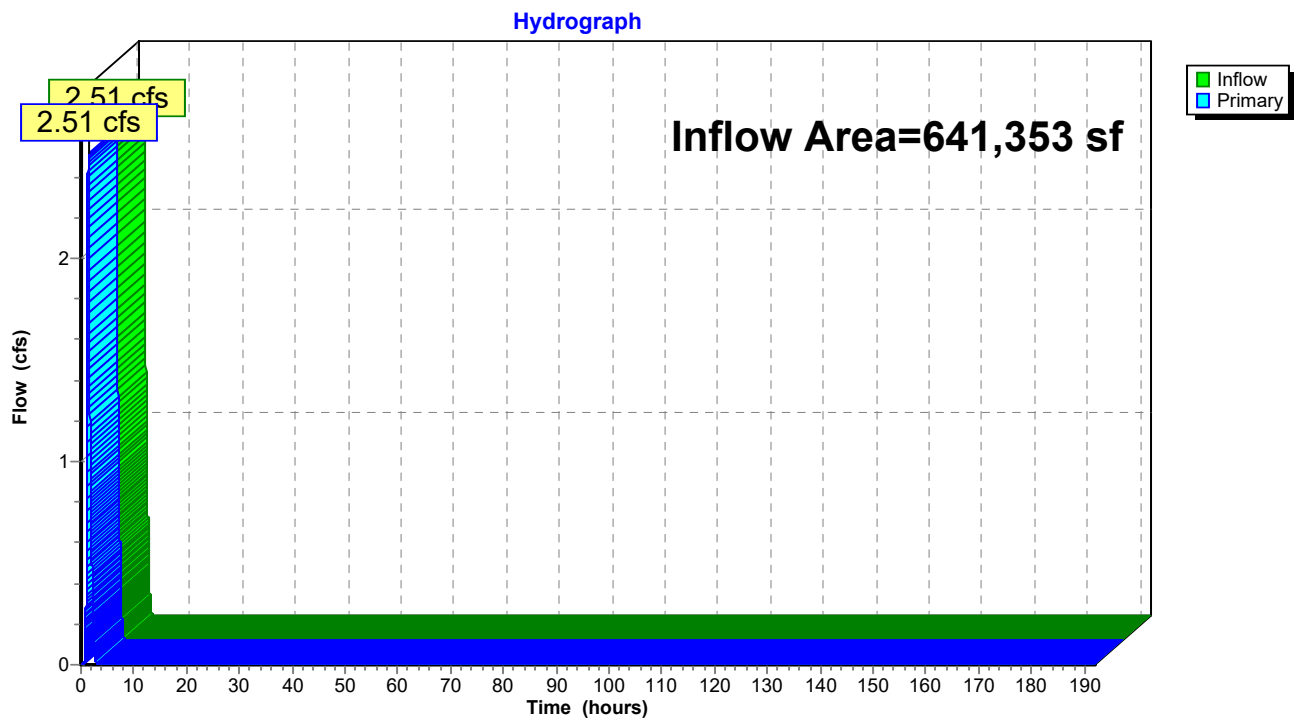
Hydrograph



Summary for Link 2: TOTAL OFFSITE

Inflow Area = 641,353 sf, 10.95% Impervious, Inflow Depth = 0.11" for $\frac{1.2}{2}$ -hr event
Inflow = 2.51 cfs @ 1.37 hrs, Volume= 6,054 cf
Primary = 2.51 cfs @ 1.37 hrs, Volume= 6,054 cf, Atten= 0%, Lag= 0.0 min

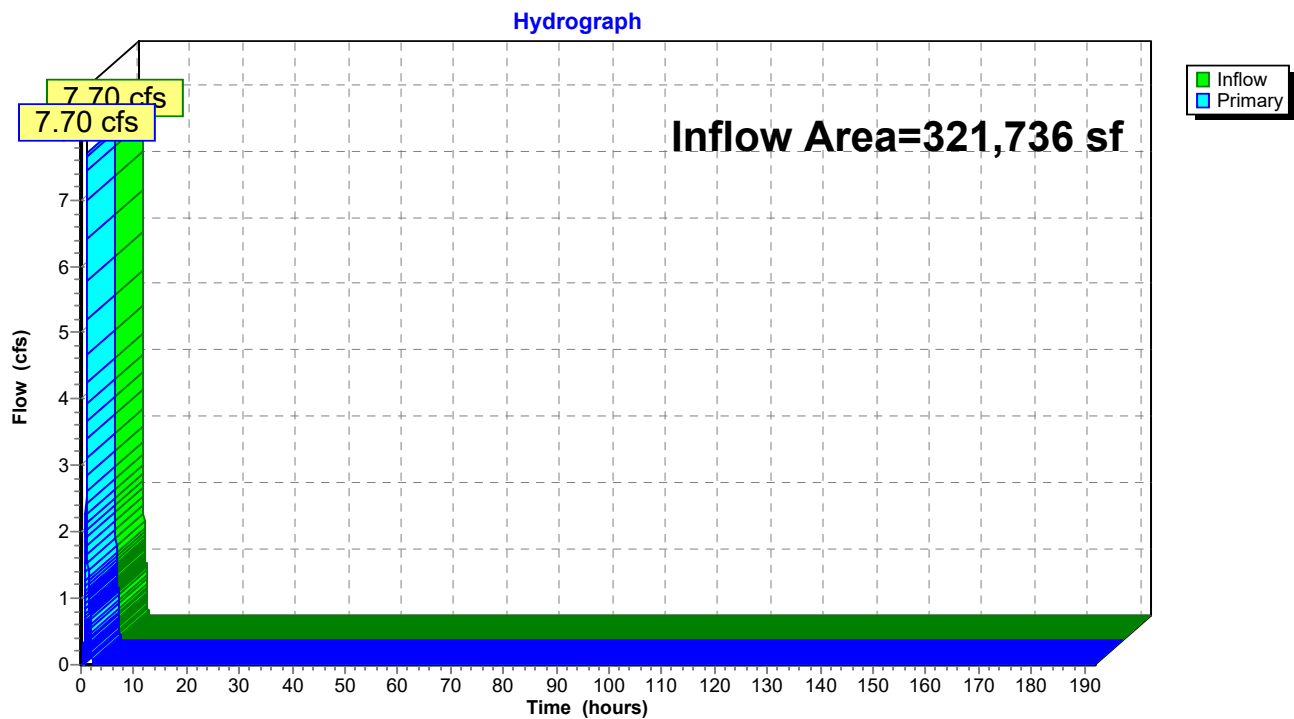
Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 2: TOTAL OFFSITE

Summary for Link 3: LOD to SCM-01

Inflow Area = 321,736 sf, 32.59% Impervious, Inflow Depth = 0.36" for $\frac{1.2}{2}$ -hr event
Inflow = 7.70 cfs @ 1.10 hrs, Volume= 9,638 cf
Primary = 7.70 cfs @ 1.10 hrs, Volume= 9,638 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link 3: LOD to SCM-01

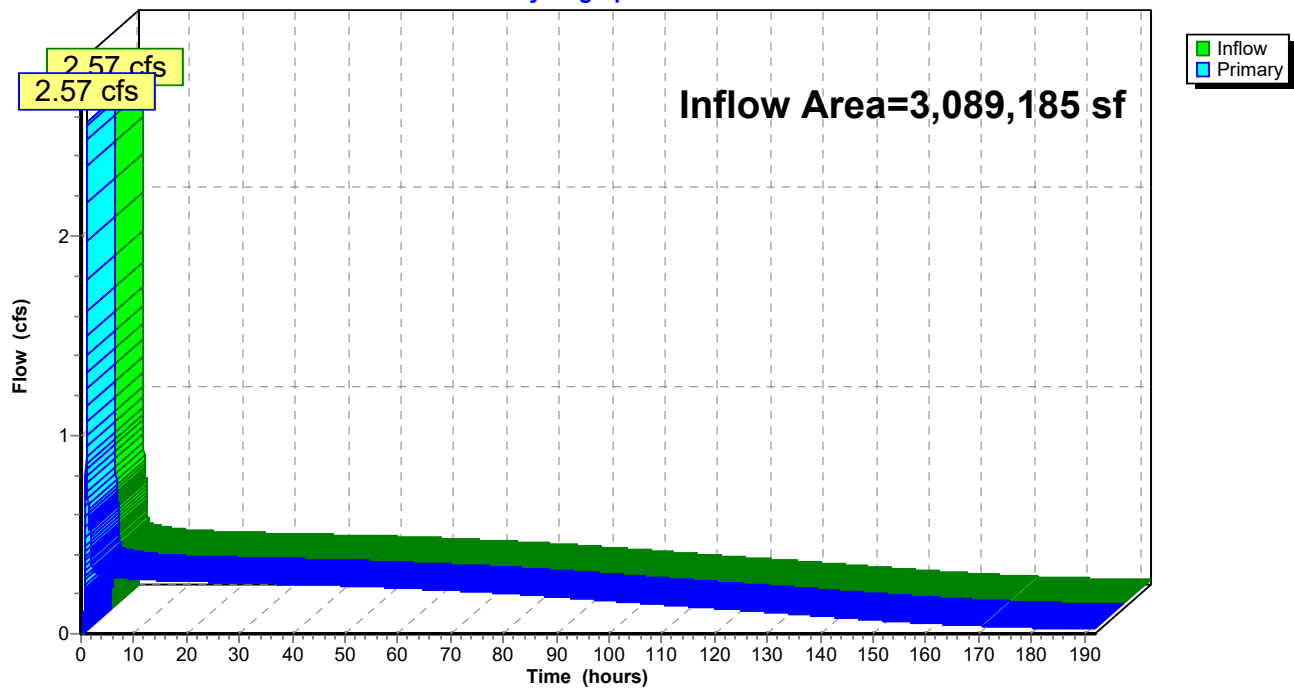
Summary for Link POA-01: POA

Inflow Area = 3,089,185 sf, 44.15% Impervious, Inflow Depth > 0.44" for $\frac{1.2}{2}$ -hr event
Inflow = 2.57 cfs @ 1.10 hrs, Volume= 114,469 cf
Primary = 2.57 cfs @ 1.10 hrs, Volume= 114,469 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-192.00 hrs, dt= 0.01 hrs

Link POA-01: POA

Hydrograph



Events for Subcatchment B1: BYPASS (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	1.34	4,037	0.32
2-yr	3.24	2.80	6,741	0.54
5-yr	4.06	5.49	11,706	0.93
10-yr	4.75	8.09	16,568	1.32
25-yr	5.73	12.16	24,304	1.94
50-yr	6.56	15.88	31,453	2.51
100-yr	7.45	20.06	39,598	3.16
_1.2"/2-hr	1.25	0.31	393	0.03

Events for Subcatchment B2: BYPASS (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	2.54	5,810	2.38
2-yr	3.24	3.08	7,116	2.92
5-yr	4.06	3.89	9,073	3.72
10-yr	4.75	4.57	10,725	4.40
25-yr	5.73	5.54	13,079	5.37
50-yr	6.56	6.36	15,077	6.19
100-yr	7.45	7.24	17,224	7.07
_1.2"/2-hr	1.25	1.94	2,435	1.00

Events for Subcatchment B3: BYPASS (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	0.54	1,683	0.28
2-yr	3.24	1.23	2,953	0.49
5-yr	4.06	2.52	5,308	0.87
10-yr	4.75	3.77	7,629	1.25
25-yr	5.73	5.73	11,337	1.86
50-yr	6.56	7.53	14,774	2.43
100-yr	7.45	9.55	18,697	3.07
_1.2"/2-hr	1.25	0.05	61	0.01

Events for Subcatchment B4: BYPASS (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	0.28	672	1.40
2-yr	3.24	0.37	856	1.78
5-yr	4.06	0.50	1,149	2.39
10-yr	4.75	0.62	1,408	2.93
25-yr	5.73	0.79	1,792	3.73
50-yr	6.56	0.94	2,128	4.43
100-yr	7.45	1.11	2,498	5.20
_1.2"/2-hr	1.25	0.21	258	0.54

Events for Subcatchment E1: PRE (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	42.45	219,059	1.07
2-yr	3.24	54.62	284,356	1.39
5-yr	4.06	76.28	391,482	1.92
10-yr	4.75	96.91	488,899	2.40
25-yr	5.73	128.76	636,200	3.12
50-yr	6.56	157.33	767,495	3.76
100-yr	7.45	189.18	913,583	4.48
_1.2"/2-hr	1.25	31.62	82,651	0.41

Events for Subcatchment E2: PRE (OLOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	0.28	2,529	0.26
2-yr	3.24	0.69	4,563	0.46
5-yr	4.06	1.57	8,355	0.84
10-yr	4.75	2.48	12,105	1.22
25-yr	5.73	3.95	18,106	1.83
50-yr	6.56	5.31	23,675	2.39
100-yr	7.45	6.85	30,037	3.03
_1.2"/2-hr	1.25	0.00	0	0.00

Events for Subcatchment E3: PRE (OLOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	4.19	24,010	0.55
2-yr	3.24	6.55	34,949	0.80
5-yr	4.06	11.11	54,156	1.24
10-yr	4.75	15.61	72,444	1.66
25-yr	5.73	22.70	100,991	2.32
50-yr	6.56	29.16	127,023	2.92
100-yr	7.45	36.48	156,420	3.59
_1.2"/2-hr	1.25	2.51	6,054	0.14

Events for Subcatchment P1A: POST TO SCM-1 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	3.24	8,423	0.45
2-yr	3.24	5.69	13,011	0.69
5-yr	4.06	10.01	21,154	1.13
10-yr	4.75	14.09	28,953	1.54
25-yr	5.73	20.39	41,170	2.19
50-yr	6.56	26.07	52,336	2.79
100-yr	7.45	32.43	64,960	3.46
_1.2"/2-hr	1.25	1.09	1,306	0.07

Events for Subcatchment P1B: POST TO SCM-1 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	8.67	19,809	2.46
2-yr	3.24	10.49	24,219	3.01
5-yr	4.06	13.20	30,804	3.82
10-yr	4.75	15.47	36,349	4.51
25-yr	5.73	18.70	44,230	5.49
50-yr	6.56	21.43	50,908	6.32
100-yr	7.45	24.35	58,069	7.21
_1.2"/2-hr	1.25	6.63	8,332	1.03

Events for Subcatchment P1C: POST TO SCM-1 (oLOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	8.89	24,010	0.55
2-yr	3.24	14.57	34,949	0.80
5-yr	4.06	24.53	54,156	1.24
10-yr	4.75	33.92	72,444	1.66
25-yr	5.73	48.43	100,991	2.32
50-yr	6.56	61.54	127,023	2.92
100-yr	7.45	76.20	156,420	3.59
_1.2"/2-hr	1.25	4.82	6,054	0.14

Events for Subcatchment P1D: POST TO SCM-5 (oLOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	0.80	2,529	0.26
2-yr	3.24	1.91	4,563	0.46
5-yr	4.06	3.98	8,355	0.84
10-yr	4.75	6.01	12,105	1.22
25-yr	5.73	9.20	18,106	1.83
50-yr	6.56	12.12	23,675	2.39
100-yr	7.45	15.42	30,037	3.03
_1.2"/2-hr	1.25	0.00	0	0.00

Events for Subcatchment P2: POST TO SCM-2 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	25.97	59,774	2.17
2-yr	3.24	31.81	73,630	2.67
5-yr	4.06	40.63	94,597	3.43
10-yr	4.75	48.14	112,462	4.08
25-yr	5.73	58.91	138,098	5.00
50-yr	6.56	68.09	159,999	5.80
100-yr	7.45	78.00	183,632	6.65
_1.2"/2-hr	1.25	19.68	24,743	0.90

Events for Subcatchment P3: POST TO SCM-3 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	23.41	53,020	1.89
2-yr	3.24	29.21	66,299	2.37
5-yr	4.06	38.08	86,642	3.10
10-yr	4.75	45.68	104,138	3.72
25-yr	5.73	56.61	129,421	4.62
50-yr	6.56	65.96	151,139	5.40
100-yr	7.45	76.06	174,662	6.24
_1.2"/2-hr	1.25	16.46	20,583	0.74

Events for Subcatchment P4: Post to SCM-04 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	36.36	82,664	2.00
2-yr	3.24	45.04	102,788	2.49
5-yr	4.06	58.24	133,457	3.23
10-yr	4.75	69.51	159,725	3.87
25-yr	5.73	85.69	197,566	4.78
50-yr	6.56	99.51	229,986	5.57
100-yr	7.45	114.41	265,041	6.42
_1.2"/2-hr	1.25	26.19	32,818	0.79

Events for Subcatchment P5: Post to SCM-05 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	28.57	64,182	1.69
2-yr	3.24	36.23	81,254	2.14
5-yr	4.06	48.05	107,686	2.84
10-yr	4.75	58.23	130,605	3.45
25-yr	5.73	72.95	163,936	4.33
50-yr	6.56	85.59	192,708	5.09
100-yr	7.45	99.27	223,981	5.91
_1.2"/2-hr	1.25	19.01	23,670	0.62

Events for Subcatchment P6: Post to SCM-05 (LOD)

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-yr	2.69	8.56	19,335	0.93
2-yr	3.24	12.05	26,354	1.26
5-yr	4.06	17.74	37,898	1.82
10-yr	4.75	22.85	48,378	2.32
25-yr	5.73	30.47	64,164	3.08
50-yr	6.56	37.15	78,172	3.75
100-yr	7.45	44.50	93,693	4.49
_1.2"/2-hr	1.25	4.37	5,274	0.25

Events for Pond SCM-1: WET POND

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	12.05	3.56	355.60	42,564
2-yr	37.97	6.22	356.23	89,012
5-yr	98.50	12.03	357.24	168,478
10-yr	176.80	27.88	357.79	213,036
25-yr	258.89	58.53	358.51	274,369
50-yr	315.11	89.40	359.09	326,133
100-yr	377.89	121.26	359.64	376,615
_1.2"/2-hr	7.93	0.31	355.14	9,781

Events for Pond SCM-2: MRC RAIN GARDEN

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	25.97	4.48	4.48	0.00	361.24	35,571
2-yr	31.81	12.68	12.68	0.00	361.48	40,356
5-yr	40.63	24.70	24.70	0.00	361.75	45,914
10-yr	48.14	33.34	33.34	0.00	361.92	49,450
25-yr	58.91	42.71	38.31	4.40	362.12	53,779
50-yr	68.09	52.75	40.32	12.43	362.24	56,443
100-yr	78.00	63.51	41.98	21.53	362.35	58,791
_1.2"/2-hr	19.68	0.06	0.06	0.00	360.62	24,487

Events for Pond SCM-3: MRC RAIN GARDEN

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	23.41	0.50	0.50	0.00	361.05	41,297
2-yr	29.21	1.87	1.87	0.00	361.13	43,008
5-yr	38.08	9.75	9.75	0.00	361.40	48,973
10-yr	45.68	19.99	19.99	0.00	361.65	54,689
25-yr	56.61	33.89	33.89	0.00	361.93	61,292
50-yr	65.96	43.20	38.43	4.77	362.13	66,138
100-yr	76.06	56.15	40.88	15.27	362.28	69,882
_1.2"/2-hr	16.46	0.05	0.05	0.00	359.92	20,363

Events for Pond SCM-4: MRC RAIN GARDEN

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	36.36	2.89	373.18	52,347
2-yr	45.04	10.10	373.41	59,089
5-yr	58.24	25.61	373.77	69,770
10-yr	69.51	36.49	374.02	77,369
25-yr	85.69	42.40	374.37	88,913
50-yr	99.51	46.57	374.66	98,461
100-yr	114.41	50.37	374.94	108,252
_1.2"/2-hr	26.19	0.06	372.38	32,574

Events for Pond SCM-5: MRC RAIN GARDEN

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	29.20	0.76	373.07	49,358
2-yr	38.00	2.80	373.17	52,244
5-yr	51.92	13.12	373.49	61,408
10-yr	64.14	26.29	373.79	70,185
25-yr	82.07	39.03	374.16	82,076
50-yr	97.63	44.36	374.50	93,247
100-yr	114.61	49.30	374.86	105,396
_1.2"/2-hr	19.01	0.05	371.89	23,453

Events for Pond SCM-6: MRC RAIN GARDEN

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	17.42	1.65	1.65	0.00	368.12	22,264
2-yr	26.59	8.94	8.94	0.00	368.38	25,272
5-yr	42.24	16.78	13.80	2.98	369.08	34,347
10-yr	56.75	43.19	14.16	29.03	369.37	38,436
25-yr	78.88	72.73	14.41	58.32	369.57	41,553
50-yr	98.67	93.23	14.57	78.66	369.70	43,540
100-yr	120.68	114.94	14.72	100.22	369.83	45,549
_1.2"/2-hr	9.16	0.04	0.04	0.00	366.95	11,149

2025-1201 SCS*Multi-Event Tables*

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Events for Link 001A: POA

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-yr	46.87	46.87	0.00
2-yr	61.82	61.82	0.00
5-yr	88.88	88.88	0.00
10-yr	114.87	114.87	0.00
25-yr	155.16	155.16	0.00
50-yr	191.39	191.39	0.00
100-yr	231.95	231.95	0.00
_1.2"/2-hr	34.09	34.09	0.00

2025-1201 SCS*Multi-Event Tables*

Prepared by S. Deisher, P.E. of JMR Engineering, LLC

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Events for Link 2: TOTAL OFFSITE

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-yr	4.42	4.42	0.00
2-yr	7.19	7.19	0.00
5-yr	12.63	12.63	0.00
10-yr	18.04	18.04	0.00
25-yr	26.58	26.58	0.00
50-yr	34.40	34.40	0.00
100-yr	43.22	43.22	0.00
_1.2"/2-hr	2.51	2.51	0.00

Events for Link 3: LOD to SCM-01

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-yr	11.77	11.77	0.00
2-yr	16.06	16.06	0.00
5-yr	23.10	23.10	0.00
10-yr	29.46	29.46	0.00
25-yr	39.00	39.00	0.00
50-yr	47.42	47.42	0.00
100-yr	56.70	56.70	0.00
_1.2"/2-hr	7.70	7.70	0.00

Events for Link POA-01: POA

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-yr	5.17	5.17	0.00
2-yr	8.38	8.38	0.00
5-yr	14.98	14.98	0.00
10-yr	29.10	29.10	0.00
25-yr	60.78	60.78	0.00
50-yr	92.71	92.71	0.00
100-yr	125.45	125.45	0.00
_1.2"/2-hr	2.57	2.57	0.00

STORMWATER CONVEYANCE (RESERVED)

APPENDIX

STORMWATER INFILTRATION TESTING



March 4, 2024

Jack Robinson, P.E.
President
JMR Engineering

**RE: PA3868 Stormwater Testing for MRC Testing, East Whiteland Twp. Chesco
South Bacton Hill Road, Malvern, PA, 19355**

Mr. Robinson,

Per your request Uzman Engineering (UE) representatives Jason Culp, P.E. and Stephen Posner E.I.T. were present on-site February 21st, 22nd, 26th, 27th, 29th, and March 1st to perform a stormwater investigation at the above-mentioned project location. The investigation was required in order to provide design data as it relates to the subsurface infiltration suitability for proposed new data center and associated infrastructure.

PURPOSE:

This report shall serve as the stormwater facility design data. No other conclusions other than those specifically stated shall be drawn from this report.

INVESTIGATION:

A test pit study consisting of soil classification and double ring infiltrometer testing (based on appendix C of the PA BMP manual) was performed at 67 total test pit locations. Test pit locations were laid out based on a net testing criteria of 1 test per 40,000 square feet as well as at predetermined stormwater management locations. The design engineer (JMR Engineering) pre-determined these locations and survey staked them in the field. UE then excavated and tested these locations between four and six feet below ground surface (BGS), unless field conditions suggested that there was limitation or more favorable infiltrating soils at deeper or shallower depths. Test pits were also extended in most cases a minimum of 4' below the tested depth with generally a total depth of 10 feet or more with a few exceptions. This extended depth was to survey the soil below the test to determine if restrictive or more favorable strata existed and to ensure the tested data was reliable for the underlying soils.



The topography in general was relatively flat with previous disturbance from prior development of the area. This site had most recently been partially developed for proposed senior living housing starting in the late 2000s to early 2010s. This project was later abandoned. Various infrastructure such as manhole inlets, rough graded roadways etc. existed. Additionally, there were numerous stockpiles with one large stockpile bisecting the site north to south near the midpoint of the proposed development. It was apparent that many of the areas had been 'leveled' or flattened off and it is believed this was partially from the recent development as well as the remediation of the site following its use as the Foote Mineral site which required an Act 2 cleanup conducted in the early 2000s. There appeared to be historical fill covering most of the property, with less presence at the southern and western border line. Land cover was mostly undeveloped with secondary meadow gravelly, grassy areas with no pavement.

Weather conditions at the time of testing were:

- **Wednesday February 21:** 35 degrees and mostly cloudy. No rain or other precipitation had affected the area within the previous 24 hours.
- **Thursday February 22:** 39 degrees and mostly cloudy. No rain or other precipitation had affected the area within the previous 2 days.
- **Monday February 26:** 45 degrees and partly cloudy. No rain or other precipitation had affected the area within the previous 2 days.
- **Tuesday February 27:** 53 degrees and partly cloudy. No rain or other precipitation had affected the area within the previous 2 days.
- **Thursday February 29:** 38 degrees and partly cloudy. It had rained prior 24 hours prior to testing.
- **Friday March 1:** 40 degrees and partly/mostly cloudy. No rain or other precipitation had affected the area within the previous 24 hours.

FINDINGS:

The findings below use abbreviated nomenclature and terminology germane to soil classification and infiltration testing.

TP no. 1 | 363.11ft Moved 25' East | Tested @ 57" BGS |

0-23"	Gravelly Sandy SILT	
23"-27"	Dk Brn SILT stiff Old Topsoil	
27"-64"	Lt Brn Clayey SILT stiff	
64"-123"	Gravelly f/c Sandy SILT tr Clay Reddish Brn	

No GW or LZ encountered



TP no. 2 | 365.16ft | Tested @ 56" BGS |

0-18"	Topsoil	Topsoil
16"-46"	Lt Brn Gravelly Sandy Clayey SILT	
46"-114"	Dk Brn-Blk Gravelly f Sandy SILT	Topsoil FILL

No GW or LZ encountered

TP no. 3 | 366.87ft | Tested @ 78" BGS | C-20

0-16"	Topsoil	Topsoil
16"-92"	Tan Gravels & Sandy SILT Fill saturated at bottom	FILL
92"-174"	Dk Brn Gravelly SILT l clay & SAND topsoily FILL	Topsoil FILL

*GW @ 160" From seepage above

TP no. 4 | 365.41ft | Tested @ 84" BGS | C-20

0-9"	Topsoil	Topsoil
9"-62"	Tan Gravels & Sandy SILT Fill saturated at bottom	FILL
62"-122"	Dk Brn Gravelly SILT l clay & SAND topsoil FILL	Topsoil FILL
122"-156"	Org Brn med Stiff SILT	Native

*GW @ 12' from collected seepage water

TP no. 5 | 363.36.13ft | Tested @ 66" BGS |

0-30"	Dk Brn SILT l Sand	Topsoil Fill
30"-70"	Org Brn Clayey SILT	Fill
70"-120"	Channery Schist & Silty SAND	

No GW or LZ encountered

TP no. 6 | 364.79ft | Tested @ 64" BGS | C-XX

0-6"	Topsoil	Topsoil
6"-23"	Gravels & Clayey SILT	Fill
23"-60"	Channery Schist & Silty SAND	Fill
60"-120"	Org Brn SILT	

No GW or LZ encountered



TP no. 7 | 365.37ft | Tested @ 96" BGS | C-19

0-64"	Topsoil Fill	Topsoil Fill
64"-120"	Dk Brn Channery silty SAND	Fill
11"-120"	Org/Lt Brn SILT	

No GW or LZ encountered

TP no. 8 | 366.90ft | Tested @ 55" BGS |

0-23"	Dk Brn Gravelly Clayey SILT	Topsoil
23"-40"	Lt Brn f Gravelly Clayey SILT v. Stiff	
40"-123"	Dk Brn Channery Silty SAND Schistose Frags	Native
90"-126"	Reddish Brn Sandy SILT l gravels	

No GW or LZ encountered

TP no. 9 | 372.7ft | Tested @ 36" BGS | C-3

0-7"	Topsoil	Topsoil
7"-40"	Purple Gravelly Clayey SILT	
40"-70"	Lt Brn SILT	Native
70"-84"	Channery Silty SAND	Schist Residium

No GW or LZ encountered

TP no. 10 | 367.87ft | Tested @ 54" BGS |

0-38"	Brn Gravelly Sandy SILT l Clay	FILL
38"-45"	Dk Grey Millings & Silty Schist Blend	FILL
45"-64"	Lt Brn Clayey SILT	
64"-112"	Reddish/Org-Brn Sandy Clayey SILT	Stiff

No GW or LZ encountered

*Sewer trench at front of pit ~ 6'

TP no. 11 | 367.10ft | Tested @ 58" BGS | C-2

0-11"	Topsoil	
11"-50"	Lt Brn Clayey SILT	Plastic
50"-115"	Red Brn-Org Brn Sandy Clayey SILT	

No GW or LZ encountered



TP no. 12 | 363ft | Tested @ 38" BGS | C-3

0-16"	Lt Brn Sandy SILT	
16"-20"	Topsoil	Topsoil
20"-32"	Lt Brn Clayey SILT	
32"-64"	Reddish Brn Gravelly Sandy Clayey SILT	
64"-90"	Lt Brn Clayey SILT	

No GW or LZ encountered

TP no. 13 | 369ft | Tested @ 68" BGS |

0-58"	Brn Gravelly Clayey SILT	Stiff
58"-118"	Lt Brn Clayey SILT	sl. Plastic Stiff

No GW or LZ encountered

TP no. 14 | 363.46ft | Tested @ 72" BGS | C-6

0-9"	Modified	
9"-32"	Brn GRAVELS & Sandy SILT v. stiff	FILL
32"-64"	Reddish Brn Clayey SILT Sand & Gravels	
64"-132"	Lt Brn-Yellow SILT virgin	

No GW or LZ encountered

TP no. 15 | 363.75ft | Tested @ 71" BGS | C-7

0-16"	Modified	
16"-55"	Gravelly Sandy SILT	v. Stiff
55"-123"	Lt Brn SILT	v. Stiff

No GW or LZ encountered

TP no. 16 | ~364ft | Tested @ 64" BGS |

0-16"	Grey modified	
16"-26"	Topsoil	
26"-120"	Tan-Lt Brn Clayey SILT	Stiff

No GW or LZ encountered

TP no. 17 | 368.11 | Tested @ 63" BGS |

0-24"	Purplish Gravelly Clayey SILT	
24"-130"	Lt Brn Clayey SILT	sl. Plastic v. Stiff

No GW or LZ encountered



TP no. 18 | 363.52ft Moved 12' NE | Tested @ 68" BGS | C-6

0-12"	Modified	
12"-49"	Lt Brn Gravelly SILT	Fill
49"-52"	Dk Brn SILT	Topsoil
52"-82"	Lt Brn Clayey SILT l Gravels & f/c Sand	Stiff
82"-125"	Lt Brn Clayey SILT	Stiff

No GW or LZ encountered

TP no. 19 | 363.77ft | Tested @ 72" BGS | C-6

0-28"	Lt Brn Gravels & Sandy SILT tr Clay	Fill
28"-56"	Lt Brn Clayey SILT	Plastic Stiff
56"-84"	Sl. Reddish Brn Gravelly Sandy SILT	
84"-130"	Lt Brn Clayey SILT	Stiff

No GW or LZ encountered

TP no. 20 | 364.52ft | Tested @ 29" BGS | C-2

0-23"	Gravelly Sandy SILT	Fill
23"-27"	Topsoil Remnant	
27"-96"	Tan-Lt Brn Clayey SILT hard	Redox C/F episaturated

No GW or LZ encountered

TP no. 21 | 366.26ft | Tested @ 60" BGS |

0-29"	Purplish Gravelly Clayey SILT	
29"-34"	Old Topsoil	
34"-56"	Lt Brn Clayey SILT	Hard
56"-125"	Brn f/c Sandy SILT tr Clay	

No GW or LZ encountered

TP no. 22 | 366.03ft | Tested @ 56" BGS |

0-20"	Dk Brn SILT	Topsoil
20-125"	Lt Brn Clayey SILT	Stiff Redox C/F episaturated

No GW or LZ encountered



TP no. 23 | 366.23ft | Tested @ 62" BGS |

0-2"	Topsoil	
2"-40"	Lt Brn to Purple Gravelly f/c Sandy SILT tr Clay	Fill Redox C/D in upper 2' episaturation
40"-48"	Dk Brn SILT	Topsoil Old G.S.
48"-120"	Lt Brn Clayey SILT v. Stiff	

No GW or LZ encountered

TP no. 24 | 372.91ft | Tested @ 52" BGS |

0-62"	Lt Brn Gravelly Sandy Clayey SILT stiff	Fill
62"-72"	Org Brn Clayey SILT	Native
72"+	Purple Gravelly Sandy Clayey SILT v. stiff	

RR @ 72"

No GW

LZ encountered @ 72" BGS - Rock

TP no. 25 | 369.25ft | Tested @ 55" BGS |

0-57"	Gravelly Lt Brn Clayey SILT	v. Stiff Clayey Pkts
57"-67"	Dk Brn Sandy SILT	Topsoil Old G.S.
67"-90"	Lt Brn Clayey SILT	Native
90"-126"	Reddish Brn Sandy SILT l gravels	

No GW or LZ encountered

TP no. 26 | 369.10ft | Tested @ 54" BGS |

0-37"	Gravelly Lt Brn Clayey SILT	v. Stiff s. more Clayey Pkts
37"-65"	Dk Brn Sandy SILT	Topsoil Old G.S.
65"-123"	Lt Brn/ Reddish Brn Clayey SILT	Native

No GW or LZ encountered

TP no. 27 | 367.86ft | Tested @ 56" BGS |

0-22"	Dk Brn-Org Brn Topsoil & Clayey SILT Blend	Fill
22"-34"	Dk Brn SILT l f Sand to Clay	
34"-120"	Org-Brn Clayey SILT	Plastic

No GW or LZ encountered

TP no. 28 | 374.27ft | Tested @ 24" BGS | C-2

0-40"	Purple-Brn Gravelly Sandy SILT	Fill
40"-73"	Lt Brn Clayey SILT	

No GW or LZ encountered



TP no. 29 | 374.44ft | Tested @ 24" BGS | C-2

0-3"	Topsoil	Topsoil
3"-14"	Purplish Brn Gravels f Sandy Clay SILT	Fill
14"-50"	Lt Brn Clayey SILT tr Sand & Gravels	Native
50"-68"	Brn-White f SAND & SILT	Weathered Limestone Pinnacles

RR @ 68"

No GW

LZ encountered @ 68" BGS

TP no. 30 | 372.41ft | Tested @ 36" BGS | F-3

0-5"	Dk Brn Sandy SILT	Topsoil
5"-16"	Lt Brn Gravelly Sandy SILT tr Clay	Fill
16"-25"	Purplish Gravels/St & Sandy SILT	
25"-70"	Lt Brn Gravelly f Sandy SILT w cobbles	Boulders Limestone Pinnacles

RR @ 70"

No GW

LZ encountered @ 70" - Rock

TP no. 31 | ~374ft | Tested @ 54" BGS |

0-7"	Purple-Brn Gravels & Sandy SILT	Fill
7"-11"	3A AASHTO underlay w Fabric	
11"-60"	Lt Brn Clayey SILT	sl. Plastic
60"-123"	Red-Lt Brn SILT l f Sandy & Clay	Native/Virgin

No GW or LZ encountered

TP no. 32 | 385.13ft | Tested @ 54" BGS |

0-11"	Topsoil	
11"-45"	Lt Brn Clayey SILT	sl. Plastic
45"-80"	Brn Gravelly f/c Sandy SILT	
80"-122"	Lt Brn vf Sandy SILT	

No GW or LZ encountered

TP no. 33 | ~373ft | Tested @ 42" BGS |

0-126"	Lt Brn Gravelly Sandy SILT	Fill Loose
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GW @ 126" BGS

*Large Boulder at Bottom



TP no. 34 | 373.36ft | Tested @ 64" BGS |

0-117"	Lt Brn manf. Gravelly Sandy SILT	Fill Loose
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No GW or LZ encountered

TP no. 35 | 367.29ft | Tested @ 57" BGS |

0-43"	Lt Brn to Purple Gravelly f/c Sandy SILT tr Clay	Fill
46"-108"	Lt/Org Brn Clayey SILT stiff	

No GW or LZ encountered

TP no. 36 | 369ft | Tested @ 42" BGS | F-6

0-4"	Topsoil	
4"-12"	Lt Brn Gravelly Sandy SILT	Soft
12"-38"	Lt Brn Strong SBK SILT	Stiff
38"-70"	Gravelly Org Brn Clayey SILT	Plastic Stiff

No GW or LZ encountered

TP no. 37 | 373.38ft | Tested @ 52" BGS | C-5

0-3"	Topsoil	
3"-77"	Lt Brn Cobbly/Stoney Gravelly Silty SAND loose	Fill Loose
77"-93"	Dk Brn Sandy SILT topsoil	
93"-120"	Lt Brn Clayey SILT	Med Stiff to Stiff

No GW or LZ encountered

TP no. 38 | 374.70ft | Tested @ 71" BGS |

0-4"	Topsoil	Topsoil
4"-75"	Reddish-Purplish Gravelly Silty CLAY	v. Stiff w/ s. Gravels to Cobbly
75"-78"	Topsoil remnant	Old G.S.
78"-126"	Org/Rd Brn Clayey SILT	Stiff

No GW or LZ encountered

TP no. 39 | 376.54ft | Tested @ 84" BGS | C-8

0-4"	Topsoil	
4"-100"	Reddish-Purplish Gravelly Silty CLAY	Fill v Stiff w/ s.Gravels to Cobbly
100"-105"	Topsoil remnant	Old G.S.
105"-144"	Lt Brn Clayey SILT	Virgin Stiff

No GW or LZ encountered



TP no. 40 | 376.35ft | Tested @ 84" BGS |

0-6"	Topsoil	
6"-100"	Brn Gravelly Sandy SILT	
100"-140"	Brn-Org Brn Clayey SILT virgin	

Perched water in fill @ 88"

TP no. 41 | 373ft | Tested @ 55" BGS | F-3

0-48"	Bouldery/Clayey SILT Fill cobbly Fill	Fill
48"-120"	Gravelly Clayey SILT	Virgin

No GW or LZ encountered

TP no. 42 | 373.50ft | Tested @ 52" BGS |

0-2"	Topsoil	
2"-65"	Lt Brn Gravelly Cobbly l boulders	Fill
65"-108"	Purplish Clayey Silty SAND w/ Gravels	Fill
108"+	Water	

GW @ 96" Seepage 60"

LZ @ 60"

TP no. 43 | 373.38ft | Tested @ 67" BGS |

0-7"	Topsoil	
7"-47"	Yellow-Lt Brn Clayey SILT	sl. Plastic Stiff
47"-126"	Yellow-Lt Brn v.f. SAND & SILT	Stiff to Dense Limestone Pinnacles @ 110"-126" on side of pit

LZ @ 126" BGS

TP no. 44 | 378.5ft | Tested @ 25" BGS | F-1

0-6"	Brn Gravelly Sandy SILT	Topsoil mixed w Road Gravel
6"-30"	Tan SILT tr/l Clay	v. Stiff Redox C/D episat. seepage
30"-72"	Brn f/c Gravelly f/c Sandy SILT	v. Stiff

No GW or LZ encountered

TP no. 45 | 372.48ft | Tested @ 69" BGS |

0-24"	Brn Gravelly SILT	Fill v. Platy compact
24"-37"	Med/Lt Brn SILT	Virgin
37"-84"	Yellowish Brn Clayey SILT l f/c Sand	sl. Plastic v. Stiff to Hard
84"-116"	Purple-Brn Sapilitic Rook	Fractured & Vert. Bedded Channery to Flaggy

No GW or LZ encountered



TP no. 46 | 372ft | Tested @ 84" BGS |

0-108"	Gravels/Cobbles & SILT l/tr Clay & Sand	Fill & tr Organic Pockets
108"-125"	Org Brn Clayey SILT	Native

No GW or LZ encountered

TP no. 47 | 376.14ft | Tested @ 84" BGS |

0-72"	Gravels & f Sandy SILT 2A or 2RC	
72"-76"	Topsoil Remnants	Old G.S.
76"-130"	Org Brn Clayey SILT	

No GW or LZ encountered

TP no. 48 | ~379ft | Tested @ 54" BGS |

0-2"	Topsoil	Topsoil
2"-106"	Brn Gravelly Sandy SILT tr Clay	Fill Stiff
106"-126"	Clayey SILT Lt Brn	Virgin

No GW or LZ encountered

TP no. 49 | 376.14ft | Tested @ 54" BGS |

0-2"	Topsoil	Topsoil
2"-120"	Lt Brn manf. Gravels & Silty SAND	Fill v. Loose
120"-132"	Clayey SILT	Native

GW @ 120" BGS Rock/Boulders Limestone @ Bottom

TP no. 50 | 382.95ft | Tested @ 60" BGS |

0-3"	Topsoil	
3"-100"	Dk Brn-Yellowish Gravelly Cobble Sandy SILT tr Clay	Fill Loose

No GW or LZ encountered

* Collapsed Below 100"

TP no. 51 | 383.41ft | Tested @ 48" BGS |

0-5"	Topsoil	
5"-96"	Lt Brn-Tan Gravelly Cobbly Sandy SILT	Fill Loose

GW @ 66"

TP no. 52 | 381.76ft | Tested @ 59" BGS |

0-84"	Lt Brn-Yellow Brn Gravelly/Cobbley Clayey SILT	Seepage T/O
84"-120"	Gravels & f Sandy SILT imported 2A or 2RC	Loose

No GW or LZ encountered



TP no. 53 | 375.73ft | Tested @ 66" BGS |

0-4"	Topsoil	Topsoil
4"-48"	Tan-Red Var Gravelly SILT l Clay	Fill v. Stiff to Hard
48"-120"	Org-Lt Brn Clayey SILT	Native v. Stiff

No GW or LZ encountered

TP no. 54 | 374.60ft | Tested @ 60" BGS | C-XX

0-5"	Topsoil w Gravel	Topsoil
5"-11"	Millings	Seepage T/O
11"-30"	Yellow-Tan Gravelly Cobble SILT	Hard Fill Seepage T/O
30"-50"	Dk Grey Gravels & SILT – Topsoil	Old G.S.
50"-120"	Yellow Brn SILT tr Gravels/Cobbles	v. Stiff

No GW or LZ encountered

TP no. 55 | 379.61ft | Tested @ 44" BGS | C-1

0-12"	Brn Gravelly Sandy SILT topsoil mixed w Road Gravel	
12"-43"	Tan SILT tr/l Clay v. stiff redox C/D episat.	
43"-60"	Brn f/c Gravelly f/c Sandy SILT	v. Stiff

No GW or LZ encountered

TP no. 56 | 384.77ft | Tested @ 84" BGS | C-6

0-8"	Humus & Root Mat	
8"-17"	Dk Brn Clayey SILT	Topsoil
17"-42"	Brn SILT l clay v. sl.	sl. Plastic v. Stiff
42"-116"	Yellow/Org Brn Clayey SILT v. stiff	v. Stiff

No GW or LZ encountered

TP no. 57 | 379.04ft | Exc. ~8" Below Stake | Tested @ 68" BGS |

0-20"	Dk Brn Millings	Topsoil
20"-120"	Brn Clayey SILT to Silty CLAY	Stiff

No GW or LZ encountered



TP no. 58 | 384.88ft | Tested @ 52" BGS |

0-5"	Modified fabric @ bottom	
5"-30"	Org. Lt Brn Gravelly Sandy SILT	
30"-34"	Topsoil Dk Brn SILT – old topsoil	
34"- 114"	Gr/cb clayey SILT	Stiff

RR in Limestone frags @ 114"

No GW

LZ @ 114" – Rock

TP no. 59A | ~35' W of Stake | Tested @ 61" BGS |

0-4"	Topsoil	Topsoil
4"-51"	Lt Brn Gr/Cobbles w f Sandy SILT	Seepage T/O
51"-100"	Lt Brn Gravelly Sandy SILT tr Clay stiff	

RR at 100"

No GW

LZ @ 100" – Rock

TP no. 59 | 385.13ft | Tested @ 32" BGS |

0-8"	Tan Cobbly to Bouldery f Sandy SILT	Topsoil
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Open fracture of significant trapped water

GW @ 32"

TP no. 60 | 384.70ft | Tested @ 62" BGS |

0-6"	Topsoil	Topsoil
6"-8"	Millings	
8"-54"	Brn Gravelly & Sandy Loose	Fill
54"-115"	Yellowish Brn Gravelly SILT l Sand & Clay	Virgin

Seepage Heavy @ 4'

Fills bottom of TP to 8' BGS

GW Perked @ 4'

TP no. 61 | 385.23ft | Tested @ 76" BGS |

0-3"	Gravelly Topsoil	Topsoil
3"-54"	Gravels & Lt. Brn Clayey SILT saturated trapped water	
54"-114"	Lt Brn Clayey SILT tr/lt Gravel + Cobble	

GW Perked @ 4'



TP no. 62 | 387.04ft | Tested @ 76" BGS |

0-8"	Topsoil/Gravel	Topsoil
8"-60"	Lt Brn-Yellow Brn Grvl/Cbbly w/ Clayey SILT stiff Fvb	
60"-71"	Dk Brn SILT roots old Top	
71"-120"	Brn-Lt Brn v stiff Clayey SILT Gravelly	

No GW or LZ encountered

TP no. 63 | 385.38ft | Tested @ 85" BGS |

0-8"	Modified w/ Fabric	
8"-75"	Lt to Org Brn Gr/Cob f sandy SILT tr Clay	
75"-85"	Topsoil w Root Mat	Old G.S.
85"-132"	Grey-Brn Clayey SILT stiff	

No GW or LZ encountered

TP no. 64 | 383.27ft | Tested @ 71" BGS |

0-7"	Millings & Stone	
7"-36"	Gravelly Clayey SILT Fill Platy	vcr. Stiff
36"-84"	Grey Gravelly m/c SAND tr. SILT imported 2A or similar	
84"-116"	Brn-Red-Brn Clayey SILT	

No GW or LZ encountered

TP no. 65 | 384.70ft | Tested @ 32" BGS | C-1'

0-8"	Drk Brn SILT	Topsoil
8"-41"	Org Brn Clayey SILT tr Gravel	
41"-66"	Fracture Limestone & Org Brn SILT	
66"+	RR	

No GW or LZ encountered

TP no. 66 | ~390ft | Tested @ 66" BGS | C-2'

0-16"	AASHTO 2A	
16"-25"	Brn-Grey SILT	tr Organics
25"-60"	Reddish Brn Clayey SILT Stiff	
60"-120"	Yellow-Lt Brn vf Sandy SILT stiff	

No GW or LZ encountered



TP no. 67 | 392.08ft | Tested @ 32" BGS | F-1'

0-8"	Humus & Root Mat	
8"-22"	Dk Brn Clayey SILT	Topsoil
22"-40"	Brn Clayey SILT	Plastic
40"-80"	Reddish Brn to Yellowish Brn Clayey SILT tr c. Sand	

No GW or LZ encountered

TP no. **1** 0, 0, 0, 0→ 0 Final Reading w/30-minute intervals
0 inches/hour @ 57 inches BGS

TP no. **2** 0, 0, 1/8", 0→ 0 Final Reading w/30-minute intervals
0 inches/hour @ 56 inches BGS

TP no. **3** TEST ABANDONED DUE TO FLOODING FROM PERCHED WATER ABOVE
i.e. 0 inches/hour

TP no. **4** TEST ABANDONED DUE TO FLOODING FROM PERCHED WATER ABOVE
i.e. 0 inches/hour

TP no. **5** 0, 0, 1/4", 1/4"→ 0.25" Final Reading w/30-minute intervals
0.5 inches/hour @ 66 inches BGS

TP no. **6** 0, 0, 0, 0→ 0 Final Reading w/30-minute intervals
0 inches/hour @ 64 inches BGS

TP no. **7** 4", 4", 4", 4"→ 4" Final Reading w/4-minute intervals
60" inches/hour @ 96 inches BGS

TP no. **8** 0, 0, 0, 0→ 0 Final Reading w/30-minute intervals
0 inches/hour @ 55 inches BGS

TP no. **9** 0, 0, 0, 0→ 0 Final Reading w/30-minute intervals
0 inches/hour @ 36 inches BGS

TP no. **10** 1/8", 0, 0, 0→ 0 Final Reading w/30-minute intervals
0 inches/hour @ 54 inches BGS

TP no. **11** 1", 3/4", 3/4", 1/2"→ 0.5" Final Reading w/30-minute intervals
1 inches/hour @ 58 inches BGS

TP no. **12** 1/8", 1/4", 1/4", 1/4"→ 0.25" Final Reading w/30-minute intervals



0.5 inches/hour @ 38 inches BGS

TP no. **14** $\frac{1}{4}$ ", $\frac{1}{4}$ ", 0, 0 $\rightarrow$ 0 Final Reading w/ 30-minute intervals
0 inches/hour @ 72 inches BGS

TP no. **13** $\frac{1}{2}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25" Final Reading w/30-minute intervals
0.5 inches/hour @ 68 inches BGS

TP no. **15** 0, 0, 0, 0 $\rightarrow$ 0 Final Reading w/30-minute intervals
0 inches/hour @ 71 inches BGS

TP no. **16** 0, 0, 0, 0 $\rightarrow$ 0 Final Reading w/30-minute intervals
0 inches/hour @ 64 inches BGS

TP no. **17** 0, 0, 0, 0 $\rightarrow$ 0 Final Reading w/30-minute intervals
0 inches/hour @ 63 inches BGS

TP no. **18** 0, $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125 Final Reading w/30-minute intervals
0.25 inches/hour @ 68 inches BGS

TP no. **19** $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125" Final Reading w/30-minute intervals
0.25 inches/hour @ 72 inches BGS

TP no. **20** $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25" Final Reading w/30-minute intervals
0.5 inches/hour @ 29 inches BGS

TP no. **21** $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125" Final Reading w/30-minute intervals
0.25 inches/hour @ 60 inches BGS

TP no. **22** 0, 0, 0, 0 $\rightarrow$ 0 Final Reading w/30-minute intervals
0 inches/hour @ 56 inches BGS

TP no. **23** $\frac{1}{2}$ ", $\frac{1}{2}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25" Final Reading w/30-minute intervals
0.5 inches/hour @ 62 inches BGS

TP no. **24** 0, 0, 0, 0 $\rightarrow$ 0 Final Reading w/30-minute intervals
0 inches/hour @ 52 inches BGS



TP no. **25** $\frac{1}{2}$ ", $\frac{1}{4}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125" Final Reading w/30-minute intervals
0.25 inches/hour @ 55 inches BGS

TP no. **26** 2", 2", $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125" Final Reading w/30-minute intervals
0.25 inches/hour @ 54 inches BGS

TP no. **27** $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25 Final Reading w/ 30-minute intervals
0.5 inches/hour @ 56 inches BGS

TP no. **28** $\frac{1}{2}$ ", $\frac{1}{2}$ ", 0, 0 $\rightarrow$ 0 Final Reading w/ 30-minute intervals
0 inches/hour @ 24 inches BGS

TP no. **29** $1\frac{1}{2}$ ", $1\frac{1}{2}$ ", $1\frac{1}{2}$ ", $1\frac{1}{2}$ " $\rightarrow$ 1.50" Final Reading w/30-minute intervals
3 inches/hour @ 24 inches BGS

TP no. **30** $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{2}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25" Final Reading w/30-minute intervals
0.5 inches/hour @ 36 inches BGS

TP no. **31** $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125" Final Reading w/30-minute intervals
0.25 inches/hour @ 54 inches BGS

TP no. **32** 1", $1\frac{1}{4}$ ", 1", 1" $\rightarrow$ 1" Final Reading w/30-minute intervals
2 inches/hour @ 54 inches BGS

TP no. **33** 1", 1", $\frac{3}{4}$ ", $\frac{3}{4}$ " $\rightarrow$ 0.75" Final Reading w/30-minute intervals
1.5 inches/hour @ 42 inches BGS

TP no. **34** $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25" Final Reading w/30-minute intervals
0.5 inches/hour @ 64 inches BGS

TP no. **35** 3", 3", $1\frac{1}{2}$ ", $1\frac{1}{4}$ " $\rightarrow$ 1.25" Final Reading w/30-minute intervals
2.5 inches/hour @ 54 inches BGS

TP no. **36** $\frac{3}{8}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ ", $\frac{1}{4}$ " $\rightarrow$ 0.25" Final Reading w/ 30-minute intervals
0.5 inches/hour @ 42 inches BGS

TP no. **37** $\frac{1}{8}$ ", $\frac{1}{8}$ ", $\frac{1}{8}$ " $\rightarrow$ 0.125" Final Reading w/30-minute intervals
0.25 inches/hour @ 52 inches BGS



- TP no. **38** 5/8", 5/8", 5/8", 5/8" → 0.625" Final Reading w/ 30-minute intervals
1.25 inches/hour @ 71 inches BGS
- TP no. **39** 5/8", 1/2", 1/2", 1/2" → 0.5" Final Reading w/ 30-minute intervals
0.5 inches/hour @ 84 inches BGS
- TP no. **40** 1-1/4", 1-1/8", 1-1/8", 1-1/8" → 1.125" Final Reading w/ 30-minute intervals
2.25 inches/hour @ 84 inches BGS
- TP no. **41** 0, 0, 0, 0 → 0 Final Reading w/ 30-minute intervals
0 inches/hour @ 36 inches BGS
- TP no. **42** 0, 0, 0, 0 → 0 Final Reading w/ 30-minute intervals
0 inches/hour @ 52 inches BGS
- TP no. **43** 0, 0, 0, 0 → 0 Final Reading w/ 30-minute intervals
0 inches/hour @ 67 inches BGS
- TP no. **44** 1/4", 1/4", 1/4", 1/4" → 0.25" Final Reading w/ 30-minute intervals
0.5 inches/hour @ 25 inches BGS
- TP no. **45** 0, 1/16", 1/16", 1/16" → 0.0625" Final Reading w/ 30-minute intervals
0.125 inches/hour @ 69 inches BGS
- TP no. **46** 1/8", 1/8", 1/8", 1/8" → 0.125" Final Reading w/ 30-minute intervals
0.25 inches/hour @ 84 inches BGS
- TP no. **47** 1/4", 3/16", 3/16", 3/16" → 0.1875" Final Reading w/ 30-minute intervals
0.375 inches/hour @ 84 inches BGS
- TP no. **48** 1/8", 1/8", 1/8", 1/8" → 0.125" Final Reading w/ 30-minute intervals
0.25 inches/hour @ 54 inches BGS
- TP no. **49** 3", 3", 3", 3" → 3" Final Reading w/ 10-minute intervals
18 inches/hour @ 54 inches BGS
- TP no. **50** 0, 0, 0, 0 → 0 Final Reading w/ 30-minute intervals
0 inches/hour @ 60 inches BGS
- TP no. **51** 1", 1", 1", 1" → 1" Final Reading w/ 30-minute intervals
2 inches/hour @ 48 inches BGS



- TP no. **52** 0, 0, 0, 0 → 0 Final Reading w/ 30 min. intervals
0 inches/hour @ 59 inches BGS
- TP no. **53** 1/16", 1/16", 1/16", 1/16" → 0.125 Final Reading w/ 30 min. intervals
0.125 inches/hour @ 66 inches BGS
- TP no. **54** 1/8", 1/8", 1/8", 1/8" → 0.25" Final Reading w/ 30 min. intervals
0.25 inches/hour @ 60 inches BGS
- TP no. **55** 1/16", 1/16", 1/16", 1/16" → 0.0625" Final Reading w/ 30 min. intervals
0.125 inches/hour @ 40 inches BGS
- TP no. **56** 1/8", 1/8", 1/8", 1/8" → 0.125" Final Reading w/ 30 min. intervals
0.25 inches/hour @ 84 inches BGS
- TP no. **57** 0", 0", 0", 0" → 0 Final Reading w/ 30 min. intervals
0 inches/hour @ 68 inches BGS
- TP no. **58** 0", 0", 0", 0" → 0 Final Reading w/ 30 min. intervals
0 inches/hour @ 52 inches BGS
- TP no. **59A** 0", 0", 0", 0" → 0 Final Reading w/ 30 min. intervals
0 inches/hour @ 50 inches BGS
- TP no. **60** 1/2", 5/8", 1/2", 1/2" → 0.5 Final Reading w/ 30 min. intervals
1 inches/hour @ 62 inches BGS
- TP no. **61** 1/2", 1/2", 1/2", 1/2" → 0.5" Final Reading w/ 30 min. intervals
1 inches/hour @ 76 inches BGS
- TP no. **62** 0, 0, 1/16", 1/16" → 0.0625" Final Reading w/ 30 min. intervals
.125 inches/hour @ 76 inches BGS
- TP no. **63** 0", 1/16", 1/16", 1/16" → 0.0625 Final Reading w/ 30 min. intervals
0.125 inches/hour @ 85 inches BGS
- TP no. **64** 0, 0, 1/16", 1/16" → 0.0625 Final Reading w/ 30 min. intervals
0.125 inches/hour @ 71 inches BGS



TP no. **65** 1/8", 1/8", 1/8", 1/8" → 0.125" Final Reading w/ 30 min. intervals
0.25 inches/hour @ 32 inches BGS

TP no. **66** 1/8", 1/8", 1/8", 1/8" → 0.125" Final Reading w/ 30 min. intervals
0.25 inches/hour @ 66 inches BGS

TP no. **67** 1/4", 1/4", 1/4", 1/4" → 0.25" Final Reading w/ 30-minute intervals
0.5 inches/hour @ 32 inches BGS

CONCLUSIONS AND RECOMMENDATIONS:

1. The design engineer is recommended to utilize the above findings for initial BMP infiltration system design. Typical rate reductions required is suitable for the design. Given the sizes of the facilities more testing is warranted to confirm the initial assumptions.
2. The site is located mainly within the Ledger Formation, and very small portions are within the Chickies Formation to the north and Elbrook Formation to the south. The Ledger geologic formation is a carbonate geology that is susceptible to karst formation. Additionally, numerous surface depressions have been mapped across the site including the western portion of the test pits. In general, UE does not recommend infiltration atop karst geology, particularly where the site has nearby, mapped surface depressions (SEE BELOW) and sinkholes. UE does not recommend infiltration at this site given the nearby mapped depressions and known geologic conditions.
3. It is recommended to have the stormwater facility construction inspected by the geotechnical engineer or representative to ensure the infiltration interface is located in the correct stratum and/or to visually inspect the bottom to ensure no at surface karst features are present given the highly variable infiltration rates this is especially important so areas can be over excavated as needed.

Contact the undersigned should any additional questions or concerns arise.

Sincerely,

Jason Culp, P.E.
Vice President
jason@uzmanengineering.com



OVERALL TEST PIT LOCATIONS
N.T.S.



KARST FEATURES LOCATION PLAN
N.T.S.

DRAINAGE AREA PLANS

